# Creating Management Plans for 16 Historic Orchards on the Carselands of the Tay

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v3



Report to Tay Landscape Partnership and the Historic Orchard Forum
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# **Keywords**

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Many people have put had input into creating a list of top fruit varieties that are known to do well on the Carse of Gowrie. Many thanks to all; they are named later in the report.

Finally, a big thank you to all the keepers of orchards, whose time and cooperation have made this task possible.

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# **Summary**

The project is a further significant milestone on the path to restoring the remaining historic orchards on the carselands of the Tay. These orchards represent several important aspects of heritage and landscape value:

- a significant component of the Tay's riparian landscape
- one of only two major concentrations of orchards in Scotland
- a repository of local and historic varieties of orchard fruit
- a key part of local history stretching back to the monks and nuns of the 13<sup>th</sup> century who brought the culture of growing fruit to the area, and guided much of the work of draining the carselands

Engagement with the orchard keepers has been a key aspect of this project. The methods have been designed to allow the keepers to have full input into how they would like to see their orchards revitalised, while at the same time ensuring benefits to the wider public can be realised.

Management plans were created for the following orchards after consultation with their keepers:

Carse Grange (The Retreat) Muirhouses
Fingask Newbigging
Flatfield Port Allen
Grange Templehall

Inchyra Farm Orchard Wester Ballindean
Inchyra House Walled Garden West Oaks (West)
Megginch West Oaks (East)

Monorgan Elcho Castle

Action plans, with a suggested timetable, were created as part of each management plan. To collectively summarise those actions:

- 13 orchards require restorative pruning (totalling 418 trees of various sizes).
- 11 orchards require protection of existing trees.
- 14 orchards require maintenance pruning.
- 11 orchards have a mowing regime recommended to benefit biodiversity.
- 4 orchards are recommended to have drainage works carried out.
- 2 orchards require scrub clearance.

7 orchards are recommended to plant shelter belt and/ or a shelter hedge.

7 orchards are suggested for sampling of scion wood for propagation.

2 orchards are interested in conducting undercrop trials.

In all 16 orchards, new plantings are recommended (totalling 903 trees).

The actions have been timetabled over a 10 year period, but the focus for action has been the 2013 – 2016 timeframe.

Feedback from the engagement process has shown that for most orchards, funding will be a key driver to implementing these action plans.

In the main report, a number of overarching projects were discussed and recommendations were made. These can be summarised by the following recommendations:

- Foster the creation of orchard management services to act for those keepers that are not able to undertake the work themselves.
- Maintain a register of identified fruit trees and update the identification tagging system.
- Facilitate the formation of an equipment pool in order that better
  orchard management is more easily achieved. Mowing equipment that
  does not cause excessive collateral damage to the biodiversity of the
  sward is a key recommendation.
- Make juicing of fruit easier for orchard owners on a personal or commercial basis, as the new plantings begin to produce. A trailerbased mobile juicing unit is suggested.
- The opportunities for a **social enterprise** that could carry out some of the tasks above are discussed, and a feasibility study is recommended.
- Create greater engagement between orchard keepers and the public through a series of organised events, such as an Open Orchards Day.
- Consult on the registration of a Protected Geographical Indication for orchard products from the area.

Finally, a list of suggested varieties was developed through consultation with noted Scottish orchard specialists. The key feature of this list is that the variety is known to do well in the conditions of the east of Scotland.

#### 1 Introduction

The formation of the Tay Landscape Partnership (Tay LP) is a great opportunity for restoration of the historic orchards of the carselands of the Tay estuary. Working with the Historic Orchard Forum (HOF), vital work can be carried out before these important heritage assets are lost. For without intervention, total loss of many of these orchards is inevitable. Many have already gone, and along with them many centuries of history, dating back to a period earlier, than much of our important built heritage that neighbours the orchards. They are truly part of the heritage of the east of Scotland.

The creation of management plans for the key examples of these historic orchards, is an important foundation for this rejuvenation process; and the process of engaging with owners is an necessary step to facilitating the action plans that they contain.

The work presented here is also useful for other orchards in the area, such as community orchards. The development of a variety list should be beneficial to any new planting of fruit trees in the area.

Within this report the term 'keeper' is used in preference to 'owner', though in law most of them are owners. Keeper seems a more appropriate term to use for the fortunate people that are stewards of these centuries-old living entities.

# 2 Methodology

This work builds on previous work carried on the Carse of Gowrie<sup>1 2 3 4 5</sup>, and the experience of participants of the Historic Orchard Forum.

The methodology for this work was relatively simple.

- Develop an orchard management plan template.
- Contact and re-engage<sup>6</sup> with orchard keepers.
- Visit the orchards to update information and collect additional data.
- Sit down with orchard keeper to create 1st draft of management plan.
- Subsequently complete draft including background deskstudy aspects.
- Send draft to keeper for comments and amendments.
- Revise, amend and despatch.

<sup>&</sup>lt;sup>1</sup> Lear, Andrew (2010), Carse of Gowrie Orchard Condition Survey 2010, (Report to Perth and Kinross Countryside Trust.).

<sup>&</sup>lt;sup>2</sup> ECOS Countryside Services (2010), Carse of Gowrie Orchards Habitat Survey and Biodiversity Audit, (Report version 1 to Carse of Gowrie Historic Orchard Forum.).

<sup>&</sup>lt;sup>3</sup> Douglass, J (2010), A Lichen Survey of 3 Orchards in the Carse of Gowrie, .

<sup>&</sup>lt;sup>4</sup> Hayes, Crispin W (2009), *Pilot Survey of Apple Trees & Varieties in Six Historic Orchards on the Carse of Gowrie*, (Report to Perth and Kinross Countryside Trust. Available www.crispinwhayes.com/projects).

<sup>&</sup>lt;sup>5</sup> Hayes, Crispin W (2007), *Historic Orchards of the Carse of Gowrie. Phase 1 Survey: An Investigative Study on their Location, Extent and Condition*, (Report to Perth and Kinross Countryside Trust. Available www.crispinwhayes.com/projects).

<sup>&</sup>lt;sup>6</sup> Most are known to the author through previous work.

Developing the plan template was a significant early task. There was no existing template that was entirely suitable though Natural England's model brief was very useful<sup>7</sup>.

Features from various management plans including the latter, other orchard and woodland management plans were incorporated. The draft plan was reviewed by the client and other parties<sup>8</sup>, and amendments made before it was deployed.

