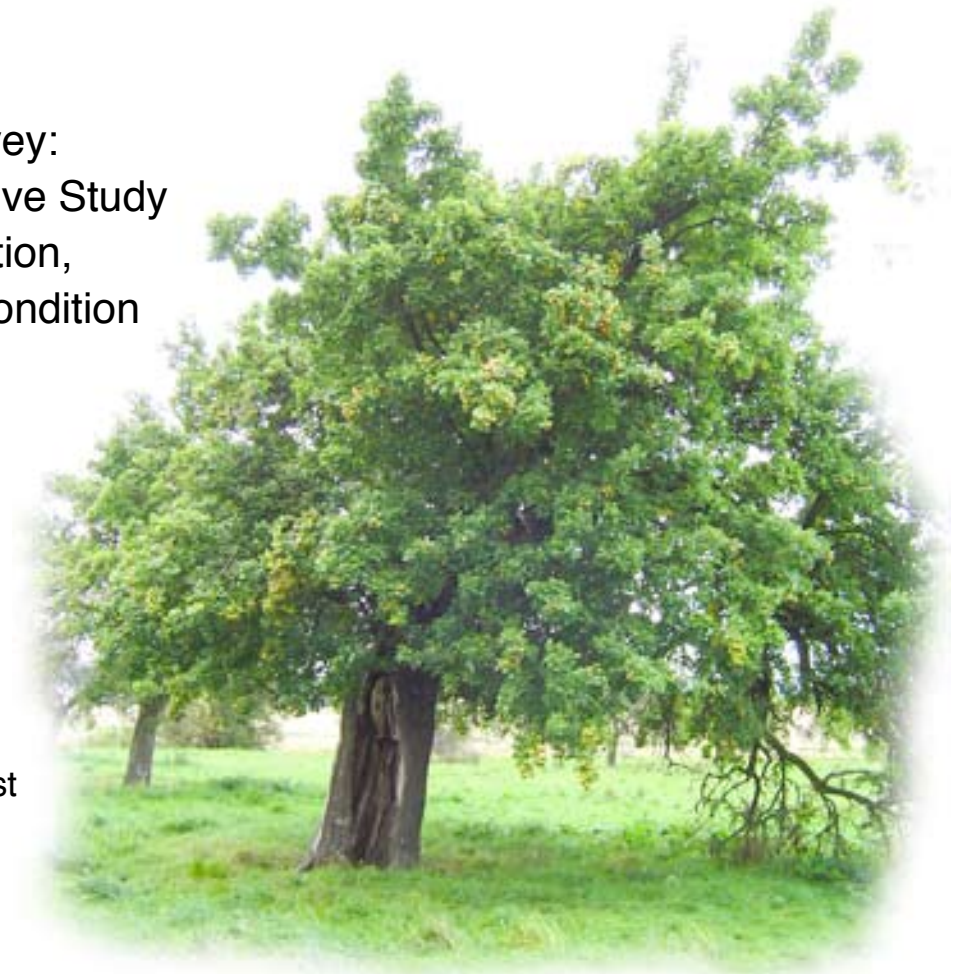


Historic Orchards of the Carse of Gowrie

Phase 1 Survey:
An Investigative Study
on their Location,
Extent and Condition

Report to
Perth & Kinross
Countryside Trust



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Executive Summary

This timely survey of historic orchards in the Carse of Gowrie was initiated by Perth & Kinross Countryside Trust with support from Forestry Commission Scotland and Tayside Biodiversity Partnership. The Carse of Gowrie is a low-lying strip of land to the north of the River Tay between Perth and Dundee. It has been well known for its orchards since monastic settlement in 12th Century. The survey was carried out in August and September 2007 on behalf of PKCT by Dr Crispin W. Hayes of CW Hayes Associates: Eco-Consultancy

A list of historic orchards in the Carse of Gowrie was developed from the historic and contemporary literature. This formed the basis for investigation. A total of 51 sites were visited to determine the presence, condition and extent of the historic orchards. A database was used to record survey data including tree types, numbers, condition, and biodiversity indicators together with a record of the orchard keeper and anecdotal evidence. Numerous photographs were taken to complete this contemporary snapshot.

The survey found that most historic orchards of the Carse no longer exist. They have been in decline for over a century, but have mainly been lost during the last 50 years. Reasons for loss were found to be; clearance for agriculture, benign neglect, and housing development. 28 orchards were verified to no longer exist.

The remaining orchards were categorised according to their cultural heritage, economic potential, and biodiversity value. Of the 17 remaining, there are 9 orchards of particular value. These are: Barnhill Toll (West Oaks), Carse Grange (The Retreat), Fingask, Flatfield, Grange, Megginch, Monorgan, Port Allen, Wester Ballindean (West). It is recommended that the owners of these orchards be engaged, incentivised and supported to retain and actively manage them. New trees of appropriate varieties should be planted in order to secure the long term future of these orchards.

There are a further 5 orchards that were found to be considerably diminished in tree numbers, but are still of heritage interest and could potentially be revitalised. These are: Bogmiln, Inchyra Farm, Muirhouses, Newbigging, Templehall. It is also recommended that the owners of these are engaged with.

Very few of the remaining orchards are in good condition. Most have been neglected for at least 4 decades, commercial cropping appeared to cease around 1970. However fruit trees are long lived – those of the greatest longevity being pears, that typically live to 200 years old. Therefore many of the old orchards were found to still produce a considerable amount of fruit. However the fruit of the unmanaged trees was now often small, and varietal knowledge was very poor. Thus utilisation of fruit was, with a few exceptions, found not to be great.

The varietal heritage of the orchards of the Carse should not be under-estimated. Previous work on the south side of the Tay has shown that some rare pear varieties exist and it is considered likely that this is also the case in the Carse. The area has already been shown to notable for its heritage varieties of apples (including

Bloody Ploughman, Tower of Glamis, etc). Genetic diversity may be considered of particular importance and it is recommended that it be explored further.

Biodiversity indicators such as trunk cavities and bark fissures on veteran trees (typically over 100 years old) showed that the remaining orchards were of high biodiversity value. Traditional orchards with veteran trees are now an uncommon habitat in Scotland. The UK Biodiversity Action Plan Review has added "Traditional Orchards" to the list of habitats that need focussed attention, because orchard losses have exceeded 90% in the past 30 years. In response the Tayside Biodiversity Action Partnership has prepared a draft "Community Gardens, Orchards and Allotments" Habitat Action Plan and it is proposing a "Tayside Traditional Orchards Habitat Action Plan".

Evidence collected during the survey leads to the conclusion that all the remaining orchards are liable to continuing degradation or total loss for the same reasons as those that no longer exist. Pressure from housing development was found to be a particular contemporary threat. It was found that there is currently no presumption against planning permission being granted to build on historic orchards. Historic orchards enjoy little or no legal protection from destruction. It is recommended that work is carried out to establish a status of these places that does confer some protection.

It is recommended that awareness be raised about the cultural heritage aspects, and potential economic and rich biodiversity value of the remaining orchards. The Giant Redwoods Project has already shown that the Carse could be established more firmly as a tourist destination. It is recommended that the principal constituencies to direct awareness raising activity are: the public, professionals such as planners & developers, and the farming community. Examples of awareness raising activities are: community and school orchards, orchard trails and blossom walks.

Finally it is recommended that a local association be created to champion these orchards, in order to coordinate events & practical training and provide a coherent focus of attention.

1 Introduction

The Carse of Gowrie has a rich fruit heritage. Today it is well known as a centre of soft fruit production. However, its ancient orchard heritage was less known, and the contemporary richness had yet to be determined. That determination was the focus of this study.

The purpose of the study was to create a snapshot and benchmark of the remaining orchards, which would provide a foundation for further work.

The Carse of Gowrie is a large area of some 25km in length between Perth to Invergowrie, and stretching from the River Tay several km north to a cut-off at 30m above Ordnance Datum.

In this Phase 1 survey, the scope of orchards that exist in the Carse has been determined and those of the most heritage value – the ‘hidden gems’ - are identified and recorded by on-the-ground survey.

The primary output from this survey is the information held on the database accompanied by the picture collection linked to it. This report summarises and discusses that data, draws conclusions and makes recommendations.

2 Historical Context

2.1 Monastic Influence

The origins of the orchard cultivation on the Carse of Gowrie appear to stem from the direct influence of monastic establishments that surround this area¹. To the north is Cupar (or Coupar) Abbey at Coupar Angus, to the west Scone. Over the water from Errol on the south side of the Tay is Lindores Abbey at Newburgh, and further upstream the Cistercian nuns of Elcho². These centres of learning and power were established in the 12th century.

The monks enjoyed ‘privileges’ (Papal Bull – in effect a tax break from the Pope) on the land that they brought into

1 Easson, DE (ed.) (1947), *Charters of the Abbey of Coupar Angus. Volume 1. Charters I to CXVIII*, (Perth Library edn., Edinburgh: Scottish History Society/ University of Edinburgh.)

2 Dowden, Rev. John (ed.) (1903), *Chartulary of the Abbey of Lindores 1195-1479*, (Perth Library edn., Edinburgh: Scottish Historical Society/ University of Edinburgh)

cultivation – and thus draining and cultivation was incentivised. The monks in turn incentivised the growing and maintenance of orchards³.

The creation of larger commercial orchards may have come later. Storrie⁴ suggests that it was only after the Act of Union that sufficient stability prevailed for the planting of fruit to become a more general.

