A National Orchard Inventory for Scotland: Field Verification of Orchards

Instructions to Surveyors   v3b

Thanks for volunteering to be part of this great project whose ambition is to take a national snapshot of our orchards across Scotland.

The field verification is carried out area by area in partnership with local organisations. Your Local Facilitator and their organisation is your first point of contact. Contacts are shown on www.scotlandthefruit.org

In terms of the wider national project, the project is being run by CW Hayes Associates in partnership with other organisations including Scottish Natural Heritage, People's Trust for Endangered Species, Forth Environment Link and Orchard Research & Enterprise CIC.

1   How many trees makes an orchard ?

For the purpose of this work we are defining an orchard as five or more fruit trees that are within 20m apart from crown edge to crown edge.

2   Which Orchards and where to go

Your Local Facilitator will allocate you a number of orchards to visit. You can do fewer or more depending how you get on.
For each candidate orchard site, you will be sent a Location Map via email. At the bottom corner of this map, the Grid ref is given along with the approximate location in reference to a local town or village. If necessary use a regular OS map to check how to get there.

Before setting out for the day, take some time to study the maps and identify where there are access points such as entrance drives, public footpaths or rights of way.
Planning a route prior to departure will save you both time and effort.
If at any time whilst surveying, you feel uncomfortable or if you encounter an unsympathetic orchard owner do not hesitate to move on to the next site. Always feel free to pass on the Local Facilitator contact details – as per the Letter of Introduction - to anybody that would like further information or clarification about the project.

3   What to Take and How to Prepare

Fieldwork can be accomplished safely if a few important steps are taken:
> **a.** Be prepared. Know where you are going. Look at a weather forecast. Plan accordingly. Consider contingency should your plans be altered.
> **b.** Understand the likely hazards, risks arising from them, and how to control those risks. We have provided a Risk Assessment to help you do this. Ensure you have read and understand it. Refer any queries to your Local Facilitator. Health & Safety should be your first priority in carrying out this survey work.
> **c.** Equip yourself appropriately; protective clothing, survey materials, food, communications.

Suggested equipment & materials to take:
- Location map for each orchard as provided by us. Suggest that this is printed out.
- OS Explorer or Landranger map of the area so you can locate yourself more broadly. Do not rely on satnav !
- Tape measure (5m or 8m best)
- Digital camera (check that the date and time are correctly set) If it has GPS tagging, switch it on.
- GPS unit (optional)
- Mobile phone or other communications device in case of emergency.
- Printout; several copies of Letter of Introduction to show/give Keepers you are visiting
- Printout of Field Guides, Risk Assessment, these Survey Instructions for you to refer to when on site.
- Pens/Pencil (Pencils still write in damp conditions)
- Waterproof bag for paperwork/kit
- Survey form: either paper printouts or on laptop/tablet.

Suggested Personal protective clothing
- Walking boots or similar with good tread
- Waterproofs
- High visibility clothing or overvest. Contact us if you do not have these. We can provide.

The other important tool in the surveyor's kit is Behaviour & Attitude. Having a positive and measured Attitude together with appropriate Behaviour will engender trust and co-operation in most people you visit.

Good luck & we hope you enjoy the fieldwork.

4   Entering the Site

4.1   Our Principle: Survey by Consent
We want to conduct all survey work by consent, and specifically the consent of the orchard site owner.
So do NOT assume any rights of access in connection with this survey work.

4.2   How to Start
Getting onto the site depends on its context in the landscape. If the orchard stands on its own, away from houses & buildings, and is beside a road or footpath, then it may be possible to conduct the survey without speaking to the orchard keeper. However in most cases it is best to approach the keeper – who will in many cases be the owner – and engage with them about the project. A richer data set will result.

Having determined from the Location Map where the site is in the context of the wider property, enter the site via the main entrance, and approach the house or farm office. Introduce yourself and the project, and offer the Letter of Introduction.
Ask for their help in doing the survey form. Ask if you can go into the orchard to see it, and to take a photo.