# During fieldwork:

- A GPS unit<sup>9</sup> was used to record tracking & points of interest.
- Photographs were taken which were subsequently geo-referenced<sup>10</sup>.
- Notes were taken.
- The orchard floor and many other features were observed as well as the fruit trees.

#### Mapping

The client determined that the production of maps was not necessary as part of this work. Tay LP have their own GIS resources.

#### **Biodiversity Data**

Though biodiversity is an important part of these historic orchards, the client determined that species lists were not necessary. Other biodiversity information has been included in the management plans.

#### Data disc

Electronic versions of this report together with photos and other data have been provided to the client on DVD data disc.

## 3 Engagement

Engaging with the keepers of the orchards has been a key part of the process of creating these management plans.

With two exceptions, keepers (or their representatives in the case of publicly-managed orchards) have been met with face to face, usually on several occasions.

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<sup>&</sup>lt;sup>7</sup> Thank you to Chris Wedge it's author for passing on a copy.

<sup>&</sup>lt;sup>8</sup> Thanks very much to Catherine Lloyd of Tayside Biodiversity Partnership for her feedback and suggestions.

<sup>&</sup>lt;sup>9</sup> Garmin Etrex 20 unit with WAAS/EGNOS switched on, and utilising both GPS and GLONASS satellites. Within this fieldwork: best indicated accuracy ±2m, but in general the normal indicated accuracy ±3m.

<sup>&</sup>lt;sup>10</sup> Location from tracking data added to image file metatdata during post-processing

Using the basic template as a starting place, each individual management plan document was created<sup>11</sup> sitting alongside the keeper(s) so that transparency of the process was apparent and the keeper was able to feel some ownership of the outcome. Further work was carried out on the plan remotely, and the completed draft was sent to the keeper for comments and amendments.

A final copy of the plan has been provided to each keeper.

#### Ongoing Engagement

A strategy for fuller engagement, that is valuable to the keepers and creates benefit for the wider public, should be created and implemented. This will involve visiting regularly, negotiating and facilitating the works agreed in the Action Plan over the next four year period, and undertaking the role of liaison.

#### 4 Orchards Considered

A list of orchards was provided by Tay LP. The basis for the list was the significant orchards of the 2007 report<sup>12</sup> together with the addition of Elcho Castle, just south of the Tay opposite to the former large Seggieden orchards.

The following 16 orchards have had Management Plans prepared:

- 1 Carse Grange (The Retreat)
- 2 Fingask
- 3 Flatfield
- 4 Grange
- 5 Inchyra Farm Orchard
- 6 Inchyra House Walled Garden
- 7 Megginch
- 8 Monorgan
- 9 Muirhouses
- 10 Newbigging
- 11 Port Allen
- 12 Templehall
- 13 Wester Ballindean
- 14 West Oaks (West)
- 15 West Oaks (East)
- 16 Elcho Castle

<sup>&</sup>lt;sup>11</sup> This was the case with 10 of the 14 privately owned orchards. The 2 'publicly managed orchard' representatives and 4 other private orchards were sent drafts after discussions and for most joint site visits.

<sup>&</sup>lt;sup>12</sup> Hayes, Crispin W (2007), *Historic Orchards of the Carse of Gowrie. Phase 1 Survey: An Investigative Study on their Location, Extent and Condition*, (Report to Perth and Kinross Countryside Trust. Available www.crispinwhayes.com/projects).

Other orchards were considered, but did not have management plans prepared were:

Bogmiln	Field (pasture)	Owner declined to have plan prepared but is happy for graft wood to be taken.
Clashbenny	Extended garden	Owner has had restoration pruning carried out, and the trees are managed. He stated he is not going to plant any more fruit trees. Therefore little scope for further work.
Orchards of Carse Grange	Garden	Trees are managed. Owner not going to plant any more. Other parts of property likely to be developed for housing. After several visits, it has become clear that there is little scope for further work.
Wester Ballindean (Casa Gedzi)	Garden	Owner not consulted but this is garden closely surrounds the house. Therefore little scope for further work.
Craigdallie	Field	Owner requested management plan. Not within scope of this piece of work but should be considered in future.

# 5 Management Services

Maintenance of a traditional orchard is a significant undertaking, and one that many orchard keepers find too large a task either financially or in terms of time and in some cases both. Though there is a growing niche market for the orchard fruit, this is yet to be developed to a stage that the orchards become an overtly economic proposition, indeed this may never happen.

One solution to the issues of the keeper's lack of time or capacity, is to create and offer management services, so that work can be carried out with their agreement and on their behalf. The mechanism for funding this approach has yet to be developed. However the reality for these historic orchards is that if the decades of decline are to be halted, grant funding needs to be put into rejuvenating them.

During the course of engaging owners, their interest in orchard management services has been sought. They have indicated in Section 4.3 of their management plan document if they are broadly interested in this sort of service.

The management service could encompass some or all of the following aspects:

# **Maintenance Aspects**

- Maintenance pruning of trees
- Orchard floor management mowing
- Managing sections of the orchard for biodiversity. eg. hedges, water features
- Maintenance of protection for trees. eg. post & rail enclosures

#### **Orchard Products Aspects**

- Picking of fruit
- Sale of fruit
- Managing other products orchard products such honey & hives
- Producing undercrops

There are other works that it is considered are outwith the scope of Management Services because these are to be short lived 'capital' works rather than maintenance. These are deemed to include:

- Restocking Aspects
  - Propogating examples of good local specimens.
  - Plant new trees
  - Installing protection for new trees
  - Formative pruning of new trees
- Restorative pruning
- Installation of protection for existing trees
- Drainage works, such as clearance & re-digging ditches, re-establishing the furrow in a Rig & Furrow landform.
- Planting hedges and broadleaf trees for biodiversity and shelter from wind.

Even the orchard keepers that have indicated they are not interested in management services are likely to be receptive to these works being carried out on their behalf.

#### 6 Choices for Replanting

# 6.1 Creating a Pool of Suggested Varieties & Species for New Planting

Orchard keepers clearly have opinions about the size & sorts of new trees that they wish to see in their orchards. They also have opinions about varieties and potential uses of the fruit. There is also a separate body of opinion of professionals involved in the field within Scotland. The creation of a Pool of Varieties is a mechanism to bring these two groups of opinions together harmoniously, and still leave the power to choose with the orchard keepers. The mechanism works by creating a list of suggested varieties, in consultation with notable local and national experts. This list forms the basis for suggesting to orchard keepers choices for new plantings. The **key feature** of this list above any other, is that it is a list of varieties that are **known to do well in the east of Scotland**, and especially on the Carse of Gowrie.