Further research, which is outside the remit of this study, is required to document the source of orchard species and process by which the original orchards were established. Some recent work on apple varieties and their development, including those of the Carse, has been published by Robertson⁵. In addition, Dr Joan Morgan is currently preparing a comprehensive book on pear varieties, that would form a companion to her 2002 publication 'The New Book of Apples'. During her research she has visited the Carse of Gowrie in 2007, and has taken samples to graft⁶.

2.2 Economic Significance of Orchards

Researching the historical record indicates that orchards have not been a key part of the rural economy for several centuries. The 'Statistical Accounts' prepared by the clergy of each parish are a useful record in this respect⁷. The table below shows the typical levels of produce and their value for the Parish of Longforgan at that time.

3 Rogers, Charles Rev. (ed.) (1879), *Rental Book of the Cistercian Abbey of Cupar-Angus. Vol 1*, (Perth Library edn., London: The Grampian Club)

4 Storrie, David L (1949), 'Apples and Pears in Scotland', *The Fruit Year Book* 28-35.

5 Robertson, Forbes W. (2007), 'A History of Apples in Scottish Orchards', *Garden History*, 35 (1), 37-50.

6 Morgan (2007) Personal communications by telephone & email. Morgan formerly of the Brogdale Trust. Co-author of forthcoming book is Alison Richards. Publication date is likely to be 2009. Website: <http://www.fruitforum.net/>

7 anon (ed.) (1845), *The Statistical Account of Perthshire. Vol X Perth. (commonly known as the Second Statistical Account)*, (Perth Library edn., Edinburgh: William Blackwood)

Figure 1: Economic Value of Produce in Longforgan Parish, 1845

795 Scots acres of wheat, supposed to yield 3265 qrs. 4 bush. at L. 2, 11s. 5d. per qr., being average of fiars for the last seven years,	L. 8395	1	1½	-
710 do. of barley, yielding 3469 qrs. 2 bush. at L. 1, 8s. 5½d.	4931	5	9½	
970 do. of oats yielding 5090 qrs. 2 bush. at L. 1, 1s. 9d.	5585	12	11½	
238 do. of pease and beans, yielding 922 qrs. 2 bush. at L. 1, 7s. 7½d. do.	-	-	-	1273 17 1½
358 do of potatoes, at L. 9, 11s. 6d. per acre,	-	-	-	3427 17 0
467 do. of turnips, at L. 3, 3s. per do.	-	-	-	1471 1 0
555 do. of cutting grass, at L. 6, 6s. per do.	-	-	-	3496 10 0
294 do. of pasture, at L. 3, 5s. per do.	-	-	-	955 10 0
974 do. of do. at L. 1, 7s. 6d. per do.	-	-	-	1339 5 0
Produce of quarries,	-	-	-	3000 0 0
orchards,	-	-	-	500 0 0
Thinning of wood,	-	-	-	1800 0 0
Total yearly value of raw produce,	L. 36,126	0	0	

Source: Second Statistical Account p417

Orchards are the smallest item in the account of produce. It is worth bearing in mind that Longforgan Parish contained the orchards of Templehall/ Monorgan, Castle Huntly, Rawes and Overyards.

This is a more detailed record than many parishes but it encapsulates the general picture. At £500 per annum it represents just 1.4% of the value of parish produce. For St Madoes Parish, containing probably only Pitfour Orchard, it was just 0.25%.

2.3 Decline and Globalisation

At the outset of this study it was expected, that the decline of the orchards of the Carse of Gowrie had really only happened post World War Two, with the intensification and specialisation of agriculture during the so – called green revolution. However, the historical record makes it clear that the decline in orchards began over a century earlier in the Victorian era. Hodd⁸ states:

“The late eighteenth century and the first part of the nineteenth century probably saw the Carse orchards at their most productive, but during the second half of the nineteenth century circumstances combined to cause a decline that continued during the early years of the present [20th] century.”

In 1975 Adrian Hodd wrote what is still perhaps the seminal contemporary paper on orchards in the Carse, bringing together much of the history and creating a better understanding of the long slow decline. A key factor during the 19th century appears

⁸ Hodd, ANL (1975), ‘The cultivation of orchard fruits in the Carse of Gowrie, 1750-1900’, *Scottish Geographical Magazine*, 91 79-90.

the growth in grain for export. This balance between grain and fruit – the competing priorities of land-use and of labour - seems likely to hold one key to the demise of the orchards.

A further aspect not discussed in the literature is that of mechanisation. Many of the orchards were silvo-arable systems where the orchard floor had crops grown in a rotation. Hodd cites evidence that orchard fruit yield was doubled by having an arable undercrop. In 1810, Gorrie & Machray record that 16 of the orchards on the Carse were cultivated with an arable rotation, and 12 were in grass or pasture. The latter half of the 19th Century saw horse draw mechanisation beginning to become available. Ploughs, harrows and seed drills may well have been able to work satisfactorily between the rows of trees. But the coming of the horse drawn mechanical reaper (invented in 1831) and the reaper-binder (1872) was different. It is not clear when they first came to the Carse. However it is likely that the unwieldy binder would have been incompatible with the confines of what we may call a 'pomo-arable' system. This again was detrimental in the contest for land and labour. Therefore, it is suggested here that mechanisation was one factor that led to orchards not being available for arable production, and this led to a reduction in their relative value.

A further factor was globalisation. In the late Victorian era, it was already playing its part. Apples and pears were being imported from North America and Europe. In 1884 Robertson⁹ wrote

“I was truly sorry to see so many large orchards in the Carse with so very few of the large kinds - apples that are really worth being sent to market, and likely to be able to compete with those brought from the Continent and from America”

It seems that the orchards of the Carse had been suffering from poor and inadequate management even then. Robertson states:

“The cultivation of fruit in this country, especially in Scotland, has been neglected of late. In the Carse of Gowrie, as well as elsewhere, many good orchards have been allowed to run to waste. There has been a great outcry as to bad seasons, and not without good cause, but bad culture has as much to do with it as bad seasons . . .”

9 Quoted in Hodd (1975)

Fifty years ago in 1958, Turner¹⁰ wrote that

“these orchards have not within living memory, been managed correctly”

Thus it can be concluded that the decline of the orchards of the Carse was caused by multiple factors - that have been at play for well over a century.

2.4 Orchards in the Historic Record

Orchards have been recorded in historical documents on the Carse at various intervals over the centuries. Hodd (1975) cites three historical snapshots which are useful to tabulate in this context. Roy's Military Map of 1750, Gorrie & Machray in 1814 and the Ordnance Survey map of 1860s. The table below shows when each orchard was mentioned. This gives some suggestion as to when various orchards were created and when they were lost, though it should not be taken as exhaustively accurate.

10 Quoted in Hodd (1975)

Table 1: Carse of Gowrie Orchards Recorded Since 1750

Roy's Military Map 1750	Gorrie & Machray 1814	OS map 1860s	Historic Orchard	Parish/Area
			Annat Cottage	Rait
yes	yes		Ardgaith	Errol
		yes	Balgay	Inchture
		yes	Ballindean	
		yes	Bathaydock	
			Benvie	
	yes		Bogmiln	Grange
yes			Castle Huntly	
yes			Clashbenny	St Madoes
yes	yes		Craigdallie	Kinnaird
	yes		Drimmie	Inchture
yes			Errol Park	
	yes		Errol Village	Errol
yes	yes	yes	Fingask	
		yes	Flatfield	
			Friaton/ Barnhill Toll	
	yes	yes	Glencarse House	
	yes		Glendoick	
		yes	Gourdiehill	
		yes	Grange	
	yes		Hill (Errol Parish)	Errol
		yes	Horn	Inchmichael
	yes		Inchmartin	Errol
	yes		Inchture	
yes			Kilspindie	
	yes		Kinfauns Castle	
		yes	Mains of Kinnaird	
	yes	yes	Megginch	
yes (Leys)	yes		Midleys	Grange
	yes	yes	Muirhouses	Grange
			Murie	Errol
yes			Mylnefield	
		yes	New Farm (Errol)	
	yes		Newbigging	
		yes	Newton of Glencarse	
	yes	yes	Onthank (now Broomhall ?)	Inchture
	yes		Overyards	Longforgan
yes			Panshill	by Glencarse
			Pilmore	
yes	yes	yes	Pitfour	St Madoes
yes			Pitroddie	
	yes	yes	Port Allen (Pow of Errol)	
	yes	yes	Powgavie	Grange
		yes	Rait	
	yes	yes	Rawes	Longforgan
			Rossie Priory	
	yes	yes	Seasides	
	yes	yes	Seggieden	
		yes	Shipbriggs	Megginch
		yes	Templehall/ Monorgan	
	yes	yes	Waterybutts	Grange

3 Survey Methodology

The historical research provided a list of the archaic sites where orchards could be expected. This list was complimented by additions gleaned anecdotally from local people and people with a professional, academic or personal connection. Various editions of Ordnance Survey and other maps were also consulted.

The 2001 Edition of the 1:25,000 OS Explorer map No. 380 'Dundee & Sidlaw Hills' was used as a working map. Prospective locations were marked on the map. Where detailed historical map data was available, the extent of historical orchards was delineated.

A day was allocated to tour the whole of the Carse in order to familiarise with the wider location, and thus assist in planning the subsequent survey.

The survey was itself was conducted over seven days between 21st August 2007 and 6th September 2007.

There have been various additions to the survey made during a visit to the Carse to meet the press on 11th September 2007, and through telephone conversations with orchard keepers.

