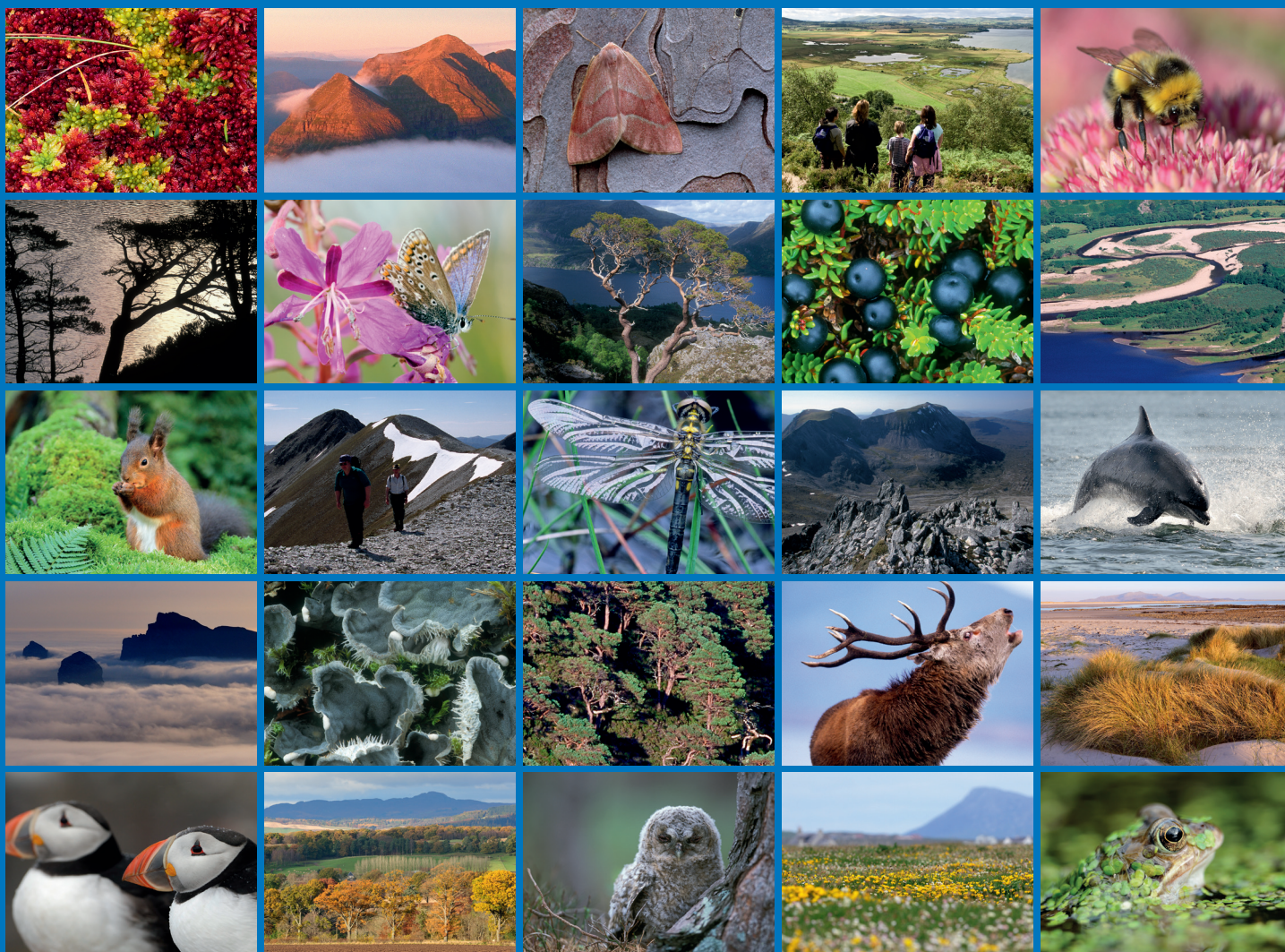


A national orchard inventory for Scotland – area report for North Ayrshire





Scottish Natural Heritage
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All of nature for all of Scotland
Nàdar air fad airson Alba air fad

RESEARCH REPORT

Research Report No. 995

A national orchard inventory for Scotland – area report for North Ayrshire

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RESEARCH REPORT

Summary

A national orchard inventory for Scotland – area report for North Ayrshire

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Project No: 015801

Contractor: Crispin Hayes Associates

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Keywords

orchard; fruit tree; top fruit; apple; pear; plum; undercrop; EUNIS G1.D4; North Ayrshire

Background

There has been growing interest in traditional orchards in Scotland for a little over a decade. This interest has a great breadth; from cultural heritage and horticultural practice, to historic varieties and the gradual disappearance of this unusual Scottish habitat.

The National Orchard Inventory for Scotland Project aims to create a comprehensive orchard inventory for the nation. This has probably not been attempted for over a century, perhaps since the 1885 Congress. The rationale that underpins this aim is that an Orchard Inventory will form the basis for addressing a number of issues linked to the decline of orchards over the last four decades and create a strong foundation for their revival. Simply put, we need to know what's where in order to change the downward trajectory.

The project began in 2013 with a pilot study which since then has received funding support from Scottish Natural Heritage. The programme has grown since that time to add further phases so that at the time of writing more than half of Scotland's orchards have been surveyed and recorded. The national project is reported separately, and is available at the project website www.scotlandthefruit.org.uk

Main findings

- A total of 25 orchard sites were surveyed, of these 10 were found to be intact orchards.
- The total acreage of orchards remaining in this area was found to be 1.6 ha and the average area of each orchard was 0.2 ha.
- Most of the orchards contain less than 30 trees and are in a domestic setting. No large orchards of commercial size are recorded.
- Though apple dominates, some orchards contain a mixture of the other fruit species, reflecting their domestic use.
- The tree stock contains trees of predominantly young age; very few mature trees were recorded.
- Veteran tree features indicate few orchards contain high levels of biodiversity.
- The majority of orchards have some or active management, and this is at a higher rate than typically found elsewhere in Scotland.
- Undercrops of fruit and vegetables were not recorded at all. This is unusual in Scotland.

- Most fruit is used for family and friends, some is left to waste but none is sold commercially.
- No domestic livestock are found in these orchards.
- The tree stock profile is skewed towards younger trees, with very little in the way of mature orchards being recorded outside the larger country houses.
- The qualitative data as given in the anecdotal and comment section shows that this area has lost its previously well-established orchards, many of these formerly being present on the large estates. Some of the cultural heritage remains, but is in danger of being lost.

To conclude, North Ayrshire contains a small number of small orchards, most of which are quite actively managed and from which the fruit is used within the domestic setting. There are no large or commercial sized orchards which sell their fruit. These appear to have been lost entirely. In these respects North Ayrshire is not typical of the national picture for orchards.

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Acknowledgements

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Local Collaborating Organisations

Scottish Smallholders Association

National Collaborating Organisations

Scottish Natural Heritage

Orchard Research & Enterprise CIC

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Lorna Gibson, former GIS Officer at Crispin Hayes Associates who made a first deskstudy assessment of nearly two thousand sites across Scotland.

Thanks for all your contributions.

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1. INTRODUCTION

There has been growing interest in traditional orchards in Scotland for a little over a decade. This interest has a great breadth; from cultural heritage and horticultural practice, to historic varieties and the gradual disappearance of this unusual Scottish habitat.

The National Orchard Inventory for Scotland Project aims to create a comprehensive orchard inventory for the nation. This has probably not been attempted for over a century, perhaps since the 1885 Congress. The rationale that underpins this aim is that an Orchard Inventory will form the basis for addressing a number of issues linked to the decline of orchards over the last four decades and create a strong foundation for their revival. Simply put, we need to know what's where in order to change the downward trajectory.

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This document is one of a series of reports that provide results for particular areas, which are usually coherent with the local authority domain. The purpose of producing these 'Area Reports' is to make results relevant to local organisations and local people. It is intended to raise awareness about their orchards and their cultural heritage, and to identify issues that may be contributing to their decline and, in some cases, revival.

2. COLLABORATION

The national project is structured to partner collaboratively with local groups. Resources, systems and coordination are provided nationally, fieldwork is organised and carried out by the local collaborating organisations.

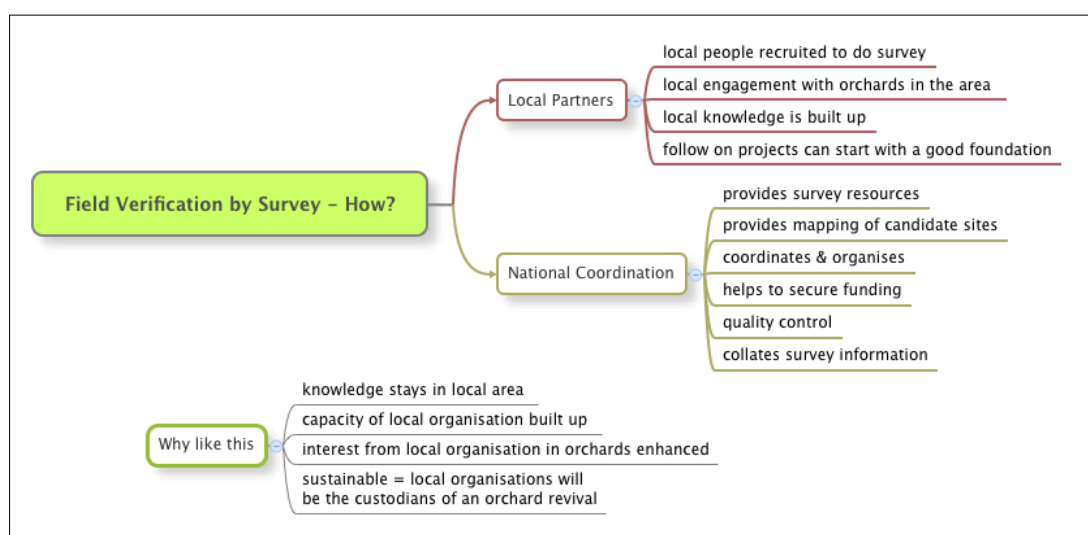


Figure 1: Structure of Collaboration for Field Verification

The graphic shows what each partner brings to the field survey work. The reason why we have structured the project like this is also shown. We want knowledge to be retained locally so that capacity is built and a sense of ownership and interest in local orchards is strongly established. We think this will be the most sustainable way to create a foundation for an orchard revival.