Heritage varieties are clearly part of the future of these traditional orchards; but modern varieties also have a important role to play in producing better quality, more disease resistant fruit. So, in the list Appendix A: Listing of Suggested Varieties, heritage, modern and local varieties are identified.

This summer of 2012 has been notoriously sunless and wet. Fruit yields appears to be less than 10% of normal. While we all hope this was an anomaly - Willie Duncan<sup>13</sup> says 1954 was also just like this year - we also need to consider that climate change may make this sort of summer and in particular wetter summers more frequent. Therefore, resistance to scab and other diseases associated with cool wet conditions could be an import selection criteria. Accordingly the List also includes comments on this.

The starting point for creating the list was the varieties named in two of Ken Cox's books<sup>14</sup> <sup>15</sup>; both books specifically about plants for Scottish conditions. The chapters on fruit trees are acknowledged in the text to have significant input from John Butterworth, Willie Duncan, Jim McColl, George Anderson, Alec West and Harry Baker. Most of the varieties that Cox et al mentioned were initially included. The draft list was then circulated to John Butterworth, Andrew Lear, Gerben de Vries, Willie Duncan and the Historic Orchard Forum for comments and additions. The resulting list is given in Appendix A, and is also appended to the individual management plans so that orchard keepers have the suggestions to hand.

# **Priority of Choices**

While the choice of species/varieties/rootstocks is clearly the keeper's decision, it has been agreed by the Tay LP along with the Historic Orchard Forum that it is appropriate to give guidance. These latter two bodies, who are the client for this work, have agreed the following priorities for new plantings: in descending order of priority:

- Dessert apples. (late flowering or frost hardy varieties)
- Other apples
- Pears
- Plums
- Other fruit trees

These priorities do not suggest that only dessert apples should be planted, just that more dessert apples than other apples should be planted, and so on down the list.

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<sup>&</sup>lt;sup>13</sup> personal communications: by phone Crispin Hayes 7<sup>th</sup> September 2012

<sup>&</sup>lt;sup>14</sup> Ken Cox, Raoul Curtis-Machin (2008), Garden Plants for Scotland, (London: Francis Lincoln).

<sup>&</sup>lt;sup>15</sup> Kenneth Cox and Caroline Beaton (2012), Fruit and Vegetables for Scotland, (Edinburgh: Birlinn).

These priorities have been conveyed to the orchard keepers during the preparation of the management plans.

#### 6.2 Propagating Indigenous Examples

Identifying good local examples for propagation is an ongoing task. Orchard keepers and others have noted good examples of trees that they would like more of. These are noted in the individual management plans. Sometimes the varieties have been identified, often they have not been. Even where they have been identified, there is a good case for propagating at least a few examples rather than buying in the 'same' variety, because there is likely to have some genetic drift - a degree of localisation – that may be part of the success of the local specimen.

The other factor is that identification is not exact science – perhaps it's still an art – and the state of the art still has some way to go. Previous work<sup>16</sup> on the Carse of Gowrie has demonstrated this.

# 6.3 Addressing Orchard Replant Disease

Orchard Replant Disease can be a serious problem. It results in reduced root growth and thus reduced tree growth and reduced yield, and particularly affects young trees. A complex of root pathogens is responsible for the disease. The disease and measures to combat it are reviewed by the author elsewhere<sup>17</sup>. An advisory framework to address it has been included in each management plan.

## 7 Recommendations for Overarching Work in 2013-16 timeframe.

#### 7.1 Maintaining a Register of Identified Trees

The creation and maintenance of a unified register of identified trees is an essential part of recording progress and retaining knowledge, especially if significant new trees are added to these heritage orchards.

The register, probably in the form of a database, needs to be maintained so that orchard keepers can inform the holder of the register of additions and losses. A database was created by the author in 2008 for 247 trees included as part of the Pilot

<sup>&</sup>lt;sup>16</sup> Hayes, Crispin W (2009), *Pilot Survey of Apple Trees & Varieties in Six Historic Orchards on the Carse of Gowrie*, (Report to Perth and Kinross Countryside Trust. Available <a href="https://www.crispinwhayes.com/projects">www.crispinwhayes.com/projects</a>). AND subsequent work by the Historic Orchard Forum (unreported) on a trial of DNA analysis of fruit tree leaf samples carried out in 2010.

<sup>&</sup>lt;sup>17</sup> Hayes, Crispin W (2012), Orchard Replant Disease: Proposed Actions to Address it for Historic Orchards in Scotland. A discussion paper. Download at [www.crispinwhayes.com/projects]

Survey of Apple Varieties<sup>18</sup>, and a further dataset of the rest of the tagged & identified trees was created in the form of spreadsheets by Andrew Lear in 2009 and 2010<sup>19</sup>.

There is currently no mechanism to record losses of trees and new plantings, and this needs to be addressed. It is suggested that the Historic Orchard Forum would be a suitable 'holder of the register'.

#### 7.2 Maintaining a System of Unique Tree Identification by Tags

During the course of this work, it has become apparent that the tree identification tags need some modest maintenance. The main issue is growth of trees, and it is clear even the veteran trees have grown over the last few years.

For nailed on tags, two problems:

- Headless or small head nails were used in the 2009 and 2010 tagging operations. The growing tree is pushing the tag off, over the small head of the nail.
- Corroding nails. All nail fixings (2008-10) are rusting because they are made of un-galvanised steel. Though none appear in imminent danger of failure, they will fail in the medium term leading to loss of the ID tag.

A further problem is that the design of the tags. The nail holes are too close to the edge of the aluminium tag, and can tear out when then tag is stressed. This last problem was identified in 2008, and the manufacturer consulted without a satisfactory resolution.

For wired-on tags, one problem has arisen:

These tags in general appear to be in good condition, though there has been a little corrosion of the wire especially from the cut ends. There does not appear to be a problem with electrolytic corrosion between wire and tag at this stage. Wired-on tags were generally used for immature trees, with light galvanised wire being used.

The problem is that they trees have grown considerably in the last few years. Although the tags were loosely wired, some are now tight and must be released and rewired.

The necessity of maintenance of identification tags is widely accepted. Royal Botanic Gardens Edinburgh (RBGE) report<sup>20</sup> that replace all their tags approximately every five years. They use an acetate label on copper wire. They have found the copper wire kills the branch of thin barked species. They are moving to a system of punched aluminium labels on plastic-coated wire, but still expect this to last no longer than 10

<sup>&</sup>lt;sup>18</sup> Hayes, Crispin W (2009), *Pilot Survey of Apple Trees & Varieties in Six Historic Orchards on the Carse of Gowrie*, (Report to Perth and Kinross Countryside Trust. Available www.crispinwhayes.com/projects).