3.1 Verification Aspect of Survey

Part of the purpose of the survey was to physically verify the existence of the orchards. In this respect, it was equally important to verify that an orchard had been completely removed as that it remained intact. Thus visits to sites where orchards were believed to no longer exist, were scheduled along with those that were understood to remain. At sites where the orchard no longer remained, a brief search was made for odd remnant trees which often proved fruitful. Anecdotal data as to how and when an orchard disappeared was also recorded.

3.2 Data Collection

A wide variety of data was collected. In addition to photographic records which are discussed below, a small database was used record information collected. Several categories of data contribute to each record of an orchard:

- Contact data for orchard keeper
- Keeper use and knowledge of orchard
- Size & location
- Survey management data

- Biodiversity criteria, including condition of trees
- Historical notes
- Survey notes including anecdotal material from keeper and others

The biodiversity criteria recommended by PTES were used in a modified format for this survey. ¹¹

The fields of the database, that is to say the individual pieces of data that stored for each orchard record, are shown in Appendix B. The software used for the database is FileMaker Pro v7, which is a versatile cross-platform application¹². It can export data in a number of formats including XML. An anonymised example of a record for one orchard is shown in the figure below.

Figure 2: Screenshot of Database Location Form

The screenshot shows a FileMaker Pro v7 database form titled 'Carse Orchards 2007'. The form is divided into several sections:

- Home / Open Trees for this Location / Summary Window:** Navigation tabs at the top.
- Location Information:** Location ID (LOC), Location type (agricultural field), Record first created (24/02/07), and Last modified (15/02/07).
- Keeper Information:** Name of keeper, Location address, Location postcode, Keeper since (1946), Keeper address, and Keeper postcode.
- Orchard Characteristics:** Orchard size (ha) (-5), Orchard age (yrs) (-100), No. of trees (-40), Current use of orchard (mixed grazing), Accessibility (good, limited, no access), Orchard status (good remnants), and various tree species (apple, pear, plum) with 'yes/no/maybe' options.
- Historical Notes:** A text area containing a note: 'Spoke to [redacted] on 31st August 2007. He showed the old ash prospectus from 1919 when the Castle Huntly Estate was broken up. Copies attached.'
- Survey Notes and Comments:** A text area containing notes: 'grid ref corner of garden of house Orchard Gate at bottom of road', 'Mainly large old pears', 'Grazed by cattle, calves and a couple of horses.', and 'grandfather bought farm in 1946. Monocrop pears south east of orchard. Local people use fruit, and he is happy about that.'

Form has been anonymised

Data was recorded on site, directly to laptop computer. This was for accuracy, speed and to avoid transcription errors.

¹¹ PTES is a London based NGO that has been working on traditional orchards in the south of England. www.ptes.org

¹² www.filemaker.com

The database was designed and intended as a foundation and ongoing, evolving resource. As such it constitutes a major output from this initial phase of the project to secure the future of the Carse Orchards.

3.1 Photographic Records

Photographic records constituted an important method of recording orchard condition and extent. In some cases they also assisted in recording location. As such they are one of the cornerstones of this survey.

Digital still photos formed the basis of the photographic record. These images are 3.2 Mega pixel, a resolution with good detail which are suitable for screen and print reproduction. They are stored as jpeg files. In addition there are a number of digital stills produced via photographic slide film. These are a similar resolution and file type.

Digital video was resource that was made available on the survey to record people and their anecdotes, in particular those that relate to memories of former orchards. It was anticipated that its use may be limited, but useful in certain locations. Video material is stored in mpeg file format.

Most locations have a number of images that help to build a picture – a historical snapshot – of the orchards as they existed in late summer 2007.

3.2 Location Information

A handheld GPS unit (Garmin GPS 72) was used to record the grid reference of locations. The unit was set up to give a 10 digit reference in British National Grid format – thus providing an apparent resolution to the nearest metre. However, GPS systems in the UK do not have a generally available ground station calibration (such as WAAS in USA), and nor was a specialist differential system employed. Thus accuracy is stated to be within 15 metres. Consequently in most cases, the data recorded has been rounded to a realistic 8 digit reference.

A conventional 6 digit grid reference, read off the OS Explorer map has been used as a backup, and for locations where it was not possible to use the GPS unit. This provided the location to the nearest 100 metres.

It was anticipated that this and other data could be exported to a GIS application in the future.

The use of GPS to map the boundaries of orchards was considered. It was concluded that the limitation in accuracy of GPS meant that it is not a useful tool for these fairly small areas.

3.3 Data Protection

A cautious approach has been taken in regard to data protection requirements. Firstly the data is stored as a computer record. Secondly, the data contained information that may be considered of a personal nature and is associated with person's name. Therefore, permission was sought from those on the database, and they were asked to sign a form showing their consent. There were some exceptions, most commonly when the person was not available to sign the form – and their name had been given by a third party, such as a neighbour. The original signed data protection form is held by the client.

The data protection form does not constitute permission from individuals for their details to be passed to third parties or for their names and personal data to be published. Additional permission would need to be sought for this. It is therefore intended that any publication of orchard records be in an anonymised form.

Ongoing data protection is the responsibility of the client.

4 Survey Findings

Over 50 sites were visited and individually recorded during the course of the survey. The findings presented below summarise the data collected. For full details of individual orchards the database should be consulted.

The location of orchards by map grid references is given in Appendix B: Grid References of Orchards.

4.1 Historic Orchards Where No Significant Remains Exist

The following orchards were verified to no longer exist to any significant extent. In several cases their final demise was relatively recently.

Table 2: Historic Orchards Verified to No Longer Exist

Historic Orchard	Parish/Area	Assessed by	Last existed	How lost	Comments
Annat Cottage	Rait	visit	1970s	Old age	now garden
Balgay	Inchture	visit	1980s	Cleared	for agriculture
Benvie		visit			now agriculture
Castle Huntly		visit			now pasture
Errol Village	Errol				now built on ?
Glencarse House		visit			now pasture/ woodland
Glendoick		visit			now woodland/ horticulture
Gourdiehill		visit	1989	Cleared	for a housing estate
Hill (Errol Parish)	Errol	verbal			
Horn	Inchmichael	visit	1970s	Cleared	for farm buildings & agric.
Kilspindie		visit			now garden
Kinfauns Castle		visit	1974	A90 road	Home Farm Orchard below Castle
Mains of Kinnaird		visit			now pasture
Midleys	Grange				now part of Errol Airfield Industrial site?
Murie	Errol	verbal			
New Farm (Errol)		verbal			
Onthank	Inchture				now Broomhall feed mill ?
Overyards	Longforgan	visit			now garden
Pitfour	St Madoes	visit	1969	Cleared	for agriculture
Powgavie	Grange	visit	1990s	Old age	now pasture
Rait		visit			now pasture/ housing
Rawes	Longforgan	visit	~1990	Old age	now pasture
Rossie Priory		visit			now pasture
Seasides		visit	~1985		now pasture
Seggieden		visit			now pasture
Shipbriggs	Megginch	visit			now woodland
Waterybutts	Grange	visit			now pasture/railway

Of the list above it is perhaps worth describing a few. Further details can be found on the database.

Gourdiehill

Patrick Matthew's famous orchard was once the largest orchard in Scotland, reputed to have 10,000 trees on its 35 acres. It was planted by Matthews in the mid 19th Century. In about 1860 two of Matthew's sons emigrated to New Zealand. There, they set up the first commercial orchard in the Antipodes with seed and trees from Gourdiehill¹³

The site of the former orchard is now devoid of fruit trees. A large part of this is now arable, but the eastern end of the orchard was cleared to build houses, as described in the survey notes:

A Plant Contractor from Blairgowrie said that he had been contracted in 1989 by a developer to clear the orchard in order for the housing estate to be built. He also demolished the big house at Gourdiehill (it had suffered a serious fire many years before). He said they left what trees they could.

When the site was visited during the survey it was not easy to find any fruit trees. A resident assisted in locating the solitary veteran tree – a pear - that remained. It had a hard fruit, not very pleasant to eat. There had also been another very large old pear but it was felled last year on safety grounds because it was leaning.

Horn

The orchard was at Horn Farm. Notes from the survey:

Formerly L-shaped orchard to north and east of steading. Probably about 5 acres. Orchard had been encroached on by expanding farm buildings.

In 1957 when the current owner first came to farm, Lindsay the Ironmonger in Perth bought the fruit each year. He would come and pick in 3 sessions. Then in early 60's they went to Smith, a Dundee fruit merchant. EC legislation finally did for them because they were not sufficiently regularly shaped and sized. As a result the market for the fruit died, as did Dundee Fruit Market which used to be down by the docks.



The last of ten thousand: a pear



Part of Gourdiehill orchard site cleared for housing in 1989



Looking down across former orchard site, partly lost to expansion of farm buildings

13 Dempster, WJ (1983), *Patrick Matthew and Natural Selection*, (Perth Library edn., Edinburgh: Paul Harris Publishing).



Western part of orchard now paddock and A90 (above). To the east end the last remnant - an apple by the railway (below)



Some pears were picked hard, and then stored in hay. They had ripened when they came out but had to be careful and experienced otherwise they were mush. Orchard finally cleared in 1970s for arable and further buildings expansion.

Kinfauns Castle

This orchard was below the 'Castle and to the south and west of Home Farm. It stretched down to the Tay. A slim riparian slice was removed from it when the railway came, but the construction of the A90 road in 1974 really destroyed the orchard. The area that was orchard is now road, road junction and a small triangular field that is in pasture.

Notes from the survey:

A local resident who has lived there all his life and can well remember the orchard, walked over the site explaining where it used to be.