As a project partner, the local collaborating group has a copy of the data collected in their area.

3. BACKGROUND TO THE AREA

North Ayrshire - as a unitary authority area - comprises Irvine and Ardrossan and from there north to Largs and almost to Wemyss Bay and stretching some way into the coastal hills.

The area has an industrial and agricultural heritage, but this does not include any significant amount of commercial horticulture.

The climate is relatively mild and the coastal fringe has moderate rainfall but this rises rapidly inland.

Further north the coastal hills and inland valleys predominate, and this is reflected in the orchards tending to be for household rather than commercial purposes.

4. METHODOLOGY

The methodology for the project (of which this area is a subset) is described in Annex 2.

To summarise, a two stage approach is adopted.

1. A deskstudy is carried out, looking for orchard sites from mapping, historical data, existing surveys and other sources. This is collated on a Geographical Information System. Each site is given a unique number and a location map created. Nationally the deskstudy considered 1859 sites of which 1728 were considered candidates for field verification.

2. Field verification. Each candidate site was visited and surveyed by a volunteer surveyor. Photos were taken where possible. The survey results were submitted to the national project.

Finally the results are collated and reported.

The Local Facilitation for this area was provided by George Grant of Scottish Smallholders Association.

Time input for field verification work is reported in Annex 2.

5. STRUCTURE OF RESULTS

The results are structured in this report in three distinct sections:

- Numeric and classification information (quantitative), together with overall conclusions.
- Anecdotal and comment information, qualitative aspects.
- Representative photo gallery. A collection of photos with descriptive captions that illustrate the orchards of the area.

Photos have been submitted for a total of 23 sites.

6. NUMERIC AND CLASSIFICATION INFORMATION

Quantitative Data Results

We have analysed the data collected and have turned it into a more presentable form by creating a graphical output. In the section below, those graphs are presented with a commentary.

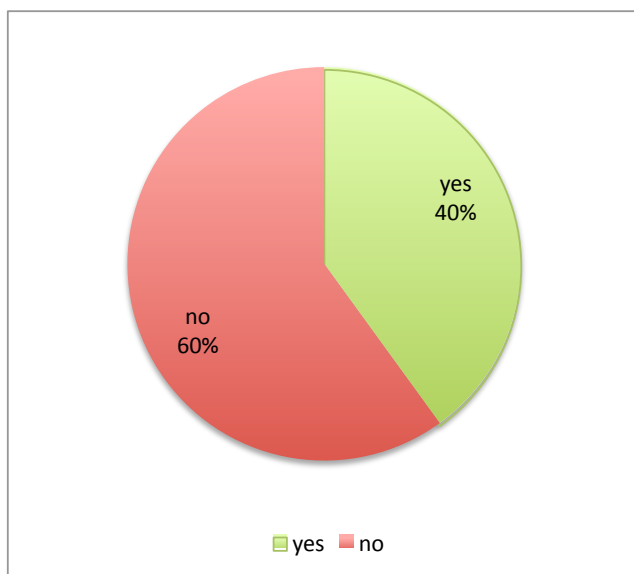


Figure 2 Summary: Is the orchard present now?

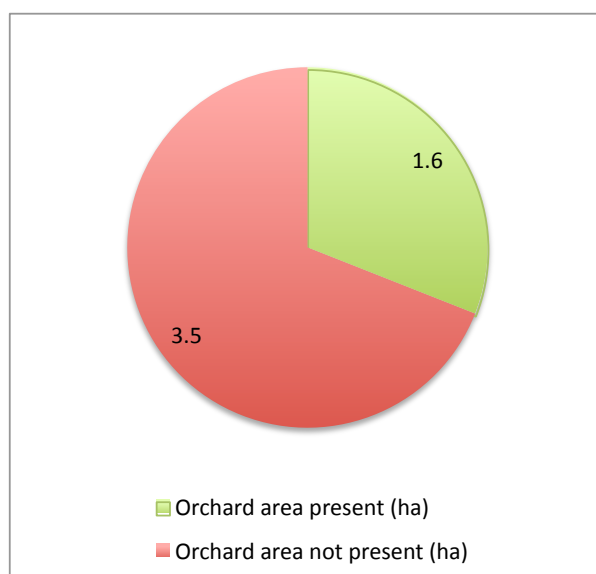


Figure 3 Area of orchard sites

The graphs above show the headline results of whether orchards were found to be present on candidate sites (left pie chart), and the total associated area (right pie chart).

Field surveywork was completed for this area for 25 candidate sites. Of that number, 10 sites were found to have an orchard present and of those 4 were new orchard sites, the balance resulting from our deskstudy. Our definition of an orchard is a collection of 5 or more fruit trees in proximity. By 'new sites' we mean sites not identified in our deskstudy - so new to us. Many, though not all, are recently planted orchards.

The fieldwork also found that a total of 15 sites were not orchards at the time of survey. Most of these latter sites were identified in the deskstudy as likely to be orchards from mapping, historical, or previous survey data. As such it is likely to represent some of the loss of orchards.

A further 1 site(s) were visited where it was not possible to gain access or make a determination as the existence of an orchard.

In terms of the acreage of sites, the fieldwork found that 1.6 ha of the orchard sites were present in North Ayrshire. This represents 31% of the total area of deskstudy + new orchard sites. The average area of an orchard is 0.2 ha.

The graphs show that there has been a significant loss of orchards, both in terms of numbers and total area. The loss is significant because the area does not have a large number of mature orchards that have historical as well as high biodiversity value.

For a historical perspective on the significance of this trend we have also analysed the OS 1st edition data which was assessed for each site during the deskstudy. The OS 1st edition was surveyed in the late 1850s and early 1860s, and covered most of Scotland and was very detailed. It represents a good resource for historical analysis.

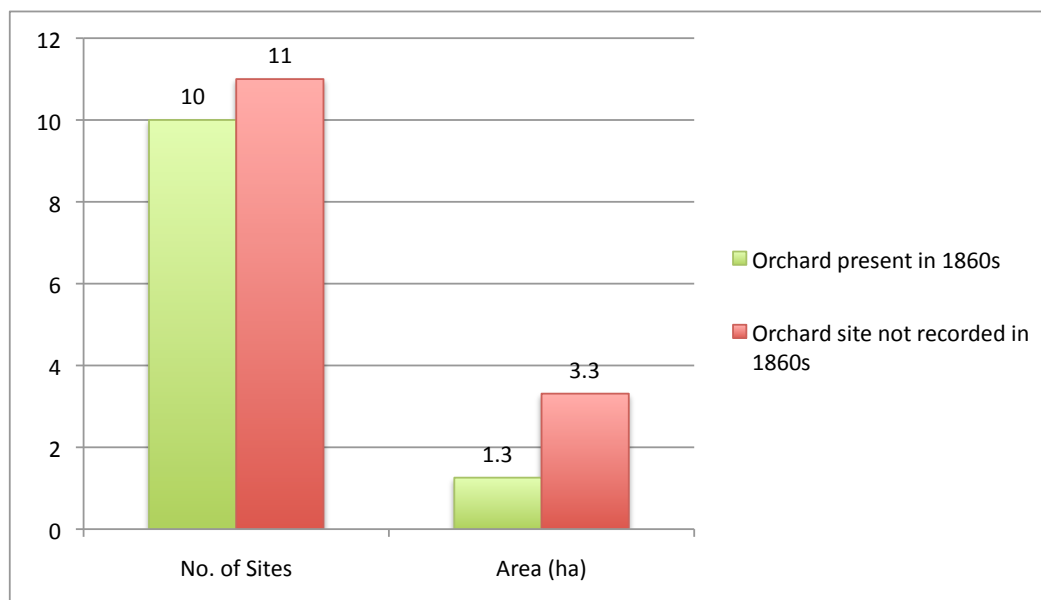


Figure 4 Orchard sites recorded on the OS 1st Edition Map (1860s)

In North Ayrshire a determination for the presence of an orchard on the OS 1st Edition was made for a total of 21 candidate sites. The graph shows that of these, a total of 10 candidate sites were an orchard. The total area for these orchard sites was 1.3 ha in 1860s.

The graph also shows that 11 sites are more recent than the 1860s, and this represents some growth in the orchard area since then. However as these figures for quantity and area show, there are relatively few orchards recorded here.