<sup>&</sup>lt;sup>19</sup> Lear, Andrew (2010), Carse of Gowrie Orchard Condition Survey 2010, (Report to Perth and Kinross Countryside Trust.).

<sup>&</sup>lt;sup>20</sup> Personal communications. RBGE. 13<sup>th</sup> September 2012.

years. They also use brass screws in larger trees, leaving 15mm protrusion of the head for growing space.

## Proposal for a solution to securely tag trees

Trial two alternative systems of nailed tags in 2013, with 12 mature trees in each system.

- Use a single 70mm aluminium clout nail (leaving 10mm protruding) to anchor only one end of the existing model tag. The large head of a clout nail should mean that the nail is pushed out as the tree grows. The tag should not be torn as there is only one nail. As the nail is the same material as the tag, there will not be any electrolytic corrosion. The damage to saw blades will also be averted.
   Advice on the phytotoxic effects of aluminium nails need to be further investigated. In general, heavy metals such as copper, cadmium and zinc are recognised as phytotoxic, but aluminium may be to a lesser extent.
- Use a larger punched aluminium tag that can have variety as well as ID number on it. Fix half of the tags with an aluminium clout as above and fix the other half with 70mm brass screws, with 15mm protruding.

As far as wired systems are concerned, galvanised wire is a durable solution, especially is a good quality of galvanising is selected. It is more durable than plastic coated wire and does not have the phytotoxic problems of copper. The problem of tight wires on growing trunks can be addressed by creating a spring-like section of wire by forming it around a dowel, prior to installation. Seven turns around a Ø18mm dowel forms a spring using around 450mm of wire. For example: starting with a Ø200mm tree (probably the largest that we would use wire-on) this will accommodate a 70% increase in girth up to a diameter of Ø340mm.

This is therefore proposed as the solution, and rewiring of all existing tags will be necessary.

#### **Pruning**

Restorative pruning has in some circumstances removed the part of the tree where the tag is attached. Potential loss of identification therefore results. Some remedial action and in some cases retagging is necessary. This should be carried out as part of the pruning contract.

#### **Tagging of New Plantings**

It appears that there is currently no mechanism for numbering or tagging new plantings. A mechanism should be put in place, and tags supplied to the heritage orchards.

# 7.3 Orchard Equipment

While much of the capital and maintenance work can be carried out by the contractors or the keepers with their existing equipment, some specialised forms of equipment suitable for managing the orchard trees and orchard floor would provide wider benefits.

#### **Mowing Equipment**

Providing appropriate equipment is a great opportunity to influence orchard practices in order to benefit biodiversity as well as making the orchard easier to manage.

Often methods of orchard management that help to maximise benefits can be accomplished at no extra cost. For example, in Germany cutting the grass with a reciprocating knife mower (top picture to right) is encouraged because rotary mowers may kill the majority of invertebrate life on the grass. They use less fuel because they cut more efficiently and have a wider cut. Timing the cut later in the summer, after the grasses are in seed also has benefit. Simple measures like this could increase to biodiversity value, and could adopted as standard management practices in the orchards of the Carselands.

Recommend the purchase of a reciprocating knife mower and transport trailer would be a useful step to accomplish these aims. A 'finger' mower like this could be made available for use in the orchards on the basis of a machinery ring, where a reasonable hire charge is paid.

Pedestrian small round balers are also available and would be suitable for orchard work (lower picture to right).



#### Fruit Picking & Storage

Recommend that equipment for picking and transporting fruit would be useful for orchard keepers to be able to hire. This could include:

- Free standing three leg orchard ladders. Safer and faster.
- Picking bags.
- Stacking crates for transport

In the longer term, recommend that an assessment of the needs for fruit storage should be carried out.

#### **Mobile Juicing**

Over a 5 year timescale, recommend creating trailer-mounted fruit juicing apparatus, that is easy and quick to use, in order to provide a further outlet for the increasing amounts of fruit. A large amount of fruit already goes to waste (with the exception of this very poor year) because of its poor quality for table use and because existing use by keepers is limited. The possibility of small-scale juice production is attractive to many of the keepers. The equipment would ideally include a pasteuriser so that storage can be accomplished without freezing. Bag in box containers (3, 5 or 10 litre) are cheap and widely used in Germany for this purpose.

#### 7.4 Opportunities for social enterprise

The development of orchard management services could be a great opportunity for the creation of a social enterprise such as a co-operative or a community interest company to service these needs. Mobile juicing is a further opportunity. The organisation could also take the role of a training body, providing on-the-job training to unemployed people and perhaps those with learning challenges. This latter role could provide an additional stream of income. Recommend a feasibility study is carried out to assess the project.

#### 7.5 Opportunities for orchard orientated activities & events

As part of the development of the management plan, keeper attitudes to community engagement were sought. Most keepers were positive; but what was acceptable varied. For privately owned orchards, the key proviso was that events, community use and public visits must be by prior arrangement. No privately owned orchard keeper

was willing to encourage informal ad-hoc use of the orchard by the public, although some accepted that this did happen and was a tradition.

The sort of events that were discussed with orchard keepers were:

- An Open Orchards day along the lines of Open Gardens Scotland scheme
- Community Use day, where the local community is invited to come and help themselves.
- Receiving groups for an organised visit, especially at blossom & fruit times. Schools or interest groups. (Some visits already happen)

At Megginch orchard there are more ambitious plans. A modest outdoor learning centre for schools is being created as part of their SRDP-funded project. It will be useful to follow and learn from the success of this project, to better inform how community engagement can be carried out elsewhere on the Carselands.

#### 7.6 Protected Geographical Status

The issue of developing branding for Carse of Gowrie orchard products is outwith the scope of this report. However, establishing Protected Geographical Status is a preliminary and inexpensive step that would benefit all orchard keepers and those making commercial use of orchard products.

The stated advantage of Protected Food Names is that it protects the product – and brand – from imitation from outwith the area. Further advantages are that it reinforces the quality of the product, and helps build and strengthen brands that associate with it.

In the EU there are 3 designations available: Protected Designation of Origin, Protected Geographical Indication and Traditional Speciality Guaranteed. The latter relates to the character of the product not to a place of production. As such it is not likely to be relevant to this discussion. The criteria for the former two designations are:

# **Protected Designation of Origin (PDO)**

Product **must be** produced **and** processed **and** prepared in geographical area. Quality or characteristics essentially due to the area.