There had been until recently 3 old apples remaining between A90 and railway at east end, near the level crossing. Within last year railway contractors had cleared an area there to use as a yard and have demolished all but one tree - which has suffered damage from the machines. However this solitary apple is still bearing fruit. Badly shaded by willows.

Rawes

The orchard at Rawes no longer exists but the memories are still clear. Notes from the survey:

The landowner said his family was 5th generation at Rawes Farm. Prior to 1919 they had farmed at a neighbouring farm further west from Rawes. There used to be apples, pears and plums at Rawes. They were all old trees and were in the small field to the east of the house. Around 20 trees were there, though they had all been lost from old age about 15 - 20 yrs ago. He said his grandfather had told him that the whole field to the north east of the house, right up to the road used to be plums.



A plum orchard formerly occupied the whole of the field across to steading.

Pitfour

The history of Pitfour Orchard was brought vividly to life by the family that used to live and work in the orchard until they sold the land in 1968. The survey notes:

Orchard used to be part Pitfour Castle estate. The correspondent's father rented the orchard but then bought it in 1920's. It was 10 acres of apples, pears, plums. Bramley's handpicked and would store until May. Sold in Perth. Worcester Pearmain, Kilwinning Pear, Victoria Pear were main table varieties.

They also grew strawberries and saltgrass, and did some salmon fishing. Bought Upper Mains of Pitfour in 1949 after renting from 1943. Before that they lived in a wooden house in the orchard which they build in 1923. There was a well in the orchard. Grazed cattle in orchard.

Sold orchard to Nethermains of Pitfour in November 1968. Shortly after the sale, the orchard was cleared for agriculture.

A short interview with the correspondent was recorded on video, whilst over looking the former site of Pitfour Orchard.



Pitfour in 1960 above; below the former keeper explains where the orchard was when her family had it.



Aerial view (1994) with farm layout prior to 1968 overlaid. Pitfour orchard was at top of frame.



4.2 The Existing Smaller Orchards

The historic orchards that still exist have been divided into two categories by area; Large orchards are those considered to be on an agricultural scale, that is they occupy a whole field. They would have been created as a commercial venture. Small orchards occupy a lesser area, which may be the corner of a field, a walled or private garden. Small orchards may have partly commercial but it is likely that their size and proximity to the steading meant a key function was supplying the owner's table.

The smaller orchards that were surveyed are shown in the Table below.

Table 3: The Remaining Smaller Historic Orchards of Carse of Gowrie

Orchard	Parish/Area	Assessed by	Condition
Wester Ballindean		visit	abandoned but fair
Carse Grange		visit	fair/ good
Clashbenny Farm	St Madoes	visit	depleted but remnants good
Inchyra Farm		visit	abandoned but fair
Inchyra House		visit	depleted but remnants good

Brief descriptions of each orchard are given below. Further details can be found on the database.



East orchard: under development in 1996 (above), some trees remain today (below).



Wester Ballindean

Wester Ballindean is an example of an orchard that has been subject to severe housing pressure. The orchard is divided into two parts by a track lined with large poplars. The larger western part is now in the corner of a large field and is a little more than a hectare in size. The eastern part is now substantially lost to housing. Some trees remain in private gardens.

Eastern orchard of Wester Ballindean: In 1996 this was an gappy orchard with a significant number of trees. Local information is that a planning application for a single storey house was granted. Subsequently the planning was amended to two large, two storey villas. The orchard owner (a development company) sold the plots to a builder. Around 15 mature fruit trees remain in the two gardens that comprise the eastern orchard.



West orchard: from the exterior (above) and the abandoned interior (below)



Western orchard of Wester Ballindean: The same orchard owner applied for planning permission to built on this orchard as well. When this was refused, it was taken to appeal. In 1998 the appeal was dismissed and planning permission refused¹⁴. However the refusal appears to have been primarily on the grounds of not extending the village envelope rather than any presumption of the intrinsic value of historic orchards. This orchard is still under pressure for housing.

¹⁴ The reporter also commented on the condition of the eastern orchard after its development: “. . . This view is reinforced by your claim that the orchard setting of the eastern orchard has been retained whereas I find only vestiges of an orchard remain there on a site dominated by 2 suburban style villas.”

The western orchard has been largely abandoned, and is now somewhat overgrown. The 50 or so apple, pear and plum trees are still prolific fruiterers, and there are relatively few gaps. These factors contribute to making this orchard one of the 'hidden gems' of the Carse.

Carse Grange

Carse Grange orchard is located on the north of the Errol road in Grange. Immediately to the south of the road is another larger orchard known as Grange.

[pic map of area]

Carse Grange orchard was originally part of the eponymous farm on the road that leaves the village to the north heading for Inchmichael. Like several other orchards, Carse Grange was bisected by the new railway in the 1850s. As a result the orchard is now in three parts. To the north of the railway in a triangular field only 3 aged trees remain; an apple and two pears. The orchard to the south of the railway is divided into two private gardens of 'The Retreat' and 'Orchards of Carse Grange'.

Survey notes from a visit to 'The Retreat':

Planted hedge and trees (eg. birch) around orchard and garden in early 1990s. Has kept wind out and benefited the veteran trees in this orchard. Fruit still a good size.

Around 20 veteran trees, some falling over but still fruiting well.

Pears: Christie, Craig, and possibly Rattray, Hazel, Maggie Duncan

Apples. some new trees that gap fill have been created from grafts of old trees - Codlings. Other varieties Lass of Gowrie (new tree) and Arbroath Oslin

Old varieties of apples and pear that are unsuitable for the table are used for juicing and then freezing.

The Retreat has some of the best examples of veteran trees that remain in the Carse on a garden scale.

Survey notes from 'Orchards of Carse Grange':

Abuts western side of 'The Retreat' garden

All trees planted after previous owner moved there in 1925. They ran it as a small holding for top fruit and soft fruit. They sold fruit from a cart in Dundee in the 1930s

Mainly mature apple and plum trees remain.



Much of Carse Grange Orchards now in the garden of The Retreat, and are in good condition



The trees at Orchards of Carse Grange are also in good condition. These trees were planted in 1920s.



Clashbenny



3 rows of apples remain at Clashbenny

At Clashbenny Farmhouse there remains a small orchard just to the south of the formal garden. It amounts to three rows of large mature apple trees. Survey notes:

Approx 20 old trees mainly apple, 2 damson

Orchard probably used to be larger, and extend further west. No only 3 rows remain.

Clashbenny is part of Errol Estate. The landlord took property back from tenant in 2001. Orchard had been ignored and poor shape. Heavy pruning in 2001 (almost pollarded) for all but one apple. Left one apple for comparison. That one still producing a lot of fruit! Orchard is very exposed with no shelter to east or west.

New planting filling gaps with pears.

Inchyra House



Old trees against wall on outside walled garden at Inchyra House

The orchard at Inchyra House is located at its walled garden, several hundred metres to the west of the House. Approximately 40 mature fruit trees feature both on the inside and outside of the wall. Twisted old plums are a feature outside the wall.

Survey notes:

Walled garden made semi-formal in 1950s. Old plum and pear trees espaliers, fan trained. Apples half standards. Apples appear to be oldest element. Nothing more than 100 yrs old.

Inchyra Farm



Orchard remains inside small old walled garden at Inchyra Farm. The orchard formerly covered the field in the foreground.

A small walled orchard remains at Inchyra Farm, on a scale suitable for household use. It is in an unkempt condition but features around 20 large and interesting old veteran apples and plum trees.

Notes from the survey:

Years ago it is reputed that orchard used to cover the whole field up to railway and over to the house but no sign of that in 1964 when the current tenant took the property.

Current orchard is half of old kitchen garden. Mainly big old apple trees - eaters and cookers. Grown very tall. Some plums over by west wall but that area being rather taken over by damsons - perhaps rootstock volunteers.

As no other historic orchard appears to be in the area, it may be that Inchyra Orchard was originally located on a larger scale in the field behind the Inchyra Farmhouse.

Newton of Glencarse

Details of the precise location of this orchard are unclear. It appears that the old orchard behind the Public House in Glencarse is the likely remnant. There are several trees at the back of the pub car park and a larger group in the garden of the bungalow behind the pub. The owner of the bungalow used to own the pub – and this perhaps accounts for the divide in the orchard. The trees appear to be less than 100 years old, so this orchard is of little veteran tree value.

4.3 The Existing Large Orchards

The large orchards that remain in the Carse are shown in the table below:

Table 4: The Remaining Larger Historic Orchards of Carse of Gowrie

Orchard	Parish/Area	Assessed by	Condition
Bogmiln	Grange	visit	odd remnants
Craigdallie	Kinnaird	visit	damson thicket
Fingask		visit	depleted but new plantings
Flatfield		visit	depleted but remnants good
Friaton/ Barnhill Toll		visit	depleted but remnants good
Megginch		visit	a large number of good trees
Muirhouses	Grange	visit	still a few good remnants
Newbigging		visit	depleted but remnants good
Port Allen		visit	a large number of good trees
Templehall/ Monorgan		visit	depleted but remnants good

Brief descriptions of each orchard are given below. Further details can be found on the database.

Bogmiln

The orchard now has merely a few odd remnants spread the length of the field. The field is used for grazing cattle.

Survey notes:

Field with just 6 big old pear trees in it, and 5 plums that border the farmhouse garden. Lovely old remnants.

General depletion by windblow according to owner.

Don't use fruit.

Owner stated that not really interested in doing much with orchard.



The few remnants looking from the south of the orchard at Bogmiln

Craigdallie

According to local information, the orchard ran along the bank above the houses at Craigdallie.