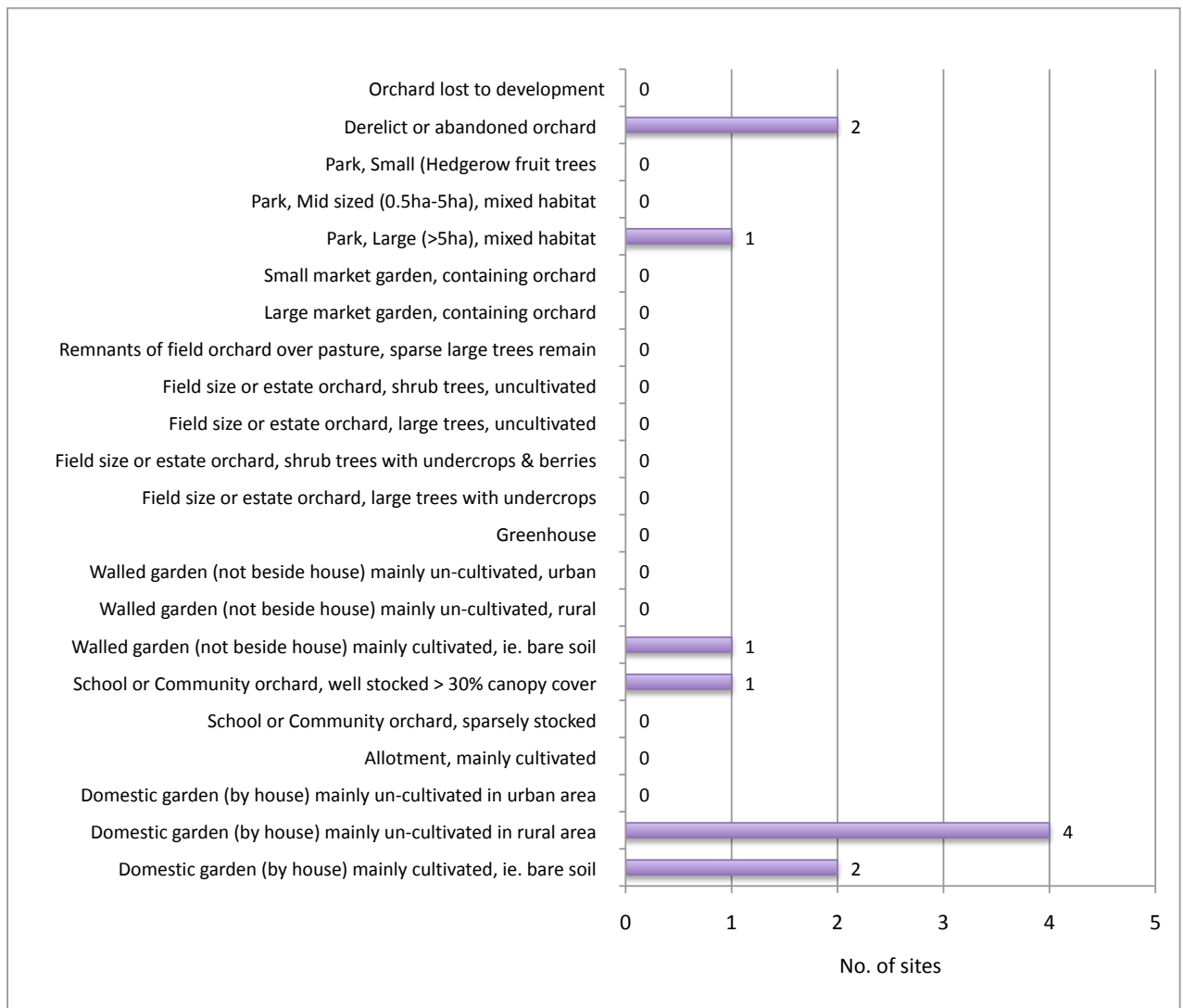


Figure 5 What type of orchard sites?

The type of site was recorded as a simple metric that can give a powerful insight into the type of orchard being considered, as well as assisting in the habitat classification using the European Nature Information System (EUNIS). Hence the apparent complexity of site types.

Site type was not recorded for all orchards. From the data that we have it is clear that domestic orchards predominate. No large orchards are recorded at all.

Stewardship and Agricultural Payments

In the area being considered, it has been reported that no orchard(s) are part of a Stewardship scheme. In terms of orchard sites where an agricultural subsidy is being claimed, the survey found no orchard(s) were registered within the Integrated Administration and Control System (IACS) which relates to EU agricultural payments. This figure is probably an under-representation as there is some incentive to classify the land as other than an orchard.

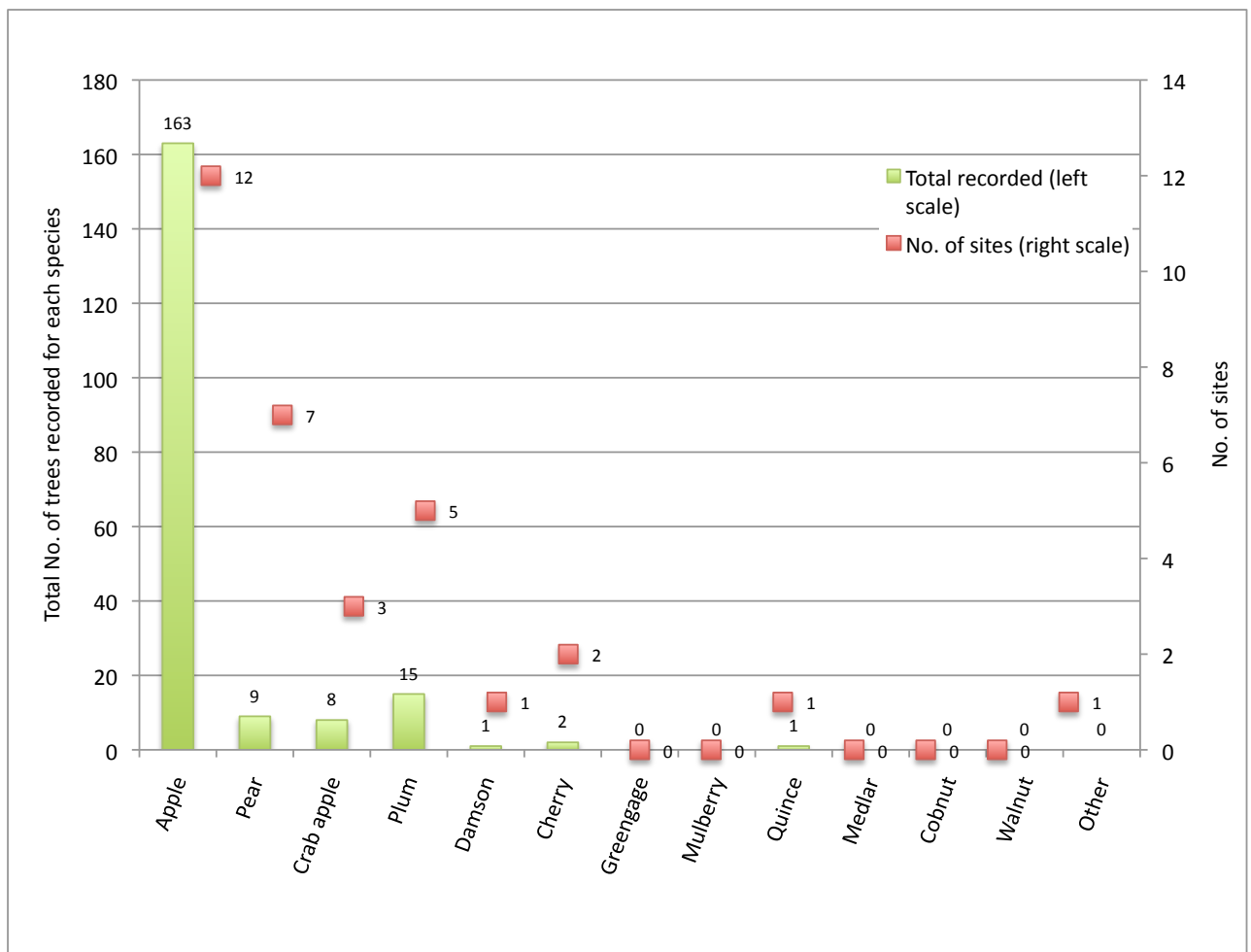


Figure 6 Fruit Species Recorded in the Orchards

A broad range of top fruit species were recorded to gain a full picture of fruit produced. The green columns (left scale) represents the total number of trees recorded for each species in the area being considered. The red markers (right scale) represent the number of orchards in which that data was collected. In some cases it was not possible to determine numbers for individual species in an orchard, so the total number of sites surveyed is likely to be greater than the maximum number of sites recorded here.

The total number of individual trees recorded in the survey was 199. We also recorded a size range for each orchard. An estimate of the total number of trees from this size range data is 213. This demonstrates reasonable agreement, given that number of individual trees is not always recorded in every orchard.

The graph tells the story of this area. The apple dominates in the orchards recorded as part of this survey, but is only present in around half of the sites surveyed. Plums, pears and crab apple are recorded in the orchards but at low numbers. There are few if any of the more unusual species that are occasionally found in orchards.

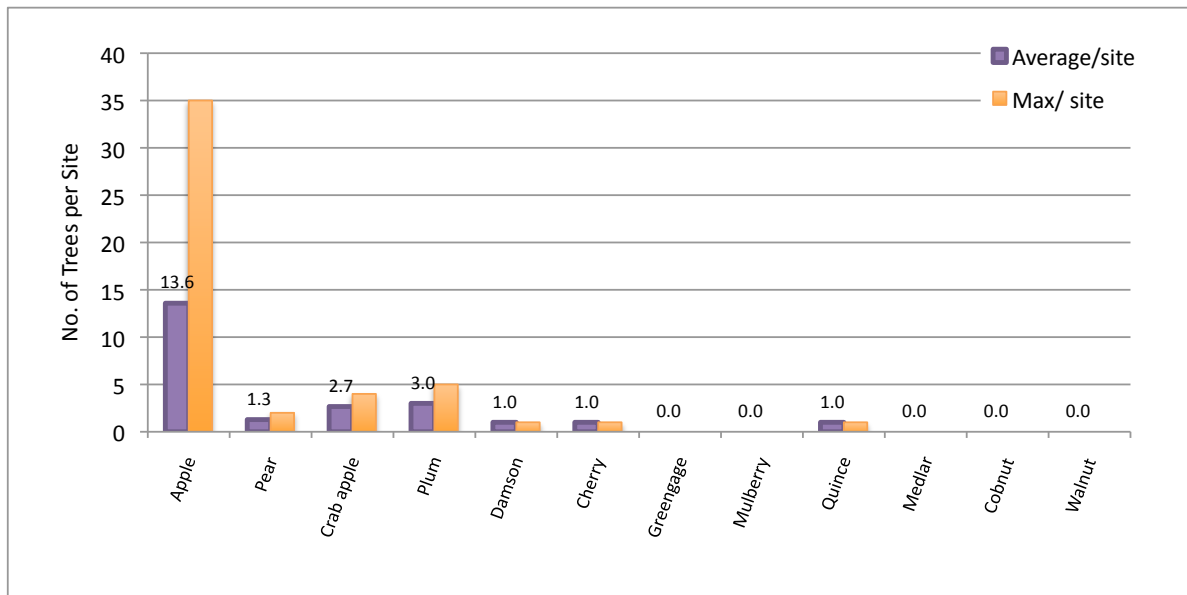


Figure 7 Average and Maximum No. of Fruit Trees per Orchard

The graph above represents the average and maximum number of each species in the orchards of the area. It does not represent the typical stocking of an average orchard.