# **Protected Geographical Indication (PGI)**

Product **must be** produced **or** processed **or** prepared in geographical area. Specific quality, reputation or other characteristics attributable to that area.

While the PDO clearly gives a more precise designation, PGI provides a more flexible approach, still retaining a strong link to the location. So for example, in the production

of juice from Carse of Gowrie orchard fruit, under PDO, pasteurisation and bottling would have to take place in the designated area, whereas under PGI those tasks may be carried out in premises elsewhere, such as Perth. Alternatively, in a bad year, some imported fruit could be used in a product that is processed and bottled on the Carse, and it would still comply with PGI designation.

There are several examples of protected designation for orchard produce, though not in Scotland; notably Gloucestershire, Worcestershire and Herefordshire each have PGI designation for cider and for perry. In terms of fruit and vegetables, Jersey Royal Potatoes, and Yorkshire Forced Rhubarb both have PDO designation. PGI designation has been given for Comber Potatoes, and Armagh Bramley Apples<sup>21</sup>.

Under the rules for Protected Food Names, a name, for example 'Carse of Gowrie Orchard Fruit' could be registered for the designation, but the name of the designation cannot be trademarked. Any producer in the designated area can use the name provided they comply with the designation rules.

The whole registration process takes approximately 2 years, has negligible costs, and in Scotland is managed by the Scotlish Government<sup>22</sup>.

It is recommended that a process of stakeholder consultation is embarked upon, with a view to registering PGI for some or all Carse of Gowrie orchard produce within the 2013-16 timeframe.

#### 8 Conclusions

This project is a further significant milestone on the path to restoring the remaining historic orchards on the carselands of the Tay. The process of engagement has been valuable in making stronger connections with the keepers of the orchards, and demonstrating that revitalising these orchards is to mutual benefit.

The individual management plans that have been created are a unique record of each orchard as it exists now, together with the vision that the keeper has for that orchard. A series of actions have been agreed for achieving the vision.

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<sup>&</sup>lt;sup>21</sup> http://ec.europa.eu/agriculture/quality/door/list.html?&filterReset=true

<sup>22</sup> http://www.scotland.gov.uk/Topics/Business-Industry/Food-Industry/national-strategy/rep/PFNs

Looking at the project as a whole, those actions can be collectively summarised as follows:

- 13 orchards require restorative pruning (totalling 418 trees of various sizes).
- 11 orchards require protection of existing trees.
- 14 orchards require maintenance pruning.
- 11 orchards have a mowing regime recommended.
- 4 orchards are recommended to have drainage works carried out.
- 2 orchards require scrub clearance.
- 7 orchards are recommended to plant shelter belt and/ or a shelter hedge.
- 7 orchards are suggested for sampling of scion wood for propagation.
- 2 orchards are interested in conducting undercrop trials.

In all 16 orchards, new plantings are recommended (totalling 903 trees).

Apart from the individual management plans, a further series of projects has been suggested that bring together and further strengthen the coherence of the wider project of reviving these historic traditional orchards.

In closing, perhaps the key conclusion is found in feedback from the engagement process: funding will be a key driver if the actions recommended here are to be implemented.

# 9 Appendices

## 9.1 Appendix A: Listing of Suggested Varieties

**Key Criteria** for inclusion in this list:

Success in the conditions on the Carse of Gowrie, and broadly the east of Scotland

The following literature sources have be used:

Kenneth Cox, Raoul Curtis-Machin (2008), *Garden Plants for Scotland*, (London: Francis Lincoln). The source stated in the table below as 'Cox/Butterworth/Duncan/McColl' is chapter titled 'Fruit' p143-148 and is stated as having contributions from John Butterworth, Willie Duncan and Jim McColl.

Kenneth Cox and Caroline Beaton (2012), *Fruit and Vegetables for Scotland*, (Edinburgh: Birlinn). The source stated in the table below as 'Cox et al 2012' is the chapter titled 'Tree or Stone Fruit' p82-117 and is stated as having contributions from John Butterworth, Willie Duncan, George Anderson, Alec West and Harry Baker.

The list also has contemporary comments and suggestions from the author, John Butterworth, Willie Duncan, Andrew Lear, Gerben de Vries and members of the Historic Orchards Forum; all which were given in September 2012.

Thanks to all contributors of varieties and comments.

In respect of classifying the varieties as Heritage, Modern or Local, the following criteria have been chosen:

Heritage = first recorded or released in or before 1944

Modern = first recorded or released after 1944

Local = bred in or 'signature variety' of central Scotland or east of Scotland

collated by CW Hayes A v. 4	ssociates 1-0c	t-12						
Apple Varieties		Heritage						
Variety	First recorded	Local Modern	Use	Fertility	Season	Scab/ disease	Recommendation source	Comments from source
	Date					resistant		
Heritage Varieties Arthur Turner	1912	Н	С	part self fert			Cox/Butterworth/Duncan/McColl	[CWH comments: does well in many of the Carse orchards]
Blenheim Orange	1740	Н	d	triploid			Cox/Butterworth/Duncan/McColl	John Butterworth (2012) says does not know about this variety
Bloody Ploughman	1883	H, L	d				Cox et al 2012	prone to scab in west. [CWH comments: interesting curiosity but not a great eater]
Bramley Seedling Cambusnethan Pippin	1809 1750	H H, L	c d	not pollinator			Cox/Butterworth/Duncan/McColl Cox et al 2012	excellent scab-free dessert apple according to David Storrie.
Charles Ross	1890	Н	d/c				Cox et al 2012	stores well, dual purpose. good for juicing
Chivers Delight Coul Blush	1883 1827	H	d				Cox/Butterworth/Duncan/McColl Cox et al 2012	Willie Duncan's choice for flavour and good storage Good performer in North.
Court pendu plat	1613 1678	H H					Andrew Lear Andrew Lear	Found locally at Flatfield.
Devon Quarrenden East Lothian Pippin	1883	Н	d/c				Cox et al 2012	Found locally at Flatfield. ripe late august, poor storing.
Edward VII Egremont Russet	1902 1872	H	c d				Bruce Bennett Pillars of Hercules Cox/Butterworth/Duncan/McColl	late flowering, prolific fruiter in Fife keeps well. Scab prone in west but good in east.
-3								John Butterworth (2012) says would not recommend this variety. Gerben de Vries (2012) says no problems but some split in certain years.
Ellison's Orange Galloway Pippin	1904 1871	H H	d d			scab resistant	Cox/Butterworth/Duncan/McColl	cox-like fruit
George Cave	1923	Н	u				Cox/Butterworth/Duncan/McColl Andrew Lear	scab free and delicious
Golden Spire Grenadier	1850 1862	H	С		early	good scab resist.	Andrew Lear Cox/Butterworth/Duncan/McColl	never fails poor storing. good in west.
Hawthornden	1870	H, L	d		,	can be scaby	Cox et al 2012	Raised Edinburgh, yellow with red flushing
Hoods Supreme	1924	Н	d				Cox et al 2012	raised Angus. Sweet but not much taste.  John Butterworth (2012) says insipid to eat. Only good for appearance, and thus would not recommend it.
Howgate Wonder  James Grieve	1915 1893	H, L	d			scab sometimes	Cox/Butterworth/Duncan/McColl Cox/Butterworth/Duncan/McColl	Scottish Gardenplant Award. Recommended by Butterworth, McColl. [CWH comments: Does well in several Carse orchards] better in east.
Keswick Codling	1793	Н	С	part self fert		good scab resist.	Cox et al 2012	very tough apple, good for exposed loc, ripens Aug. Andrew Lear (2012) says never fails.
Kidd's Orange Red	1924	Н	d				Willie Duncan	Good in 2012
King of the Pippins Lady of Wemyss	1800 1831	H H, L	d/c c		early late	canker?	Cox et al 2012 Cox et al 2012	late flowering, common older var. in Scotland. keeps shape well when cooked. stores well.
Lane's Prince Albert	1840	Н	С			scab resistant	Cox et al 2012	Gerben de Vries (2012) says canker prone. holds together well when cooked
Lord Derby	1862	Н	С			good scab resist.	Cox/Butterworth/Duncan/McColl	good disease resistance
Lord Rosebery	1934	H, L	d			prone to scab	Cox et al 2012	good tasting sweet apple. grows well at Fyvie Castle [CWH comments: Raised by Storrie at Glencarse]
Manks Codlin	1815 1903	H	_				Andrew Lear	Found locally at Flatfield.
Millicent Barnes Newton Wonder	1887	Н	d				Willie Duncan Andrew Lear	Does well at Port Allen
Norfolk Royal Russet Oslin	1826 anc. Fr	H H, L	d		early		Willie Duncan Cox et al 2012	Good in 2012 mixed opinion but on Carse good taste. Does not store.
(syn. Arbroath Pippin)	<1815	, _	ŭ		curry		COX CC 81 2012	mixed opinion but on earse good taste. Boes not store.
Pitmaston Pineapple Ribston Pippin	1814 1707	H	d				Cox et al 2012  Cox et al 2012	slightly russeted, good sweet nutty flavour.  John Butterworth (2012) says does not know about this variety.  good taste, high Vit C. Thought to be parent of Cox's O.P., but does
Scotch Bridget	1851	H, L	С		early		Cox/Butterworth/Duncan/McColl	better here. Early flowering large, fine flowers, ripens early.
Stirling Castle	1831	H, L	С		mid	prone to canker	Cox et al 2012	good cropper. great apple snow.
Stobo Castle	1900	H, L	С		early		Cox et al 2012	Introduced by David Storrie of Glencarse. Red flushing. Odd bad year.
Sunset Thorle Pippins	1918 1831	H H, L	d			fairly resistant	Cox/Butterworth/Duncan/McColl Andrew Lear	sweet-sharp Found locally at Megginch
Tower of Glamis	<1800	H, L	С				Cox et al 2012	large heavy four sided apple grown in Clyde Valley and Carse of
( syn Carse of Gowrie)								Gowrie.
Tydeman's Early Worce White Melrose	1929 ~1600	H H. L	d				Bruce Bennett Pillars of Hercules Cox et al 2012	does well in Fife Large. Use quicky or loses it flavour. Formerly commercial in
Worcester Pearmain								Borders.
worcester Pearmain	1874	Н	d		early	sometimes	Cox/Butterworth/Duncan/McColl	sweet juicy fruit, best off the tree. Recommended by Butterworth, Duncan
Modern Varieites - Bolero	post W 1976	<b>W2</b> M	d		early		Cox/Butterworth/Duncan/McColl	John Butterworth (2012) says does not know about this variety
Bramley Clone 20	1370		С		carry		Cox/Butterworth/Duncan/McColl	more fruit, less growth than Bramley. John Butterworth (2012) says
Charlotte	1975	М	С				Cox/Butterworth/Duncan/McColl	
Discovery	1949 1966	M M	d			good scab resist.	Cox/Butterworth/Duncan/McColl Cox/Butterworth/Duncan/McColl	Scottish Gardenplant Award. Does well in north. All recommend it. Doesn't store well. not very hardy. John Butterworth (2012) says does not know about
Fiesta	1972	М	d					this variety. Gerben de Vries (2012) says poor harvest, requires a lot of sun.  Scottish Gardenplant Award. cox-like fruit, good in north, keeps well,
riesta	1372	1-1	u				Coxy Butter worthy Duncary McColl	Can canker in some areas. Favourite of Jim McColl.  Willie Duncan (2012) now says too variable to be good.  John Butterworth (2012) says does not recommend this variety.
Greensleeves Herefordshire Russet	1966 1975	M M	d	part self fert		can be scaby	Cox et al 2012 Cox/Butterworth/Duncan/McColl	frost resistant flowers, but Willie Duncan says can be scaby in Fife. cox-like fruit.  John Butterworth (2012) says does not know about this variety.
Jupiter	1966	М					Willie Duncan	good in 2012. Good substitute for Cox OP. Good keeper.
Katy	1947	М	d				Cox/Butterworth/Duncan/McColl	skin thick, good in west. Andrew Lear (2012) suggests good for juicing.
Limelight	1985	М	d			good scab resist.	Cox/Butterworth/Duncan/McColl	crisp, free cropping.  John Butterworth (2012) says does not know about this variety.
Polka	1976	M	d d/o		sept-oct			John Butterworth (2012) says does not know about this variety
Port Allen Russet Red Devil	1958 1975	M, L M	d/c d			good scab resist.	Cox et al 2012 Cox/Butterworth/Duncan/McColl	thought to come from Port Allen. brisk rich flavour. good flavour
Red Falstaff	1990s?	М	d				Cox/Butterworth/Duncan/McColl	crisp juicy, good yield, frost resistant flowers, good storage.  John Butterworth (2012) says does not know about this variety.  Andrew Lear (2012) recommends it.
Red Windsor	?	М	d		early	good scab resist.	Cox/Butterworth/Duncan/McColl	cox-like fruit
Scotch Dumpling Scrumptious	1949 ?	M, L M	d		early	scab prone in west	Cox et al 2012 Cox/Butterworth/Duncan/McColl	Post war Scottish apple. Large fruit. Fine pink flowers. very good taste, frost hardy, fruit stays on tree.
Spartan	1926	M, L	d				Cox/Butterworth/Duncan/McColl	John Butterworth (2012) says does not know about this variety.
Waltz						zeao prone in west		John Butterworth (2012) would not recommend this variety.
	1976	M	d		oct		Cox/Butterworth/Duncan/McColl	John Butterworth (2012) says does not know about this variety