Notes from the survey:

Orchard is said by local correspondent to be all gone now, rotted and fallen down. The land is thought to be owned along with Craigdallie Cottage. The owner apparently lives in Longforgan.

A lot of damson (rootstock volunteers?) have grown into quite a thicket. There are also a lot of sycamores. Apart from that no sign of any remnant fruit trees at western end, though didn't battle along to eastern end.

Craigdallie Farmhouse a few hundred metres to the west, still has some big old orchard trees behind the house.

Fingask

Fingask orchard represents a rare piece of heritage. It has been in the ownership of the same family for just over 400 years. The orchard has remnants of a large collection of trees, but new trees have been planted meaning that this orchard should endure.

Notes from the survey:

Lots of good old trees although they are getting near the end of their life. Around 30 remain. Mainly pears and a few apples. Orchard set in long gully with steep sides at it's head. Around 400m long and amounting to 2 – 3ha.

Some of orchard area (and probably some old trees) have been lost by the recent creation of a lochan at the southern part.

Some recent replanting, around 70 trees - apples, modern varieties mainly at south east. Also some oaks and a hedge in the last couple of years.

Good set of Estate papers about Fingask in Bell Library, Perth.

Butlers daybook 1850-6 copy are available at £5 from Fingask - included details of routing of orchard.

Don't use much fruit because pears are sour. Pheasants love pears.



Flatfield still contains a good number of productive trees

Flatfield

Flatfield has a charming old orchard with around 40 veteran apple and pear trees. The owners are enthusiastic about the future of the orchard, and enjoy the fruit from it.

Survey notes:

Owner's family has had the property since 1825. House built in 1785.

Orchard split both sides of drive.

West side is main orchard is 1 ha in extent - grazed by horses, and also sheep. IACS registered but no grants sought.

East side of road is pet cemetery (mown) and has ~5 old trees in it. These are still used though.

Friaton/ Barnhill Toll

The history of this orchard is unclear at the moment, though it appears it may have been known as 'West Oaks'. It is bisected by the railway. The riverside portion of the orchard is 'marooned' between the railway and river.

Survey notes:

Main orchard remnant on west side (other side) of railway. Trees on east side of railway much more sparse.

About 25 veteran trees, mainly pears, some damsons.

Neighbouring riparian land to east is pasture. digger and dozer parked there - perhaps to make up flood banks. no flood banks in orchard so perhaps liable to flood.

Barnhill Bar - toll house at south-eastern corner of site.

This old orchard seems to have survived thanks to poor access and perhaps flood risk. The railway underbridge was filled in by Network Rail in 2006. The land to the north up river also used to be orchard, and is now housing.

Grange

Grange is one of the major orchards remaining on the Carse. It is also perhaps one of the best known major remnants being in clear view of the road. Around 40 veteran trees remain in this orchard of approximately 4 ha. The orchard is usually grazed by sheep.

Survey notes:

Owner's father and grandfather had this property since 1925.

Fruit hasn't been sold for a very long time.

Apple trees lost by cattle removing bark. Owner said that old varieties had been collected by Mylnefield SCRI before this



The orchard at Barnhill Toll mainly survives on the strip between the railway and the River Tay.



Grange is large and nowadays open



and now they reside at Brogdale¹⁵.

Loss of fruit trees ongoing. Last winter 7 trees lost in gales. Also fruit seems to be getting smaller. Owner is 'not optimistic about the future of the orchard.'

Bottom of orchard reputed to be haunted by monks. The site of a chapel was thought to exist somewhere in the orchard.

Steel bands around trees put around by local blacksmith for owner's grandfather.

To east of orchard was a smiddy, and brewery.

Megginch



The entrance above the walled gardens (above), significant numbers of trees still exist (below)



Megginch has probably the most intact large orchard remaining on the Carse. It is well sheltered and still has approximately 100 veteran apples, pears, plums, damsons, greengages, medlars and cherries. A small number of the trees are in the two walled gardens – espaliered or fan trained. Some of these are thought to have been planted in 1820. The majority are in the main orchard, which is an L shaped field to the north and east of the walled garden.

Survey notes:

Megginch - beautiful isle. It is on an area of ground rising to 15m above river.

According to legend the site of a monastery. The present owners family has had the property since 1661.

Field orchard mainly pears and plums. Walled garden mix with more apples.

A lot of fallen trees recently cleared up into large heap.

Traditionally a basket of plums was sent the Queen each year from the orchard.

Mains of Megginch which is neighbouring to the east, also used to have an orchard in the field north of the house. Pulled out in 1980s.

Muirhouses



Muirhouses is a farm on the eastern edge of Errol airfield. The field to the north and east of the steading contains around 20 veteran trees – mainly pear and some plum. There is a gradual erosion of the orchard stock by windblow – the location is exposed to both

¹⁵ Most of SCRI collection dispersed and not held at Brogdale. See Other Orchards section.

east and west. Summer gales also take their toll. One veteran tree had been broken by the wind in early August. The hollowed trunk had failed at chest height, a couple of weeks before the survey took place.

Notes from the survey:

Steading built in 1834. Owner's family originally bought the farm in around 1920. House and farm taken over in WW2 as part of Errol airfield. The house was an officers mess. Owner's family bought farm back in 1964.

Plums and apples trees in front of house in garden. Also old and of veteran tree interest.

Orchard is pasture.



Muirhouses veteran

Newbigging

Newbigging is one of the smaller of large orchards, but it is of particular interest because it abuts the northern boundary of the former Gourdiehill orchard. The orchard ground is divided by Grange Pow and it is likely that the small field to the south of the Pow was part of Gourdiehill prior to the coming of the railway, which severed that connection.

Survey notes:

Orchard fields let out to neighbour for horses.

15 old pears, a couple of apple and plums. All veteran. Trees mainly to north of Grange Pow, but two on southern bank. None in field to south of pow and north of railway.

Owner says pears not good to eat.



Large trees remain at Newbigging towards the doocot (above) and the odd remnant survives on the south side of Grange Pow (below)



Clear lines of trees still exist at Port Allen (below)

Port Allen

Port Allen, also historically known as Pow of Errol, has one of the finest remaining orchards on the Carse. It is large in area and still has approximately 80 veteran trees, including apples, pear and plum. Fruit on many of these trees is still of a good quality.

The orchard formerly straddled a large burn, extending further west. The orchard smaller area was to the west of the burn and the larger area to the east. The area west of the burn is now devoid of trees and is pasture. A few remnants grow on the steep bank





Port Allen Orchard used to extent into field the far side fo the burn

down to the burn at the field margin. The orchard in the east area remains in good stead.

Survey notes:

The orchard is part of Errol Estate, and is tenanted.

Keeper said that orchard mentioned in historical documents in 1662, in connection with commissioning of new horse mill at Port Allen.

This orchard abandoned for around 35 years until recently, though a lot of local people still came and picked fruit from it up to the present day.

Current tenant highly enthusiastic and plans to replant significant part of orchard.

Plans to make jam, sell fruit. More out of curiosity than purely commercial venture.

Templehall/Monorgan



West orchard is now rather open, but contains some lovely specimens

The orchards at Templehall near Monorgan, have variously been known as Templehall or Monorgan in the historical record. It appears that the name may be used interchangeably. The place is reputed to have a long history associated with a rest place for monks on their passage to the river.

The orchards were formerly part of the Castle Huntly Estate that was broken up and sold off in 1919. Until recently the orchards both sides of the road were part of Monorgan Farm, owned by the same family since 1946. Two years ago the orchard on the west side of the road was sold to a neighbouring landowner. The new owner has cleared many of the frailer trees after consulting the Council's Planning Dept, leaving the structurally sounder specimens.



Western orchard of Templehall/ Monorgan: This part of the orchard is split into two fields. The southern field (2ha) has not had any trees for many decades. The northern field (3.5 ha) had numerous trees, many of which have been removed, as described above. There remain 3 veteran pears spread over the field and a cluster of 10 or so apple trees beside the road.

Survey notes for western orchard:

This orchard used to be known as Geekies. Mr Geekie used to have this 'orchard' as a smallholding. The southern part of the historical orchard was used to grow veg and may have been cleared by him in 1940s.

Eastern orchard of Templehall/ Monorgan: This part of the orchard is some 5.5 ha in extent. It has around 40 veteran trees, now thinly spread across it. These are mainly pears and some plums. This eastern orchard is still one of the finest orchards of Carse.

Survey notes for the eastern orchard:

Pasture leased, grazed by cattle, calves and a couple of horses.

Monorgan pears are in south east of orchard

Local people use fruit, and owner is happy about that.

Owner has no objections to journalists being invited (eg. Dundee Courier) to a wee photo shoot in the orchard to publicise this survey work.



East orchard at Monorgan still has a good number of trees and is a lovely scene



4.4 Other Orchards

Two other orchards that are not historic in nature should be mentioned in connection with this work.

Mylnefield Research Station, Invergowrie

Scottish Crop Research Institute and its antecedent organisations had a large top fruit collection at Mylnefield. This was run by their Dept of Pomology. According to former employees:

- 900 varieties of top fruit were in collection
- An Arbroath Oslin apple tree planted at the opening of Mylnefield Research Station.
- Main work with top fruit was elimination trials on imported Scandinavian & Canadian varieties.
- Some pear varieties were collected from the Carse orchards in the 1950s.
- Very little was done to document the orchards of the Carse by SCRI.
- Demise of collection at Mylnefield after Dr Conway Wood from Pomology Dept left to go to SAC Auchincruive in 1960s. A change of policy by the directors meant the collection was no longer to be kept. Apple collection was 'obliterated'. Though some apple scion wood sent to Brogdale, the apple trees themselves were given away or destroyed. Some apples trees are reputed to have been taken to Burnside of Monorgan. The pear collection was moved to Threave National Trust College of Horticulture, at Castle Douglas.
- Few of the pear trees remain at Threave today.