The short purple column on the graph show the average number of each species in the orchards. The taller orange columns show the maximum number of a species found in any orchard in the area.

The maximum number of trees of particular species in any site was found to be 35 for apples, five for plum and two for pear. In the context of the whole of Scotland, these figures are very low. In terms of the average number, 13 apples in an orchard is a more typical number, though the other species are lower. These figures underline the domestic setting of the majority of orchards in this area.

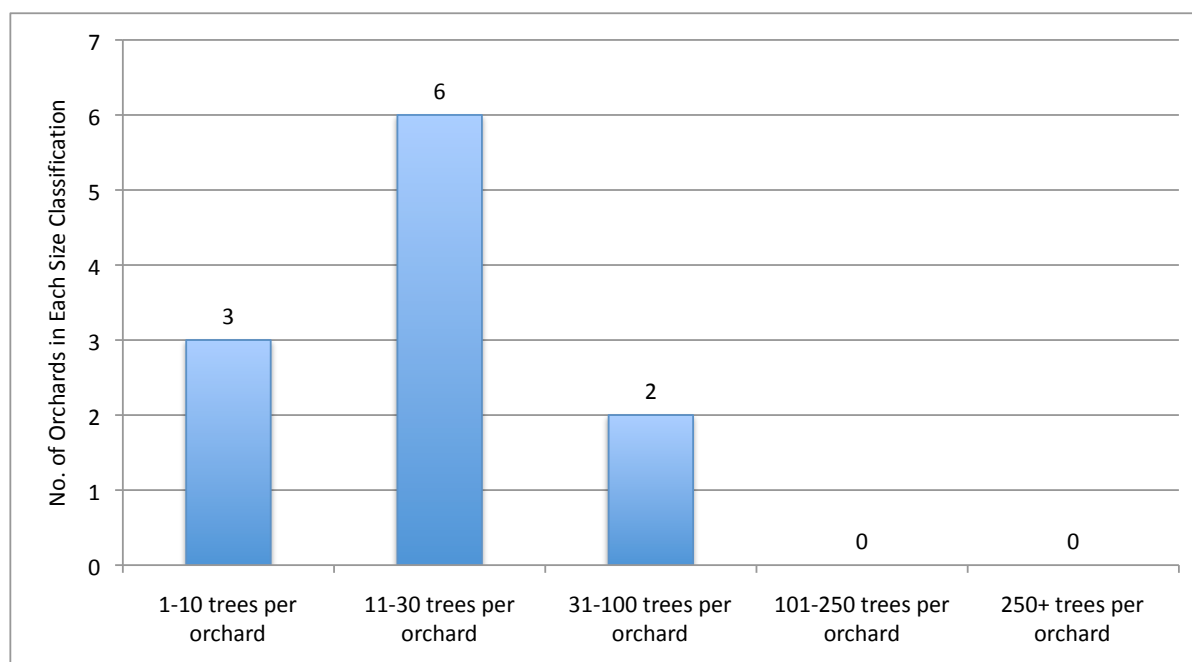


Figure 8 No. of Orchards by Size Classification

As well as asking how many individuals of each species of tree were present, we also wanted a general sense of the size of an orchard, and therefore size range classification was recorded, as shown in the graph above.

Data was not recorded for all the sites that were surveyed. From the data we have, the graph shows that vast majority of orchards had 30 fruit trees or less. No orchards have more than 100 trees which we consider to be a commercial size. There is a lower number of large orchards than many other parts of Scotland.

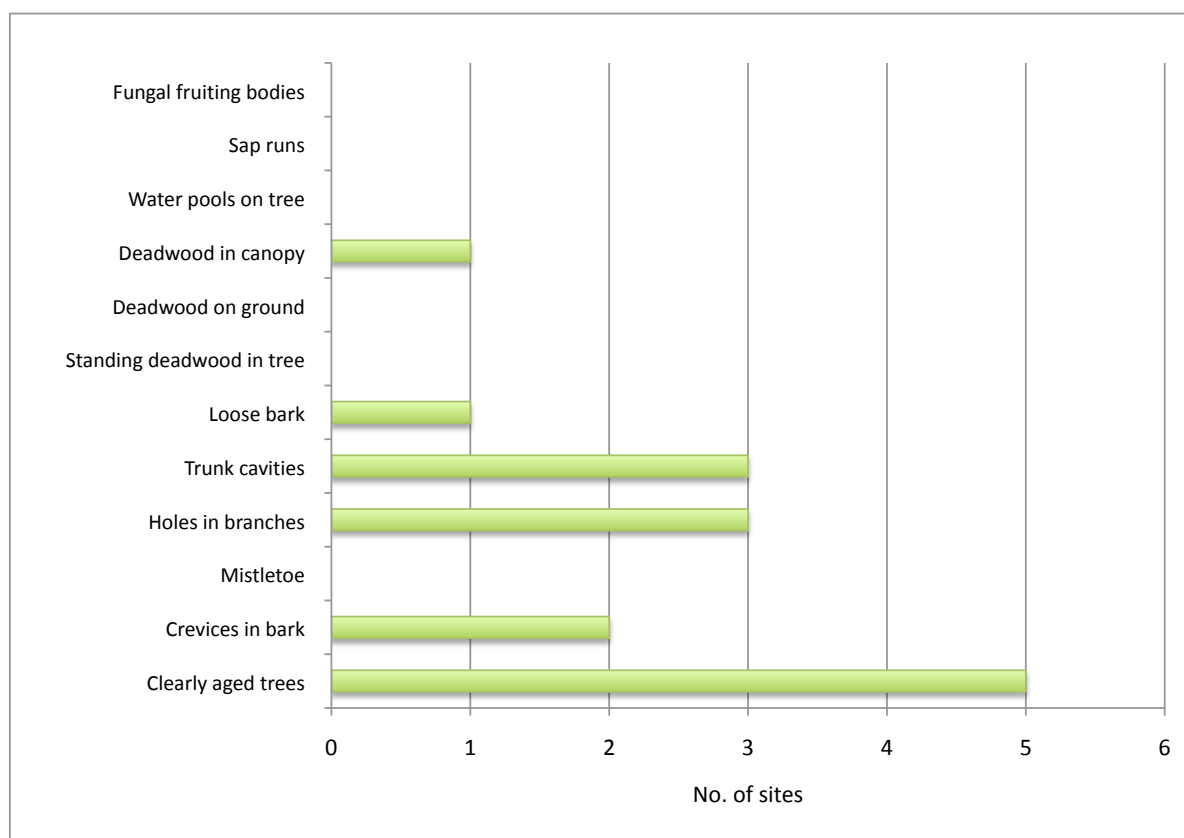


Figure 9 Veteran Tree Features in Orchards

Veteran tree features are used as biodiversity indicators. Therefore the more veteran tree features present, the higher the likely biodiversity in the orchards. There was a total of 15 veteran tree features recorded in the orchards in this area. This demonstrates significant biodiversity.

Its useful to assess how mature the trees in an orchard are. We consider trees over around 50 years old to be mature. Mature trees of older varieties generally are more established in terms of their steady yield. However, there is also potential for more disease. A further dimension is that orchards with mature trees have greater biodiversity potential.

The average proportion of older trees for the orchards was 0.2%. This figure was calculated from the 10 sites where data was recorded. There will however be a great variability with some orchards being entirely mature, and some being entirely young.

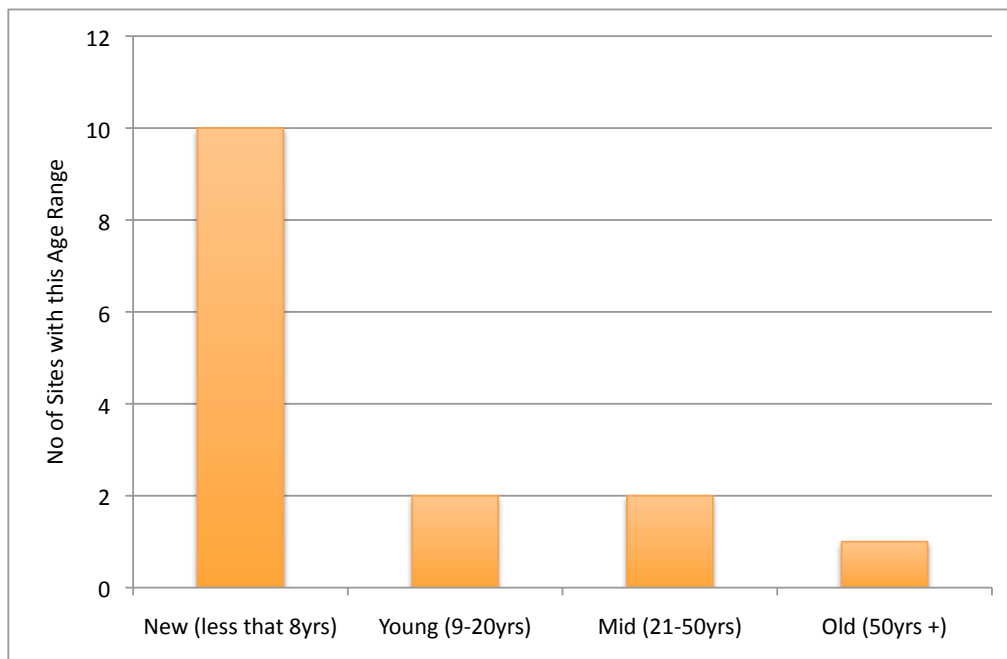


Figure 10 Age Range of Trees in the Orchards

The age of trees contained in each orchard was recorded. Ages were grouped into 4 categories to simplify the assessment in the field.