Pear Varieties	Cinat	Heritage						
Variety	First recorded	Local Modern	Use	Fertility	Season	Scab/ disease	Recommendation source	Comments from source
	Date					resistant		1
Heritage Varieties								
Beth	1938	Н	d	self	early		Cox/Butterworth/Duncan/McColl	juicy, sweet, compact tree. Heavy cropper from young age.
Beure Hardy	1820	Н	d	poor pollinator			Cox/Butterworth/Duncan/McColl	tender sweet, juicy. vigourous. takes a few years to bear fruit Gerben de Vries (2012) says poor fruiting in most years
Bristol Cross	1920	Н	d		mid		Cox/Butterworth/Duncan/McColl	good in west
Chalk	?	Н	١.				John Hulbert	in his collection at Longforgan, grafts ex Threave, ex Invergowrie
Conference	1885	Н	d	self			Cox/Butterworth/Duncan/McColl	perhaps best for Scotland as sets fruit even when frosted. good flavour, heavy cropper.
Craig	1875	H, L					CWHayes survey	sweet small early pear, goes over quickly. Popular on the Carse. Raised in Perth as Craig's Favourite.
Crawford	1875	H, L	d				Cox/Butterworth/Duncan/McColl	ex Newburgh, Fife
Cuisine Madame	?	Н					John Hulbert	in his collection at Longforgan, grafts ex Threave, ex Invergowrie
(syn for Jargonelle ?) Doyenne du Comice	1849	Н	d	needs pollinato	-	scab prone	Cox/Butterworth/Duncan/McColl	best flavour, but needs a warm sheltered site.
Drummond	?	H, L					John Hulbert	Gerben de Vries (2012) says poor fruiting in most years. in his collection at Longforgan, grafts ex Threave, ex Invergowrie
Flower of Monorgan	?	H, L	-				John Hulbert	in his collection at Longforgan, grafts ex Threave, ex Invergowrie
Goud Knapp	<1884	H, L					John Hulbert	in his collection at Longforgan, grafts ex Threave, ex Invergowrie.
(syn Golden Knap ? )								Golden Knap is recorded in Hogg, hence assumed date. National Fruit Collection lists Goudnap as synonym of Grey Honey & various Port Allen.
Gourdiehill	?	H, L					John Hulbert	in his collection at Longforgan, grafts ex Threave, ex Invergowrie
Green Pear of Yair	<1884	H, L					John Hulbert	in his collection at Longforgan, grafts ex Threave, ex Invergowrie.  Recorded in Hogg. Ex Yair on the Tweed
Grey Auchan	?	H, L					John Hulbert	in his collection at Longforgan, grafts ex Threave, ex Invergowrie
Grey Benvie	?	H, L					John Hulbert	in his collection at Longforgan, grafts ex Threave, ex Invergowrie
Grey Honey	?	H, L					John Hulbert	in his collection at Longforgan, grafts ex Threave, ex Invergowrie
syn. Port Allen Hessle	?	H, L					Cox et al 2012	old cooking pear but not best tasting raw. tough tree. good scab
								resistance. [CWH comments: found in many orchards on the Carse. Hoog says orig ex Yorkshire]
Jargonelle	<1629	Н	d	triploid			Cox/Butterworth/Duncan/McColl	
Longueville	ancient	Н					John Hulbert	[CWH comments: Hogg says v.popular in Perth] in his collection at Longforgan, grafts ex Threave, ex Invergowrie
Louise Bonne of Jersey		Н.	d		mid		Johanna Babbs	does well in Perth.
							3.5.11.0	Gerben de Vries (2012) good fruiter in most years. sweet fruit!
Maggie Duncan	?	H, L					John Hulbert John Hulbert	in his collection at Longforgan, grafts ex Threave, ex Invergowrie in his collection at Longforgan, grafts ex Threave, ex Invergowrie
Merton Pride	1941	Н.	d	triploid			Cox/Butterworth/Duncan/McColl	
Seckle	?	H, L	+				John Hulbert	in his collection at Longforgan, grafts ex Threave, ex Invergowrie
Seggieden	?	H, L					John Hulbert	in his collection at Longforgan, grafts ex Threave, ex Invergowrie
Sensation	1940	Н	d				Cox/Butterworth/Duncan/McColl	[CWH comments: commercially listed as a sport of Williams Bon C.]
Williams Bon Chretien	ancient	Н	/bott	le			Cox/Butterworth/Duncan/McColl	juicy, good bottling, heavy cropper
Winter Christie	?	H, L					John Hulbert	Gerben de Vries (2012) says poor fruiting in most years. in his collection at Longforgan, grafts ex Threave, ex Invergowrie
William Chilipale	•	, -					John Halbert	in the concection at Europe gard, grants ex fine cave, ex invergonne
Modern Varieites	post W	W2						
Concorde	1977	М	d	part self fert			Cox/Butterworth/Duncan/McColl	good flavour, heavy cropping. Recommended by Dunan and McColl.
Invincible	>1950	М	d	self			Cox/Butterworth/Duncan/McColl	Gerben de Vries (2012) says poor fruiting in most years.  not best flavour, but best for severe climates. can flower a second time if frosted. fruits from young age.
Plum, damson and ga	First	Heritage		<b>.</b>	0	01.4.11	B	
Variety	recorded Date	Local Modern	Use	Fertility	Season	Scab/ disease resistant	Recommendation source	Comments from source
Czar	1874	Н	С		early		Cox/Butterworth/Duncan/McColl	sharp flavour, tough, spring frost & shade resistant Gerben de Vries (2012) says poor fruiting in most years.
Dennistoun's Superb	1790	Н					Cox et al 2012	hardier than the gages. resistant to canker
(syn Imperial Gage) Excalibur	1989	М	d				Cox/Butterworth/Duncan/McColl	Gerben de Vries (2012) says no problems, good fruiter
Haganta	?	M	u				Cox et al 2012	New variety from the Fatherland, stunning, purple skin, said to
Haronma	?	М					Cox et al 2013	disease resistant (as yet unproven)  New variety from the Fatherland, stunning, purple skin, said to disease resistant (as yet unproven)
Herman Jubilee	? 1905	M H	d				Cox et al 2012 Cox/Butterworth/Duncan/McColl	Nick Dunn recommends. early fruiting excellent flavour.
Marjorie's Seedling	1912	Н	c/d		late			sweet but not best taste. good cooker. vigorous
Opal	1925	Н	d				Cox/Butterworth/Duncan/McColl	Gerben de Vries (2012) says no problems, good fruiter. tastes like Victoria, less susceptible to canker so recommended.
Victoria	1860	Н	d				Cox/Butterworth/Duncan/McColl	
Damson			-					
Farleigh Damson	1820	Н	С	self				most reliable fruiter in Scotland
Merryweather	1907	Н	С				Cox/Butterworth/Duncan/McColl	also good in cold exposed locations. Gerben de Vries (2012) says no problems, good fruiter
Gages			-					Gages need good sunny spot to ripen
Cambridge	1978	М		self			Cox/Butterworth/Duncan/McColl	prob best for Scotland, but Gerben de Vries (2012) says poor fruiter
Dennistons	?						Cox/Butterworth/Duncan/McColl	in most years.  Green. Gerben de Vries (2012) says no problems, good fruiter
(same as D' Superb?) Early Transparent	1866	Н	-				Cox/Butterworth/Duncan/McColl	
Oullins	1860	Н			late		Cox/Butterworth/Duncan/McColl	yellow. Gerben de Vries (2012) says no problems, good fruiter
Jefferson	1825	Н					Cox/Butterworth/Duncan/McColl	yellow