Orchard at Wayside, Longforgan



New plantings of old pear varieties on a small rootstock at Wayside



This new orchard is located in the field to the south of Wayside in Castle Road, Longforgan. It consists of a new plantings of pear varieties originally from taken from the Carse. As such it seems an important repository of local varieties of pear.

The owner explains the situation as he writes:

“My wife and I went to see the pear trees in Threave, and it seemed to us a good idea to take grafts of these trees and replant them back in the Carse of Gowrie, whence they had come originally, on our piece of land. One problem, however, was that the trees were so old that good material for grafting was scarce or unavailable. However, we were put in touch with a plantsman in Kent, and he agreed to use material from the trees and bring them on by micro propagation in his laboratory. He then established each plant on an appropriate root stock, which he sent to us. The process would take a year.

Over the next few years we managed to get some 40 trees of 20 different varieties through the process. All but one of these are now growing in our orchard.

The varieties involved are: Grey Honey, Chalk, Cuisse Madame, Grey Benvie, Maggie Duncan, Maggie, Comice, Drummond, Seckle, Longueville, Goudie hill, Grey Auchan, Goud Knapp, Green Pear of Yare, Winter Christie, Craig, Hessle, Flower of Monorgan, and Seggieden, I also had a specimen called Galston, but sadly it died. Several of these names have local connections - Monorgan, Seggieden, Knapp, Benvie, even Drummond -, and it could be that these are local names for varieties that exist elsewhere with other names.

Earlier this summer (2007) I visited Threave again, and unfortunately almost all of the pear trees have now died. It seems that we were just in time.”

One regret the owner has is that they were put on a very small ‘Pixie’ rootstock. He said it would have been better if they had been on a larger rootstock.

4.5 Biodiversity Aspects of Orchards

Biodiversity aspects in the context of this survey, really pertain to assessing the suitability of the habitat in terms of allowing a biodiverse ecosystem to exist, rather than any actual measurement of biodiversity. Thus a number of criteria were recorded that relate to:

- the presence of ‘veteran’ trees
- the condition of the trees
- likely niche habitats in the trees
- the vegetation on the orchard floor
- the management of the orchard floor

A summary of biodiversity related information held on the database is shown in the tables below. Only orchards that have been assessed to have a biodiverse habitat have been included.

Table 5: Orchard Use and Status

Location ID	Orchard	Location	Current Use	Status	No. of mature trees	Veteran Trees?	Fallen Deadwood	Cavities
L0030	Bogmiln	Orchard to south of farm	pasture	odd remnants	12	yes	yes	yes
L0018	Carse Grange	The Retreat	garden and orchard	in active use	~20	yes		
L0019	Carse Grange	Orchard of Carse Grange	garden and orchard		~10	yes		yes
L0021	Carse Grange	Carse Grange	grazing	odd remnants	3	yes		yes
L0049	Clashbenny	Clashbenny Farm	active orchard	in active use	~20	yes		yes
L0042	Fingask	Fingask Castle	orchard, pond, rough ground.	gappy	~30	yes	yes	yes
L0038	Flatfield	Flatfield	grazing/pet cemetery	gappy	~40	yes	yes	yes
L0003	Friaton/ Barnhill Toll	Orchard at Barnhill Toll or Friaton	long abandoned	long abandoned	~25	yes	yes	yes
L0020	Grange	Orchard at Grange on southside	partially used orchard	recently abandoned	~40	yes	yes	yes
L0012	Megginch	Megginch Castle	as an orchard	gappy	~100	yes	yes	yes
L0032	Muirhouses	Muirhouses Farm	grazing	odd remnants	~30	yes	yes	yes
L0034	Newbigging	Newbigging Farm	horse grazing	odd remnants	~20	yes	yes	yes
L0005	Newtown of Glencarse	St Magnus	garden	gappy	15	yes		
L0048	Port Allen	Port Allen Orchard	recently been bought into use	gappy	~80	yes	yes	yes
L0016	Templehall/Monorgan	West of road	grass for forage - no fences.	odd remnants	~12	yes		yes
L0017	Templehall/Monorgan	East of road	leased grazing	gappy	~40	yes	yes	yes
L0023	Wester Ballingdean	Casa Gedzi	as fruit trees in garden	odd remnants	~12	yes		
L0024	Wester Ballingdean	Carse View	odd trees in a garden	odd remnants	~3	yes		
L0022	Wester Ballingdean	West orchard at Wester Ballingdean	not used	recently abandoned	~50	yes	yes	yes
L0010		Inchyra Farm	largely abandoned	recently abandoned	~20	yes	yes	yes

The table shows that many orchards have significant numbers of veteran trees, fallen deadwood and trees with cavities. Cumulatively there is significant biodiversity value in these orchards.

Table 6: Orchard Floor Management

Location ID	Orchard	Location	Orchard Floor Management	Grazed by	Orchard Floor Main Species
L0030	Bogmiln	Orchard to south of farm	grazed	cattle	grass
L0018	Carse Grange	The Retreat	mown		grass
L0019	Carse Grange	Orchard of Carse Grange	mown		grass
L0021	Carse Grange	Carse Grange	grazed	horse	grass
L0049	Clashbenny	Clashbenny Farm	mown		grass
L0042	Fingask	Fingask Castle	ungrazed		grass
L0038	Flatfield	Flatfield	grazed	horse	grass
L0003	Friaton/ Barnhill Toll	Orchard at Barnhill Toll or Friaton	ungrazed		willowherb
L0020	Grange	Orchard at Grange on southside of road	grazed	sheep	grass
L0012	Megginch	Megginch Castle	grazed	sheep	grass
L0032	Muirhouses	Muirhouses Farm	grazed	sheep	grass
L0034	Newbigging	Newbigging Farm	grazed	horse	grass
L0005	Newtown of Glencarse	St Magnus	mown		grass
L0048	Port Allen	Port Allen Orchard	mown		grass
L0016	Templehall/Monorgan	West of road	mown		grass
L0017	Templehall/Monorgan	East of road	grazed	cattle	grass
L0023	Wester Ballingdean	Casa Gedzi	lawn		grass
L0024	Wester Ballingdean	Carse View	lawn		grass
L0022	Wester Ballingdean	West orchard at Wester Ballindean	ungrazed		nettles
L0010		Inchyra Farm	ungrazed		brambles

As can be seen from the table, grass is the main species occupying the floor of most orchards. A little under half of the orchards are cut mechanically, and a little under half are grazed. The term mown is used in an agricultural sense, that is the grass has been cut at infrequent intervals for forage or just topped. The grass is therefore up to 0.5m high. The term lawn is used to denote regular cutting by garden machinery, and a short sward results.

Table 7: Veteran Tree Features

Location ID	Orchard	Location	Holes in branches	Crevices in bark	Loose bark	Trunk cavities	Dead wood in canopy	Dead wood on ground	Water pools	Fungal fruiting bodies	Aerial roots	Sap runs
L0030	Bogmiln	Orchard to south of farm	yes	yes	yes	yes	yes					
L0018	Carse Grange	The Retreat	yes	yes	yes	yes	yes					
L0019	Carse Grange	Orchard of Carse Grange	yes	yes	yes	yes		yes				
L0021	Carse Grange	Carse Grange	yes	yes	yes	yes	yes					
L0049	Clashbenny	Clashbenny Farm	yes	yes	yes	yes		yes				
L0042	Fingask	Fingask Castle	yes	yes	yes	yes	yes					
L0038	Flatfield	Flatfield	yes	yes	yes	yes	yes	yes				
L0003	Friaton/ Barnhill Toll	Orchard at Barnhill Toll or Friaton	yes	yes	yes	yes	yes	yes				
L0020	Grange	Orchard at Grange on southside of road	yes	yes	yes	yes	yes					
L0012	Megginch	Megginch Castle	yes	yes	yes	yes	yes	yes				
L0032	Muirhouses	Muirhouses Farm	yes	yes	yes	yes	yes	yes	yes			
L0034	Newbigging	Newbigging Farm	yes	yes	yes	yes						
L0005	Newtown of Glencarse	St Magnus		yes	yes							
L0048	Port Allen	Port Allen Orchard	yes	yes	yes	yes	yes	yes				
L0016	Templehall/Monorgan	West of road	yes	yes	yes	yes	yes					
L0017	Templehall/Monorgan	East of road	yes	yes	yes	yes	yes	yes				
L0023	Wester Ballingdean	Casa Gedzi	yes	yes	yes							
L0024	Wester Ballingdean	Carse View	yes	yes	yes							
L0022	Wester Ballingdean	West orchard at Wester Ballindean	yes	yes	yes	yes	yes	yes				
L0010		Inchyra Farm	yes	yes	yes	yes	yes					

The table shows that the veteran trees in most orchards have multiple features of biodiversity interest.

4.6 Other Observations

A number of observations made during the course of the survey are recorded here. They may contribute to the ongoing project or be of a wider use to the client.

Orchard Management Advice

There has been a clear demand from keepers of orchards, many of whom are enthusiastic about their long term security, for advice on how to manage their orchards. Simple questions such as 'Should I prune these old trees?', 'Should I remove the deadwood?' and 'What can I do about too many small fruit?'