Each orchard may contain a number or all the age ranges reflecting the plantings over the years. Predominantly old trees indicates a mature collection of orchards. If no new or young plantings are recorded in an area, this indicates that the presence of orchards in the area is potentially threatened.

The graph above shows that the age profile is heavily skewed to the new plantings of fruit trees. Very few orchards have mature trees, and this corresponds to a low level of biodiversity indicators shown in the previous slide. The scarcity of mature trees is unusual in the national context.

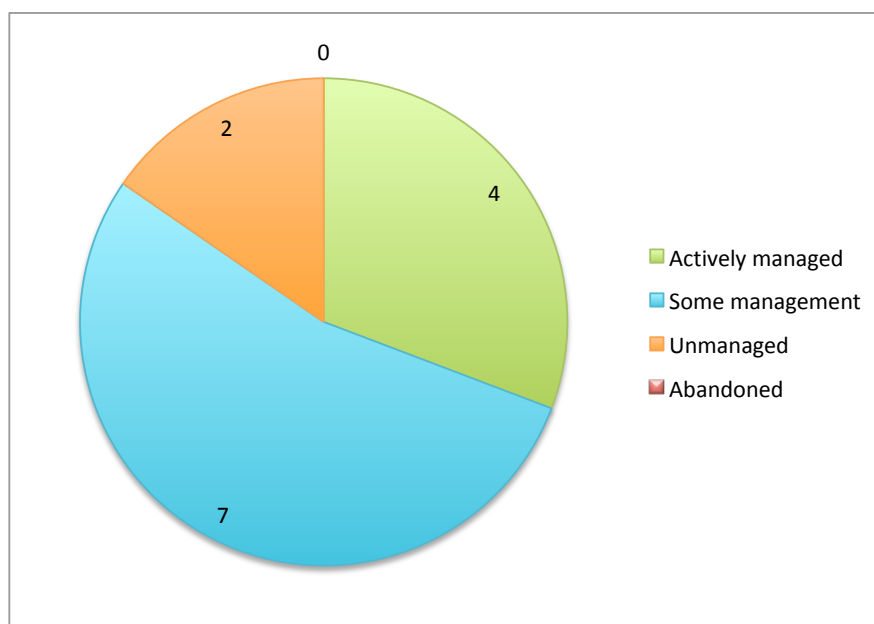


Figure 11 To What Extent is the Orchard Maintained?

The extent of orchard management is given above. A total of 13 sites have data recorded for them. The figures in the chart are the number of orchards determined to be in each particular category.

The graph shows that most orchards have some or active management. This demonstrates higher levels of orchard management than are found in many parts of Scotland.

High proportions of abandoned and unmanaged orchards are an indication that there needs to be a local focus on raising awareness on maintenance issues. Maintenance skills project are also a popular way of building capacity locally.

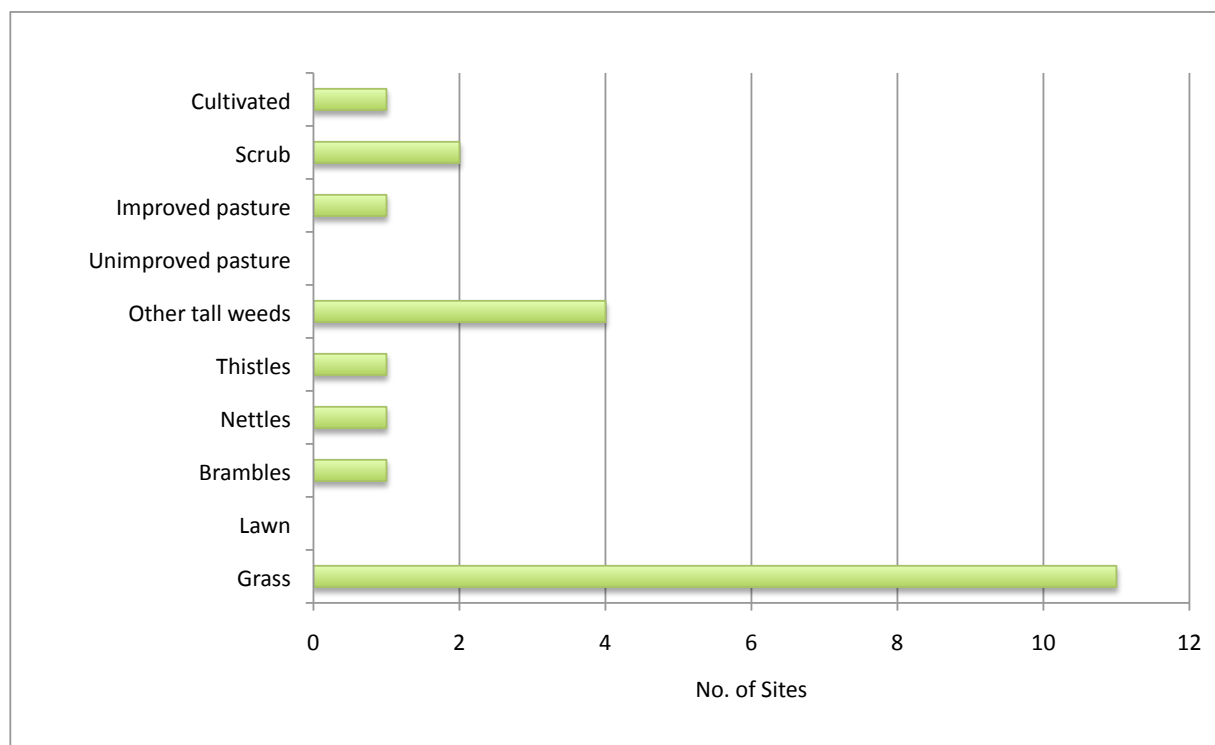


Figure 12 What is the vegetation on orchard floor?

The orchard floor is an important part of the orchard habitat, both for biodiversity but also as a further element of the growing space. The generic term used across various habitats, is the 'field layer'.

Each site may have several field layer types, for example parts of it may be mown into a lawn while other parts are unimproved pasture with thistles. We are also interested in orchards that are cultivated as this was a practice that was once much more common.

The graphs shows that though many orchards have some sort of managed grass as a field layer, there are others that have various tall weeds and scrub.

There was only one orchard that was also cultivated showing a more complex use of the land.

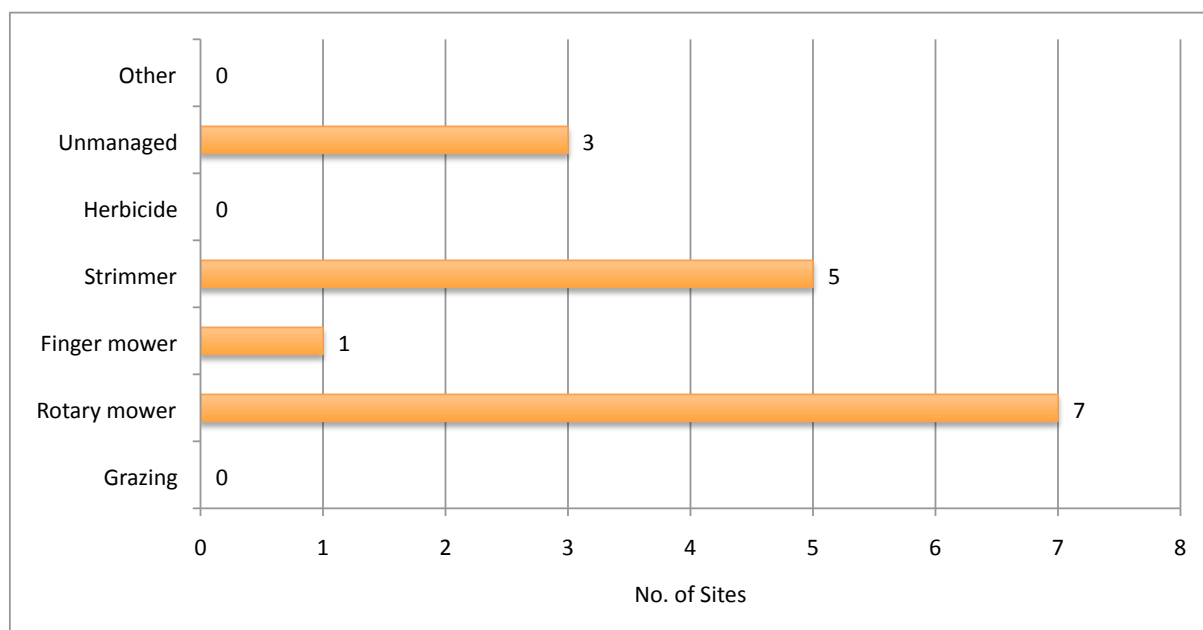


Figure 13 How is the orchard floor managed?

Each orchard can record more than one method for managing the orchard floor. The reference to the finger mower may be unfamiliar. This is a type mower that has a flat cutter bar like a hedge trimmer. The reason for recording this separately is that there is some evidence that this sort of mower does far less damage to invertebrate life in the sward than a rotary mower, which tends to suck up and eviscerate the sward contents.

In our experience herbicide use is under-reported by orchard keepers.

Unsurprisingly, the graph shows that the common method of management is by rotary mower. However, the number of strimmer managed sites comes second, with unmanaged field layer coming third.

The 'Other' classification is mainly made up of sites where mulch matting, or other mulch such as bark chips are used around the trees.