First recorded Date		Use	Fertility	Season	Scab/ disease resistant	Recommendation source	Comments from source
?	М	d				Cox/Butterworth/Duncan/McColl	sweet, dark red, good flavour, heavy cropping, seldom splits.  Duncan's best choice for Scotland.
<1629	Н	С				Cox/Butterworth/Duncan/McColl	very hardy
>1950	М	d				Cox/Butterworth/Duncan/McColl	
>1950	М	d				Cox/Butterworth/Duncan/McColl	good frost tolerance
>1950	М	d				Cox/Butterworth/Duncan/McColl	sweet black
>1950	М	d		late		Cox/Butterworth/Duncan/McColl	dark red, heavy fruiting
		Use	Fertility	Season	Scab/ disease	Recommendation source	Comments from source
Date	Modern		,		resistant		
1000						C	Not albein by the Control of Cont
	IM						Not edible but often used for pollinator for apples
							Ruby red, very good for jelly
							White blossom, early fruit
	Н			-			Orange and red fruit, most popular for jam.
?					Slightly scab prone	Cox et al 2012	Maroon fruit, good for jelly.
First recorded		Use	Fertility	Season	Scab/ disease	Recommendation source	Comments from source
Date	Modern				resistant		
1						Ct -l 2012	
1	п					Cox et al 2012	
							Walnuts need a good summer to ripen, but can be pickled green.
?			self			Cox et al 2012	Gerben de Vries (2012) says late producer, tree has to mature quite a bit.
	recorded Date  ?  <1629 >1950 >1950 >1950 >1950 >1950 >1950  1980 ? 1870s ?  First recorded Date  1980 ? ? ?  1870s ?	recorded   Local	Percent   Percent   Percent   Percent	Percent   Percent   Percent   Percent	Percented   Local   Use   Fertility   Season	Percorded   Local   Use   Fertility   Season   Scab/ disease   resistant	recorded Local Use Fertility Season Scab/ disease Recommendation source    Part

# 9.2 Appendix B: Recommendations & Action Plan for Overarching Projects

Traditional O	Traditional Orchard Management Plans							
Recomme	Recommendations for Overarching Projects	g Projects						
prepared by CW F	prepared by CW Hayes Associates on behalf of Historic Orchards Forum and Tay Landscape Partnership	nards Forum and Tay Landscape Partne.	ship					
version:	2							
Project	Project Name	Description	Target	O)	Suggested Timescales	les		
₽			Scale of					
			Activity	2013-14	2014-15	2015-16	2016-17	2017-2022
OP/1	Keeper Liason Project	Appoint a person to liase with the orchard keepers over the duration of the programme	All historic orchards within the wider project.	>	7	7	7	
OP/2	Maintaining an Historic Orchards Tree Register & ID System	Create and maintain unified register. Maintenance & retagging programme.	All historic orchards within the wider project.	Create register. Tagging trials.	Update register annually. Roll-out retagging including rewiring.	7	7	7
OP/3	Orchard floor equipment project	Provide biodiversity-friendly mowing equipment	Available to all historic orchards within the wider project.	>	>	7	7	7
OP/4	Orchard picking kit project	Provide specialised ladders, picking bags, crates and other equipment.	Available to all historic orchards within the wider project.		7	7	7	7
OP/5	Carse Juice Initiative	Mobile trailer mounted juicing plant for service or hire	Available to all historic orchards within the wider project and other relevant parties in the LP area			7	7	7
OP/6	Enterprising Orchards Project	Creation of social enterprise to provide training and orchard management services plus operation of mobile juicer	Available to all historic orchards Feasibility study Implement study within the wider project and other relevant parties in the LP area	Feasibility study	Implement study outcomes.	7	7	7
0P/7	Geographical Identity Project	Consult and agree proposed PGI status for Carse of Gowrie orchard produce	Available to all historic and other orchards within the wider project	Consultation	Implementation			

9.3 Appendix B: Management Plans of Publicly Managed Orchards

Management plans for the following publicly managed orchards are given below:

Elcho Castle - Historic Scotland

West Oaks (West) - Network Rail

# 9.4 Appendix C: Management Plans of Privately Owned Orchards.

Management plans for these privately owned orchards are bound separately, and for reasons of privacy are not included in this version of the document that is intended for the public domain.

This appendix includes Plans for:

Carse Grange

Fingask

Flatfield

Grange

Inchyra Farm Orchard

Inchyra House Walled Garden

Megginch

Monorgan

Muirhouses

Newbigging

Port Allen

Templehall

Wester Ballindean

West Oaks (East)