Varietal Knowledge

There appears to be a further area of knowledge deficit amongst keepers of orchards, that is not so directly identified by them. That is what to do with different varieties. In particular the characteristics of the fruit of different varieties. Most keepers and the wider population are unaware the breadth of these characteristics in the older varieties. This seems to be a particular problem with pears, which we associate solely as table fruit, ready to eat directly from the tree. When to pick in terms of ripeness, how long to store, and whether it is suitable for the table or only for cooking are key aspects. The loss of this knowledge appears to lead to most pears on the Carse being unused and just falling to 'waste'. This loss of utility undoubtedly undermines the value of the orchards and their long term security.

Access to the River Tay

Having studied various contemporary and historical maps in preparation for this survey and then having visited much of the Carse during the survey, it has become clear that many ancient rights of way to the Tay are being compromised. That wheeled access to the river is now controlled or prevented is not the main concern. The key issue is that a number of well-established and ancient routes used as footpaths and bridleways for a very long time are now blocked, often being incorporated into gardens accompanied by locked gates. The loss of this ancient access to the River Tay is not helping the public engage with the natural environment.

5 Discussion

5.1 Analysis of Reasons for Orchard Loss

That the list in Table 2: Historic Orchards Verified to No Longer Exist is the longest in the results chapter is an indication of the orchards that have already gone. The majority of the historic orchards entirely cease to exist. Compiling the data and talking to the people on the ground it seems clear that there are a handful of themes that have led to these orchards disappearing. Three key reasons are evident:

- agricultural pressure
- benign neglect and old age
- housing pressure

Clearance for Agriculture

Clearance for agriculture arises from several sources:

- a). Economic pressure -the orchards are not an obvious economic proposition in their current form;
- b). Grants, incentives and advice to clear orchards from government and quasi-government organisations such as agricultural extension services and research stations for the past 50 years;
- c). Tidying up what has become a scruffy part of the farm, often near the main house. Maintenance is not quick or easy with modern machinery but clearance is.

A felling licence from the Forestry Commission is normally needed in order to fell a significant number of trees amounting to more than 5m³ of timber. However, this is not required for orchards¹⁶. So they enjoy little protection in this respect.

For landowners that are minded to, it is easy to establish a felling rationale on grounds of safety with the cooperation of their insurance provider. In one example on the Carse, thirty trees have been removed from one orchard in the last two years on grounds of safety – only a dozen remain.

Benign Neglect and Old Age

The loss of orchards through benign neglect and old age is a major reason for their disappearance. Individual trees obviously have a

¹⁶ MacLean (2007) Personal communication by email

finite life. Windblow appears to be a significant factor in finishing off large old trees. Most keepers report the loss of several trees every year. [footnote: Conversation with Alison Lean, Brogdale Trust: Pear trees have the longest lives and it is thought that it is relatively common for mature specimens to be 200 years old. Apple and plum are shorter lived. This explains the preponderance of pear trees versus apple trees in many orchards.] However, if the orchard as an entity is to endure, then new trees must be planted when old trees are lost. New plantings are rare in the traditional orchards of the Carse [footnote: Fingask being a notable recent exception] and self seeding also appears rare with the exception of damsons and rootstocks. Therefore it is inevitable that benign neglect eventually leads to total loss of the orchard.

Housing

Finally housing pressure is significant and may well be the key factor for many of the remaining orchards. Planning gain is obviously highly lucrative and the demand for houses is great in the Carse. This coupled with the typically scruffy, unkempt appearance of neglected orchards can lead to the assumption that they are 'wasteland'. Thus the apparent lack of use of the land can make neglected orchards appear ripe for development. Orchards are not currently considered as part of our heritage in planning terms [footnote: telephone conversation with Perth and Kinross Heritage Trust] and there is currently no presumption for their preservation.

5.2 Proposals for Heritage Orchards.

While the loss of any of the remaining historic orchards would be regrettable, it may be worthwhile to determine the 'gems' of the Carse of Gowrie. This will enable the better focussing of attention, awareness-raising and perhaps even funding. The tables below categorises orchards by the data collected and the historical record. This survey has not recorded individual trees or varieties. Therefore, the suggested categorisation given below has not taken varieties into account. Identification of varieties will no doubt be the subject of further work, and the likely outcome will be to move an orchard up the category list rather than down it.

Table 8: The Orchard Gems of the Carse of Gowrie

Location ID	Orchard	Location
L0018	Carse Grange	The Retreat
L0042	Fingask	Fingask Castle
L0038	Flatfield	Flatfield
L0003	Friaton/ Barnhill Toll	Orchard at Barnhill Toll or Friaton
L0020	Grange	Orchard at Grange on southside of road.
L0012	Megginch	Megginch Castle
L0048	Port Allen	Port Allen Orchard
L0017	Templehall/Monorgan	East of road
L0022	Wester Ballingdean	West orchard at Wester Ballindean

These nine orchards are the premier league of what remains on the Carse. Most but not all, are field scale orchards with considerable numbers of good trees in them. These orchards should be considered the highest priority in terms of implementing a strategy to ensure their long term survival.

Table 9: Historic Orchards That Are Considerably Diminished

Location ID	Orchard	Location
L0030	Bogmiln	Orchard to south of farm
L0032	Muirhouses	Muirhouses Farm
L0034	Newbigging	Newbigging Farm
L0016	Templehall/Monorgan	West of road
L0010		Inchyra Farm

This group represents a second tier of heritage orchards. They are not in the premier league mainly because of their depleted numbers of trees. They are still of interest and potentially could be revitalised, though the task would be larger.

Table 10: Surveyed Orchards of Lesser Heritage Value

Location ID	Orchard	Location
L0021	Carse Grange	Carse Grange north of railway
L0049	Clashbenny	Clashbenny Farm
L0023	Wester Ballingdean	Casa Gedzi

These three orchards are now relatively depleted from their former status, but still contain some interesting and historic remnants.

No other orchards in the survey were deemed to be of sufficient value to be included in this section.

5.3 Questions of Commercial Viability

A study of the commercial viability of orchards is outwith the remit of this study. It is however perhaps worth considering a handful of the issues that may affect the future viability of these orchards.

Variability of Yield

The historical record [footnote: such as the First and Second Statistical Account] shows that the yield from orchards on the Carse were highly variable. In some years there was a glut and others hardly any fruit at all. It was the practice that rent for a tenanted orchard would only be agreed at the time of harvest because of this variability. The fruit was auctioned on the trees and this was known the roup. This variability is inevitably detracts from the case for commercial production.

Harvesting Fruit: The Mechanisation Issue

To many, the flail hedge trimmer was the saviour of the hedge. It's invention meant hedges could be maintained quickly and cheaply. That was not the case with orchards. Apples and pears, let alone plums, cannot be mechanically harvested from old trees. This has no doubt been to the detriment of pome fruit production on the Carse, and hence to the survival of orchards.

However there is a solution and the precedent is seen widely on the Carse. The growth of soft fruit production in the east of Scotland has largely been enabled by the availability of a migrant labour force willing to engage in manual work. It could be that the expertise of recruiting, organising and managing this sort of operation could be directed towards orchards. Indeed some of the orchard's owners already have soft fruit production on their land. Perhaps the idea just needs to be sown.

Peak Oil and Food Miles

Cheap oil enables complex and lengthy food distribution systems to exist. For many years the 'green movement' has made the case for reducing food miles. This case has been made on environmental grounds. It has been partially successful. However Peak Oil¹⁷ is

¹⁷ Peak Oil is the point or time at which the maximum global petroleum production rate is reached. After this time, the rate of production will enter terminal decline. There is general consensus that we will arrive at Peak Oil soon, some analysts predict it will be reached by 2010

different. It is not an environmental argument, when it happens it will be an economic fact.

Shipping perishable goods around the world, or even across Europe will become increasingly expensive. Sourcing apples from New Zealand (an industry started by the family of Patrick Matthew of Gourdiehill) may become unfeasible. Perhaps the time for commercial orchards to return to Scotland is about to come.

5.4 The Role of Food Culture in Orchard Security

This report has shown that orchards have been in decline for nearly a century. The most severe decline has been over the last five decades as agriculture intensified and mechanised. Coupled with this, EC legislation (or more accurately our interpretation of it) appears to have made an impact on the market for fruit from the Carse. But perhaps the most significant factor in the decline of the use of local fruit is the change in food consumption patterns and the rise of the supermarkets since the 1960s.

It is outwith the remit of this report to analyse the food economy in this respect in any detail. However, we are clearly at a turning point in attitudes to food, and there is a lot of evidence that we are currently enjoying an overdue renaissance in food culture. Local food plays an important part in that renaissance. So does diversity and variety.

In recent years the growth of Farmers Markets and the Slow Food movement¹⁸ have been manifestations of this cultural change. Within this context, the orchards of the Carse have a great opportunity, starting as a niche product to again become well known and valued purveyors of fruit.

18 for example Citta Slow www.cittaslow.net



photo Shiela Warn

Pitfour Orchard in 1940s

6 Conclusions

The following conclusions are drawn from this piece of work:

Orchard Status

- This survey was timely. Most of the orchards of the Carse of Gowrie no longer exist. This has been confirmed by site visit.
- The orchards have been in demise for over a century. Clearance of orchards has accelerated over the last 50 years.
- Of those that remain, 17 have some heritage value.
- Of these, 9 orchards are of premier heritage interest.
- Orchards are still under pressure of total or partial destruction.
- Housing development is a major pressure for some orchards because planning gain is so lucrative.
- There is currently no presumption in favour of historic orchards in the planning process.