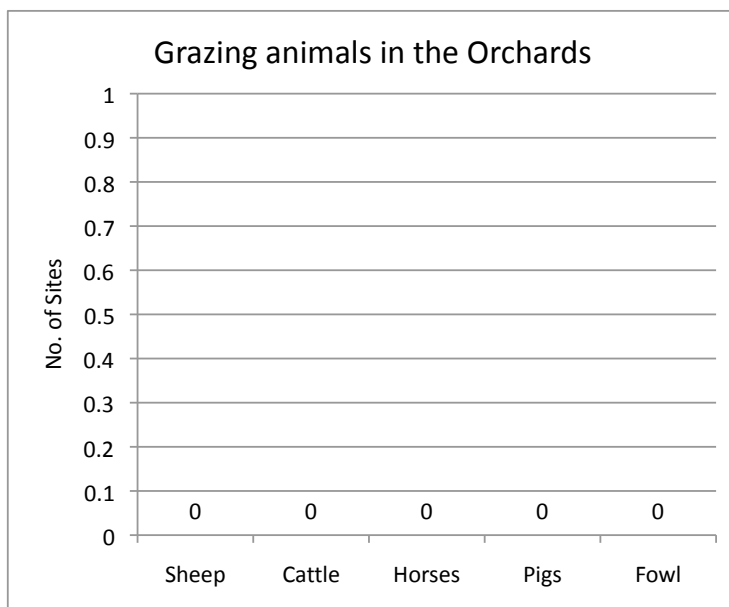


Figure 14 Grazing animals in the orchards

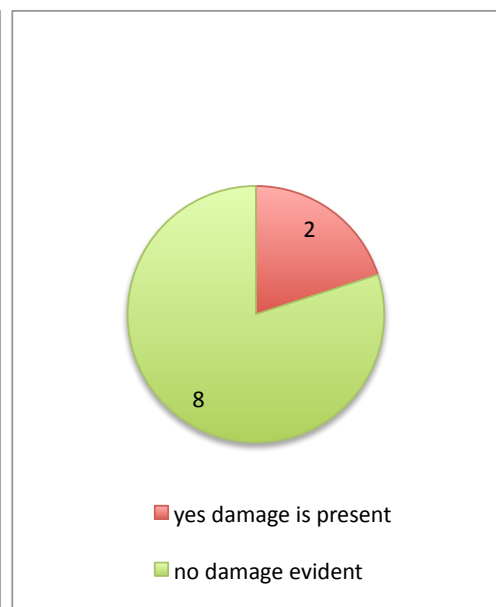


Figure 15 Herbivore damage present?

Each orchard can record more than one type of animal grazing the orchard floor.

The graph shows that no domestic animals were recorded as grazing the orchard floor. This is unusual in the national context.

The pie chart shows that where recorded, herbivore damage is evident on couple of sites. Herbivore damage could be due to deer or rabbits.

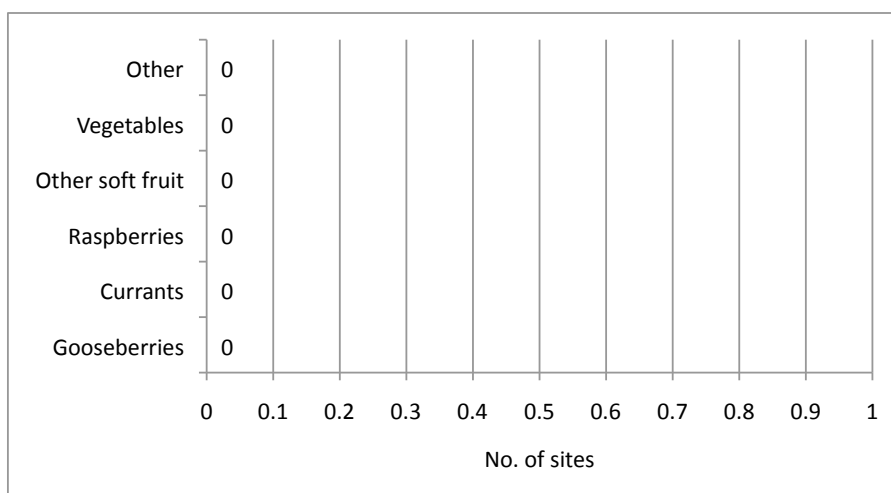


Figure 16 What undercrops are grown?

The growing of other crops within an orchard – known as undercrops - was formerly a much more common practice than it is today. Each orchard can have more than one type of undercrop recorded.

The graph shows that no undercrops were recorded on the orchard floor. This is unusual in the national context.

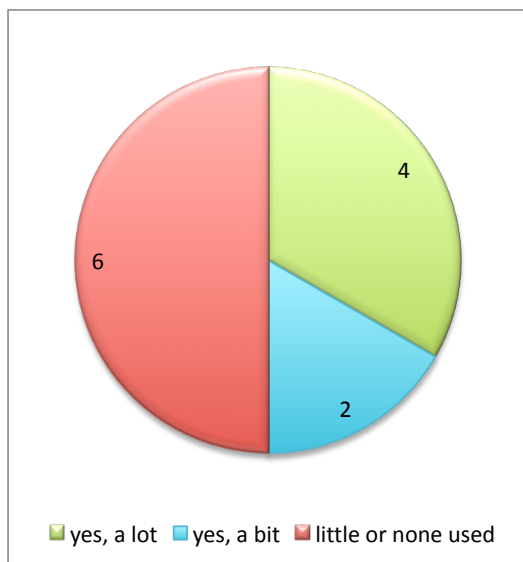


Figure 17 Use of fruit

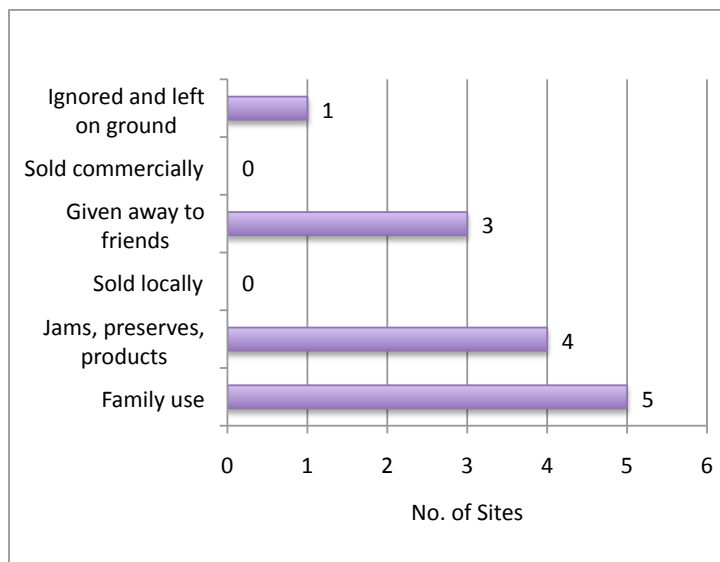


Figure 18 How is the fruit used ?

The use of fruit was determined for 12 sites. Though the categories in the pie chart are fairly broad, they do give a clear indication of the proportion of orchards that are well harvested. It also gives an indication of the scale of the unused local resource.

The chart shows that around half of orchards report that they use little or no fruit. Around a third use their fruit a lot. This is a lower level of use than is found in much of the rest of Scotland.

The bar graph (above right) provides detail on how fruit is used. An individual orchard can record multiple uses. So while the family may use some, they may also leave unused fruit on the ground.

The graph shows that family use, followed by jam, preserves, products and then by giving the fruit away was most common. No orchards sell their fruit locally, and none sell commercially.

7. ANECDOTAL AND COMMENT INFORMATION

A qualitative data summary for North Ayrshire

7.1 Introduction

Anecdotes and comments add a lot of colour to the survey of orchard sites. They are more valuable than they may first appear because they help interpret individual sites and whole areas in relation to their orchards. They also form an important record of local oral history that may not be recorded elsewhere; this may be about the family and its own orchard, or it may be about the characteristics, history and purpose of orchards in the area, and how this formed a part of its economic and cultural heritage.

7.2 Structure and Presentation

Guidance and training for the field survey work encouraged the collection of anecdotal history, comments, pertinent information relating to the orchard being considered. This was written up on the survey form and submitted to us in that way.

The data presented below are a selected summary, representing what we consider to be the most interesting aspects of the qualitative data collected. We have identified emergent themes from these data and have categorised them accordingly.

The comments have been subject to some editing. Our intention is to maintain them as verbatim as reasonable. The editing has been restricted to typos, spelling and minor changes to assist understanding. We have carried out further editing to comply with data protection. We have therefore also redacted content that would enable an individual person to be identified.

7.3 Anecdotal and Comment Data Categorised by Theme

Surveyor noted a number of sites which were marked as orchards associated with estate homes or castles in the past but have not been used as orchards for a long time. Majority of those sites have been subdivided by development which undoubtedly has contributed to removal of any of the orchard remnants.

"The site is part of a much larger area which formed the grounds of nearby [...] Castle which sits on a hill to the south. The Castle was owned by [a very influential Ayrshire family] and inhabited up to 1780's but which was derelict until a recent refurbishment turning it into a private residence [...]. Many years ago its grounds were sold off including 2 original buildings associated with the Castle. These are at [...] end of a private road to the north of the Castle and it is only recently that new homes have been built along the length of the private road. One of the old properties is called ""The Orchard"" [built 1756 approx ?] and consists of a large old two storey cottage and outbuildings at the end of the private road, together with a large garden area to the north, east and south of the buildings. The garden is the identified survey site and consists of a large grassy area encompassing the buildings with many trees along the north, east and southern boundaries.