Fruit

- No orchards are operated commercially.
- In general fruit is not used to a great extent, though in a few orchards it is very actively used.
- Local people still make use of the fruit from abandoned orchards. The orchard's owners are usually content about it.
- Knowledge of varieties and their characteristics such as when to pick and how to store is generally poor. Old varieties of pears have a particular problem in this respect.

Management

- Most orchards have been neglected in terms of their management for at least half a century.
- Neglected orchards often have high biodiversity value.
- Veteran trees in the orchards satisfy multiple criteria of a biodiverse habitat.
- There is a general request for advice on how to management these old trees.
- Most trees in the orchards are very aged. Old pear trees may typically be 200 years old. The ongoing loss of trees indicates that most are near the end of their life.
- New plantings need to be made soon if orchards are to survive in the long term.

7 Recommendations

The following recommendations are made to the client.

1. **Awareness Raising.** Raising the awareness of the value of these orchards in terms of heritage, fruit, potential economic benefits, and biodiversity should be an ongoing theme. This awareness raising work needs to speak to various important communities: the public; professionals such as planners, developers and those involved in built heritage; and owners, landowners and farmers.
2. **Planning.** The remaining orchards – and especially those classified in the ‘premier league’ need to be accorded a status that creates a presumption against planning permission being granted. It is possible that this may be achieved by heritage status such ‘designed landscape’ or by biodiversity status such as UK Biodiversity Action Plan priority habitat
3. **Engagement.** The owner’s of orchards should be engaged with, to explore management options and how they can be supported in maintaining the orchard and augmenting the current stock.
4. **Mode of engagement.** In engaging with owners, a carrot rather than a stick style should be employed. For example tree preservation orders may preserve trees but they will not preserve an orchard in the long term. Therefore, ‘intrusive’ instruments such as TPO should be avoided in all but the most extreme conditions, as they are likely to create a hostile relationship that will be counter-productive to the future of the orchard.
5. **Management Best Practice.** Management best practice needs to be developed and disseminated. Best practice needs to take into account various factors that may be contradictory. For example maximising biodiversity may hinder fruit production. Pollarding or heavy pruning of old trees may prevent windblow but is it appropriate and will the trees tolerate it. Best practice should be part of the engagement process.

6. **Fruit Days.** A series of fruit days should be organised – at which orchards are opened to the public and fruit is for sale or you can pick your own. Two days are the minimum required. A day in late August is needed for plums and then a day in late September or early October for apples and pears.
7. **Blossom Days.** The beautiful spring blossom is another opportunity to raise awareness about orchards
8. **Carse Orchards Organisation.** The creation of an association or forum to foster discussion, share experiences and then go on to potentially develop orchard businesses, should be fostered.
9. **Survey of Varieties.** Further more detailed survey work should be focussed on those remaining orchards with the most heritage value. This should identify individual trees; their variety and condition.
10. **Varietal Security.** Securing the enduring existence of the diversity of varieties and their genetic traits should be a long term priority. A grafting programme should be initiated once varieties have been identified. It is unrealistic to rely on the Brogdale Trust in Kent to be the sole repository for these varieties - especially given the uncertainty over its own long term future. The creation of a nursery in a location that represents the local bio-climatic conditions should be considered.
11. **Economic Opportunities.** A study assessing the economic opportunities for historic orchards should be conducted. This should focus on both the indirect benefits, such tourism that result from increased recognition of the cultural and heritage significance of these orchards; and the direct benefits such as fruit and orchard derived products.

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Appendix A: Fields in Location Database

Field Name	Input
location ID	key
orchard name	text
historic orchard	text
Orchard Existing?	yes, no, partly
first created	date
last modified	date
location type	agricultural field, horticultural, private garden, allotment, school, public space, other
name	text
location add1	text
loc postcode	text
address same	text
name addr1	text
name postcode	text
yrs keeper	text
use fruit	no, some, a lot
loc notes comments	text
data prot sign	yes, no
present at survey	yes, no, partly
surveyor	text
image filename	text
location image path	text
Hist_mention_1	yes, no
Hist_mention_2	yes, no
Hist_mention_3	yes, no
Hist_mention_4	yes, no
Historical Notes	text
grid location	text
env scheme	text
orchard size (ha)	text
orchard age (yrs)	text
no. of trees	text
current use of orchard	text
orchard status	destroyed, recently abandoned, long abandoned, in active use, gappy, odd remnants
accessibility	good, limited, no access
tree interest	old trees, fallen deadwood, cavities
apple	yes, no, maybe
pear	yes, no, maybe
plum	yes, no, maybe
other species	text
orchard floor management	grazed, ungrazed, mown, arable, lawn, other
grazing	sheep, cattle, horse, other
vegetation	brambles, nettles, thistles, grass, willowherb
veteran tree features	holes in branches, dead wood in canopy, aerial roots, loose bark, water pools, crevices in bark, sap runs, fungal fruiting bodies

Appendix B: Grid References of Orchards Surveyed

Loc ID	Orchard Name	Grid Ref	Address	
L0001	Bracklyn	NO1249 2254	Bracklyn Gardens	
L0002	Bracklyn	NO1255 2268	Orchardbank	Barnhill
L0003	Friaton/ Barnhill Toll	NO1268 2206	Orchard at Barnhill Toll or Friaton	Dundee Road
L0004	Glendoick	NO2046 2352	Glendoick House	Glendoick
L0005	Newtown of Glencarse	NO1959 2162	St Magnus	Glencarse
L0006		NO1857 2126	Inchyra House walled garden	Glencarse
L0007	Glencarse	NO1934 2239	Glencarse House	Glencarse
L0008	Kinfauns	NO1465 2234	Home Farm Orchard	Kinfauns Castle
L0009	Seggieden	NO1673 2160	Seggieden	
L0010		NO184 205	Inchyra Farm	Inchyra
L0011	Pitfour Orchard	NO2078 2044	Pitfour Orchard	now part of Netherfield of Pitfour Farm
L0012	Megginch	NO243 247	Megginch Castle	Megginch
L0013		NO3084 2987	Wayside	6 Castle Road
L0014	Castle Huntly	NO3045 2901	Castle Huntly	
L0015	Rawes	NO3071 2822	Rawes	Rawes Farm
L0016	Templehall/Monorgan	NO3150 2804	Templehall Orchard - west of road	Templehall
L0017	Monorgan	NO3162 2790	Monorgan Orchard - East of road	Templehall
L0018	Carse Grange	NO2718 2545	The Retreat	Grange
L0019	Carse Grange	NO2716 2545	Orchard of Carse Grange	southside of railway
L0020	Grange	NO2720 2527	Orchard at Grange on southside of road	Grange
L0021	Carse Grange	NO2709 2553	Carse Grange	north of railway
L0022	Wester Ballindean	NO2572 2914	West orchard at Wester Ballindean	Wester Ballindean
L0023	Wester Ballindean	NO258 293	Casa Gedzi	Wester Ballindean
L0024	Wester Ballindean	NO258 293	Carse View	Wester Ballindean
L0025	Rossie	NO2809 3061	Walled Gardens	Rossie Priory
L0026	Benvie	NO3285 3144	Orchard to south of Benvie Farm	Benvie
L0027	Overyards	NO313 287	Overyards Cottage	Longforgan
L0028	Overyards	NO312 287	Overyards House	Longforgan
L0029	Powgavie	NO2856 2588	Field west of Powgavie Farm	by Grange
L0030	Bogmiln	NO2839 2556	Orchard to south of farm	Bogmiln Farm
L0031	Waterybutts	NO276 258	Waterybutts Old Manor	Waterybutts
L0032	Muirhouses	NO273 248	Muirhouses Farm	Grange
L0033	Gourdiehill	NO2674 2507	Kinclaven	Gourdiehill
L0034	Newbigging	NO2646 2518	Newbigging Farm	Newbigging
L0035		NO211 240	Cockerhall	Glendoick
L0036		NO215 252	Pitroddie Farmhouse garden	Pitroddie Farm
L0037	Pitroddie	NO2199 2479	Myreside/Pitroddie Old Manse	Myreside
L0038	Flatfield	NO228 247	Flatfield	Errol
L0039	Kilspindie	NO2198 2567	Kilspindie Old Manse	Kilspindie
L0040	Annat	NO2246 2650	Annat House Walled Garden	Rait
L0041	Rait	NO2268 2673	Rait Orchard	Rait
L0042	Fingask	NO230 275	Fingask Castle	Rait
L0043	Kinnaird	NO241 286	Greenhead	Kinnaird
L0044	Craigdallie	NO2494 2887	Scott Craigdallie Cottage	Craigdallie
L0045	Seasides	NO283 244	Seasides	Grange
L0046	Horn	NO2498 2672	Horn Farm	Horn
L0047	Errol Park	NO247 226	Errol Park	Errol
L0048	Port Allen	NO2488 2120	Port Allen Orchard	Port Allen
L0049	Clashbenny	NO2189 2096	Clashbenny Farm	Clashbenny
L0050	Balgay	NO270 274	Balgay Farm	Inchture
L0051	Balruddery	NO313 323	The Cattery	Balruddery

Appendix C: Press Coverage of Survey

Local Press

Dundee Courier, Perth edition.

Article and photo in orchard. Published Friday 7th Sept 2007

Perthshire Advertiser

Article and photo in orchard. Published Friday 14th September 2007

Television

STV, News, Tayside edition.

Interview with author in orchard. Broadcast Tuesday 11th September 2007.

Also available online:

http://www.stv.tv/content/news/main/display.html?id=opencms:/info/newsTayside/20070910/Plans_to_save_Carse_of_Gowriexs_remaining_orchards_underway