I met with the owner who informed me that the whole garden area would have been the orchard and food growing supply area for the Castle in its heyday [apples, plums, and especially vegetables] but that was many, many years ago. Any fruit trees are long gone, certainly not within the last 40 years [habitation period by current owner] - existing fruit trees were rotten and were demolished or fell down. The whole area had been overgrown and untidy but the owner had worked to make it tidy and it was now mostly grass, which was regularly mown. This task has been onerous on the owner and he has planning permission

for a house build in the northern part of the site [1/2 acre] and one on the southern part [1/4 acre] which will cut his owned area substantially. [...]"

NAYR0019

"The identified site is in Kelburn Country Park, an area owned by the 10th Earl of Glasgow and open to the public mostly for leisure and educational purposes.

It consists of a historical walled garden [""The Plaisance"""] with numerous trees, especially one ancient cherry tree with interesting features [crevices, holes sap - see photo], but there are no fruit trees in this area. We are informed by park rangers that there are no fruit trees in the park and there is no knowledge of a previous orchard.

The Old Kitchen Garden [not used since 1970s as such] is now part of the Centre's Riding Centre.

The wider park has an unusual tree [The Weeping Larch - one of Scotland's 100 Heritage Trees].

In summary, an interesting set of gardens, trees etc but no orchard present"

NAYR0009

"The identified site consists of trees on either side of a side road [...]. The trees are well established and, apart from a couple of smaller ones, are at least 30 feet high and some are at least 100 ft. There are approx 11 trees on the right side of the access road consisting of holly, beech, fir and elm plus others. One of these [approx 100 ft] had extremely unusual markings [climbing branches]. [...]"

On the left side of the road, there are approx 15 trees to the end of the access road before the driveway split with a mix of beech, elm, fir and holly in various sizes, conditions etc. None of the trees viewed are fruit trees and discussion with the elderly occupants of [...] [one of the houses off the access road] confirmed that there were no fruit trees in the vicinity nor had there been to their knowledge. The area is believed to have orchards historically but none exist in this location."

NAYR0011

"The identified site is in the grounds of [...] a mansion-type house built approx 1806, by an established aristocratic family who had created a large garden which included many varieties of trees and plants. Over the years, owners have divided the property into smaller lots which have been sold off and developed [houses, gardens] individually.

[...] I was accompanied by the owner and traversed the whole area shown on the site template and found a huge variety of trees of varying sizes and ages, all seeming to be well established. None were fruit trees [some holly, elm but many unidentified] and I was advised by the owner that she was not aware of any fruit trees having been in this particular area.

[...] I was advised by the owner of [the mansion-type house] House of 1 apple tree which she believed to be in the north east corner of her property [diagonally opposite to the identified site template] but it was inaccessible and was believed to be in poor shape with little or no fruit ever seen. This is the only fruit tree known to her on her property although she is aware that there may have been an historic orchard once.

She advised that previous owners planted many unusual and exotic trees during the 19th and early 20th century [previous owners include businessmen involved in the Tennents brewing business in Glasgow] and I viewed a 100 ft Copper Birch in the middle of the grass lawn in front of the main house [photo] which was believed to be over 170 years old. I also noted an Eucalyptus tree from New Zealand [...] and was shown what the owner claimed was a tree grown from a cutting of a Weeping Ash taken from the site of the tomb of Napoleon Bonaparte [apparently confirmed by historical documents held by the owner [...]]. The site is a wonderful selection of trees from a previous generation [possibly including an orchard but cannot be substantiated] but, apart from the hard-to-spot apple tree, it is believed there are no fruit trees to record."

NAYR0012

"Site is to the east of an [estate house], built in 1939 to replace a previous mansion house built in 1902 [...] The current House has now been subdivided into 5 private apartments. I viewed the area, which faces the House and which has extensive tree and woodland habitat. There was no indication of fruit tree presence. As I was leaving the site, I met [a resident] who stated that he had lived in the House for over 12 years and at no time has there been any fruit tree presence - nor is he aware of any previous orchard on this site [...]."

NAYR0006

"The identified site is in the grounds of a domestic house built approx 25 years ago, itself in the grounds of a large historic site which now contains Dalgarnen House Hotel [a country hotel] and Dalgarnen Mill Museum but which once was the home to monks associated with Kilwinning Abbey some 5 miles away.

In the past, the area was home to an orchard but many trees were cut down and now the whole site has many trees but the only 2 fruit trees are associated with the domestic house and its immediate environs. This domestic site is covered in trees, hedges, bushes etc and has some ancient trees [5 or 6], believed to be from the monks' time, but most trees in the house area were planted by the current owners since they moved in some 25 years ago - beech, white hazel, elm, monkey puzzle, flowering cherry [white flowers for apparently for a maximum of 2 weeks annually], rowan etc as well as a large line of Leylandii [hedge]. The owner does not consider the fruit trees to be an orchard [or even part of one] and has no real interest in them but is proud of the historical connection with fruit trees."

NAYR0016

However, a walled garden at one of these subdivided sites has now been regenerated by the current owner and includes a substantial number of young fruit trees:

"Site is what was the orchard within a walled garden for [an estate] house, which was an old residence of a rich local family who owned a sizeable area in all directions from the current survey site. The old house was replaced by a different residence in 1902 and after it burned down the current [house] was built in 1939. About 30 years ago, the whole area was bought by a developer who turned the House into 5 apartments and sold the walled garden site to the present owner to add to her existing property at a [neighbouring] Cottage, which was of the same vintage as the original House.

At that time, the site was unmanaged and in a poor state of health and most of the fruit trees were either dead/gone or required to be cut down - only 1 of the original orchard survived [...]. The owner has worked hard to bring the area back into cultivation and has planted many bushes inside the wall perimeter [e.g. raspberries] most within greenhouses. She has also removed the unmanaged undergrowth within the circular garden and has planted a variety of

apple, pear and plum trees - most in beds of 2 - 4 trees - in a pattern around a central archway. Virtually all of them have been planted within the last 5 years following the major clearing works required for the area.

[...] The owner will continue to develop her garden for fruit growing, especially the berries. She has brought in a Japanese Raspberry Tree within one of the apple beds but it has not produced fruit yet. It is expected she will add to her fruit trees but she has no plans to produce commercially. [...]"

NAYR0005

Surveyor also noted a number of new or mixed age and reasonably well-cared for domestic/family orchards:

Apart from an apple, pear and plum, all the varieties have been planted in the last sixteen years. In a good summer, in this sunny sheltered garden, Beauty of Bath, Discovery, Ribston Pippin and Worcester Pearman all fruit well. The mature Unknown plum fruits very well every two to three years.

NAYR0102

"The site is in a large garden attached to a bungalow built in an area within the [...] House Estate in rural Ayrshire.

I [...] found many of the trees in the lines of established trees had apple crop [...] - there were a variety of states of health with trees looking poor [even though fruit yielding] while others flourished. The impression was that the ground floor [grass] was managed by mower with a small ring of undergrowth below each tree. There was no indication of apples on the ground so perhaps the crop was being gathered frequently.

To the west of these trees was a grassy area and to the south west was a woodland area of established trees [mixed fruit and non-fruit]. In the middle of this area was grassland which contained 2 lines of small apple trees [4 in each line - see photos] which were undoubtedly recent plantings by their size and look. Again, the grass was mown and the individual trees had a ring of undergrowth.

While the site [which is within a walled section of the Estate] looked tidy and looked-after, the impression was given that the trees grow naturally with minimal human assistance."

NAYR0007

There was also an intention to establish at least one new farmhouse orchard:

"Owner says that area marked on map has never had fruit trees - family farm, so he should know! His father planted Sitka there about 30 years ago.

However, there is another area he plans to develop with fruit trees [...]. There are 4 young apple trees, 3 presently in pots, not in ground. [the owner] has sought advice re management."

NAYR0015

A number of new community orchards were recorded, including a school, country park and allotment orchards:

"The site consists of a "u" shaped grass area surrounding mature woodland [scrub, long grass] close to the [Eglington] Country Park Visitor Centre adjacent to a road leading to a new visitors car park.

[...] Trees were planted in one line on the side nearest the Visitor centre while the side facing the new car park [eastern] involved 2 lines of planting. There were obvious fruit trees and I was informed informally by garden staff that care was adequate but felt that the location could have been better chosen re sunlight and lower public access.

[...] My observations were confirmed that the site contained apple trees and crab apple trees and the Ranger confirmed the varieties. This site is used as a Memorial Garden and is open to the public due to its proximity to visitor car parks and attractions. The Ranger believes that its use and condition will be monitored in the coming years and may provide an incentive to add a Community Orchard on the other side of the new car park."

NAYR0021

"[...] It is a rectangular area approx 90 yards by 20 yards to the west of [adjacent to] the children's playpark at the [Eglington] Country Park and which is near to the Visitor Centre and first car park. It was specifically created [believed to be in 2012] as a Community Orchard and consists of 2 lines of new trees along the length of the rectangular area.

The floor of the area is completely grass and it is fenced off with no access to the public.

Trees have been planted approx 5-6 yards apart and all are between 5 and 6 ft in height apart for 2 which are approx 4ft. All are secured to a wooden post and have bark surrounding the base of each tree.

[...] The Senior Ranger is confident of the development of this Community Orchard and expects it to be made more accessible to the public when it becomes more mature. She also wishes to review the whole Park area [which was the grounds of the long demolished Eglington House] and which contains many tree species including fruit trees. It is believed that there may be pockets of fruit trees but it is unlikely that individually these pockets would pass the criteria for being classed as an orchard."

NAYR0100

"[...] allotments managed by Eglington Growers. Allotments are of different sizes and the whole site covers approx 3 acres.

There are 2 community orchards in spare ground between the allotments and a grassy/scrub area to the south of the site - they are side by side.

One is approx 30 ft by 40 ft and has a mowed/managed grass floor. It contains 6 rows of trees [all less than 9 ft high] with each tree attached to pole [4-6ft] and some with name tags but most without. Total approx 30 trees, some with fruit.

The other is approx 30ft by 20ft and had an unmanaged, long grass/overgrown floor. It contains 10 trees in more irregular spacing [all trees less than 9ft and tied to poles] with few name tags.

[...] 2 community orchards with a total of approx 35+ fruit trees, all of which seem to have been planted some 2 or 3 years ago, meaning that these orchards are not yet established. It is rumoured that there has been limited fruit so far but it is expected to expand in the coming years so should be encouraged [despite the apparent lack of co-operation]"

NAYR0101

"Trees are planted within school grounds, part of wildlife garden. Grass left long just now, will be cut down in spring.

Used in school - tastings for pupils, used in canteen for school meals - apple crumbles."

NAYR0022

However, none of council-managed public sites identified as potential orchards in the desk study were planted with fruit trees - at least for some sites it was due to concerns about vandalism:

"The site identified fairly recently planted trees in a grassy area [park/open space] within an urban area behind Kilwinning Library.]

There were 2 distinct areas within the site. One consisted of a line of 4 trees planted in a line on a Council-managed grass area beyond the through-route public path - these were small with reddish-purple leaves [from dark green] but none of these were fruit trees. It is believed the planting took place less than 8 years ago. The second consisted of a larger unmanaged area to the south of that tree line on the other side of the path - these included approx 25 more established trees, the majority being rowan [many with berries] but other varieties existed. It was believed that these trees were possibly between 20 and 30 years old and the floor consisted of scrub, nettles, blackcurrant bushes, bramble etc to a distance of between 6 and 12 feet from the trees trunks. Outside the unmanaged undergrowth, the park/open space consisted of mowed grassland.

This is public parkland and the local authority does not consider this site as (a) an orchard and (b) an area with potential for a community orchard, given its urban location and easy access to the community, especially anti-social elements."

NAYR0017

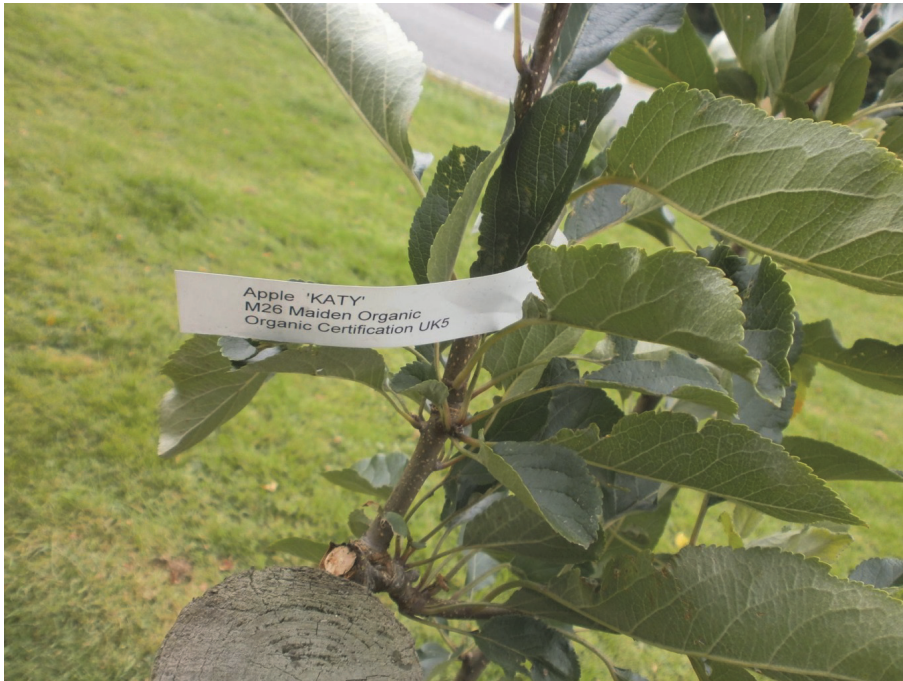
8. CONCLUSIONS

The results presented above, and also in the following photographic record, lead to the following conclusions:

- A total of 25 orchard sites were surveyed, of these 10 were found to be intact orchards.
- The total acreage of orchards remaining in this area was found to be 1.6 ha and the average area of each orchard was 0.2 ha.
- Most of the orchards contain less than 30 trees and are in a domestic setting. No large orchards of commercial size are recorded.
- Though apple dominates, some orchards contain a mixture of the other fruit species, reflecting their domestic use.
- The tree stock contains trees of predominantly young age; very few mature trees were recorded.
- Veteran tree features indicate few orchards contain high levels of biodiversity. The majority of orchards have some or active management, and this is at a higher rate than typically found elsewhere in Scotland.
- Undercrops of fruit and vegetables were not recorded at all. This is unusual in Scotland. Most fruit is used for family and friends, some is left to waste but none is sold commercially. No domestic livestock are found in these orchards.
- The tree stock profile that is skewed towards younger trees, with very little in the way of mature orchards being recorded outside the larger country houses.
- The qualitative data as given in the anecdotal and comment section shows that this area has lost its previous well established orchards, many of these formerly being present on the large estates. Some of the cultural heritage remains, but is in danger of being lost.

To conclude, North Ayrshire contains a small number of small orchards, most of which are quite actively managed and from which the fruit is used within the domestic setting. There are no large or commercial sized orchards which sell their fruit. These appear to have been lost entirely. In these respects North Ayrshire is not typical of the national picture for orchards.

ANNEX 1: PHOTOGRAPHS



Photograph 01. A newly planted apple tree in a small memorial garden containing fruit trees, at the Eglington Country Park.



Photograph 02. A community orchard at Eglington Country Park. It is currently enclosed with a fence to protect it from vandalism but will be made more open to the public as it matures.



Photograph 03. A newly planted small walled garden orchard of apple trees.



Photograph 04. One of the two young community orchards on an allotment site managed by Eglington growers.



Photograph 05. One of the new plantings of trees in council-managed areas. None of the potential sites were confirmed as an orchard.



Photograph 06. A site of a historic orchard which is now part of a garden of a house built 25 years ago. Sadly only a couple of fruit trees remain.



Photograph 07. Mature apple trees in a garden orchard.



Photograph 08. Newly planted trees in a garden orchard.



Photograph 09. A site of an historic orchard at an estate home, now a mature landscaped garden. There has been no orchard on the site for a long time.



Photograph 10. An ancient cherry tree at Kelburn House. Its gardens are well kept but there is no orchard.



Photograph 11. A well landscaped domestic garden with a good number of newly planted mixed fruit trees - here you can see some lovely step over apples edging a bed with further young trees planted within.



Photograph 12.



Photograph 13. An old neglected walled garden site, including an orchard, regenerated by the new owner.



Photograph 14. New apple tree espaliers in an old walled garden.



Photograph 15. A site of a previous walled estate orchard, now a wooded park area surrounding an estate house subdivided into flats.



Photograph 16. A new medium mixed family orchard planted in farmland.

ANNEX 2: METHODOLOGY

A2.1 Methodology for GIS desk study

The following methodology was implemented for the desk study.

GIS system: MapInfo Professional v11.5 software with Data Capture Tool Identifying locations; Various sources of data to determine orchard locations:

- Visual search of aerial and historic mapping.
- Existing survey data. Sites listed in existing surveys are reassessed.
- Additional existing datasets:
 - The OS MasterMap 'Orchard' attribute.
 - RCAHMS-Historic Land-use Assessment database Regional orchard projects datasets
 - National Trust for Scotland Demeter Plants Database Agricultural Census, historic data (not site specific)
 - Dunn 1885 Apple Congress report (time constraints meant that only a few sites from this marvellous tome were considered)
 - Other publically available datasets, such as community orchard listings.

A more detailed description of the desk study methodology and its results are published in reports for Scotland as a whole. These are available at www.scotlandthefruit.org.uk

A2.2 Methodology for field verification

The implementation of field verification is structured as follows:

- Fieldwork is devolved to a local collaborating organisation. Ideally this is a competent local not-for-profit organisation with a track record demonstrating ability to organise and deliver locally.
- Local Facilitator. The local collaborating organisation employs or contracts a person, the Local Facilitator, to be the local interface and organiser of volunteer surveyors. This has been a paid role.
- Recruitment of surveyors. The local organisation uses various channels to recruit volunteer surveyors. The channels include local press, presence at events, membership lists, other organisations, and formal & informal networks.
- Resources are provided by the National Coordinator (in this case Crispin Hayes Associates). Site specific resources such as site location maps and candidate site lists are shared via cloud services with the Local Facilitator. Other generic material is distributed via www.scotlandthefruit.org.uk which is used as the project website. This includes the web forms used to record survey data.
- Allocation. The Local Facilitator allocates sites to volunteers, and manages their progress, ensures instructions including the risk assessment are understood.
- Mentoring. Some volunteer surveyors are very competent at all aspects. Others require a little mentoring. The Local Facilitator carries out this role, if necessary taking the volunteer on a training site visit.
- Survey Data. The Local Facilitator ensures that survey data is submitted together with photos, and that all files are identified with the site unique identification. Quality checks are also carried out, and queries referred to volunteers.
- Data processing. Further quality checks are carried out on the data, and corrections made, if necessary with reference to the Local Facilitator and the volunteer surveyor.

- Merging. The field verification data is added to the desk study data for each site via the Geographical Information System and other database tools.
- Amendments and snagging. Revision of site boundary and other desk study details are carried out on a site by site basis. Snagging is carried out as required.
- Output. Further work may be required: for example redacting personal data fields, and extracting some site subsets, before the finalised dataset is output.

A2.3 Field verification time input statistics for this area

Some statistics were recorded on the time input of various aspects of the Field Verification.

Time-on-site is reported on each survey form by the surveyor. The average time on site in this area was 48 mins. The maximum time on site was reported as 120 mins, while the minimum was 10 mins.

In North Ayrshire, the total time-on-site was recorded as 20 hours. This does not include preparation or travel time, just the time on site.

The time to fill in the survey web form is recorded automatically by the forms service. It shows that on average it took 30 mins to complete a submission in this area.

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