In the unlikely event of refusal, please **be polite in withdrawing**. We want to remain on good terms with all parties. Advise your Local Facilitator, who will then make contact with them.

4.3   What happens if the keeper says that no orchard exists at the site ?
Sometimes a keeper says there is no orchard remaining on the site, even when it does. Possible reasons are that the keeper may have unvoiced concerns about the visit, or embarrassment about

the condition of the trees or other reasons on this sort. This is not unusual. Alternatively, the orchard may have been declined to the point that it no longer exists. In both cases, it is useful to ask to see the site in order that you can record its current condition, and authenticate its loss as an orchard, including a site photo. If no orchard exists, then note what exists on the site now in the Comments on the final page of the form; also complete Question 1, 2 and any other relevant questions such as Orchard Floor or Misc Details.

5 Filling the Survey Form

The survey form is a series of questions and tick boxes which should take approximately 15 minutes to complete once you have arrived at the site. If you have the opportunity to walk around the site and take photos, this will take additional time, but will result in a better quality of data. The following pages will help explain the survey form in more detail.

Identification
Identification details for the site – this is the 8 digit unique identification eg. BORD0128.
Your group is the name of the local collaborating organisation. You can use an abbreviation agreed with your Local Facilitator.
Summary: this is an important indicator. Only tick No if there are no fruit trees present. Eg if the site is now an arable field or an industrial site.
Name of orchard keeper - we use the term 'keeper'. This is the person that manages the orchard. In many but not all cases this will be the owner, but it could be a tenant, either formal or informal.
Name of Orchard – if the orchard has a name that is different from the house or property name.

Location Details
Left hand column for the orchard location. Right hand column if the keeper address is different otherwise leave blank.
Email address of keeper so that we can contact them regarding grants/course/events and future initiatives. This will only be shared with the project partners, and will not be passed on to any other parties.
Grid reference - OS 6 or 8 digit reference. It is shown in the lower left corner of the Location Map. If you use a GPS to locate any features of interest, then look at Section 8.1 for some tips on use.
Keeper permission to enter site – ask the keeper whether you can enter the site and look at the trees. Note whether permission is given or refused.

What kind of fruit trees
Tick boxes for all that apply. Give any numbers if known in the box to the right hand side of 'no.' otherwise leave blank.

Known varieties
Keeper knowledge of the varieties is really valuable information – either from tree tags or documents such as layout plans or purchase orders. If documents are available, ask if you can take a photo of them (lay them on a flat surface and take a photo from above it). If a few varieties are known they can be recorded on the form, otherwise use a separate document or photo.

Use of fruit
Its useful to have an indication of how much fruit is used from the orchard, and what happens to it.

Stewardship Details
Whether the site was or is part of a agricultural stewardship scheme is a really useful indication of its overall condition. The second question is about the Integrated Administration and Control System (IACS) which relates to EU agricultural grants; under which every single field that gets a grant, is given a unique Land Parcel Identification System number. It is useful to record these details for the orchard site, although they are only likely to apply if part of an agricultural holding.
Any other comments – use this space for any other information or as an overflow for other

sections. Anecdotes from the keeper provide some great 'colour' for an orchard, so feel free to engage the keeper in this regard.

Orchard Management
This provides some indication of how the orchard is managed. Pruning is a key indicator, and well as fallen trees, presence of scrub and if overgrown.
Chemical sprays. Give details of any sprays that are used in the orchard. The keeper can give this information, but also look for evidence such as bare ground around base of trees.

Type of Orchard Site
What sort of site is the orchard – tick the most appropriate category
This list looks daunting but is basically the sort of site (eg. domestic garden) then subdivided into either rural or urban, then subdivided into mainly cultivated (ie. dug over bare soil) or uncultivated (ie. grass or some other permanent vegetation).
Some sites will be a mixture; use your commonsense to pick the most appropriate.

Are Veteran Fruit Trees Present ?
These features demonstrate whether veteran trees are present. These factors are also very useful biodiversity indicators. Tick any that apply for any trees in the orchard.

Veteran tree features
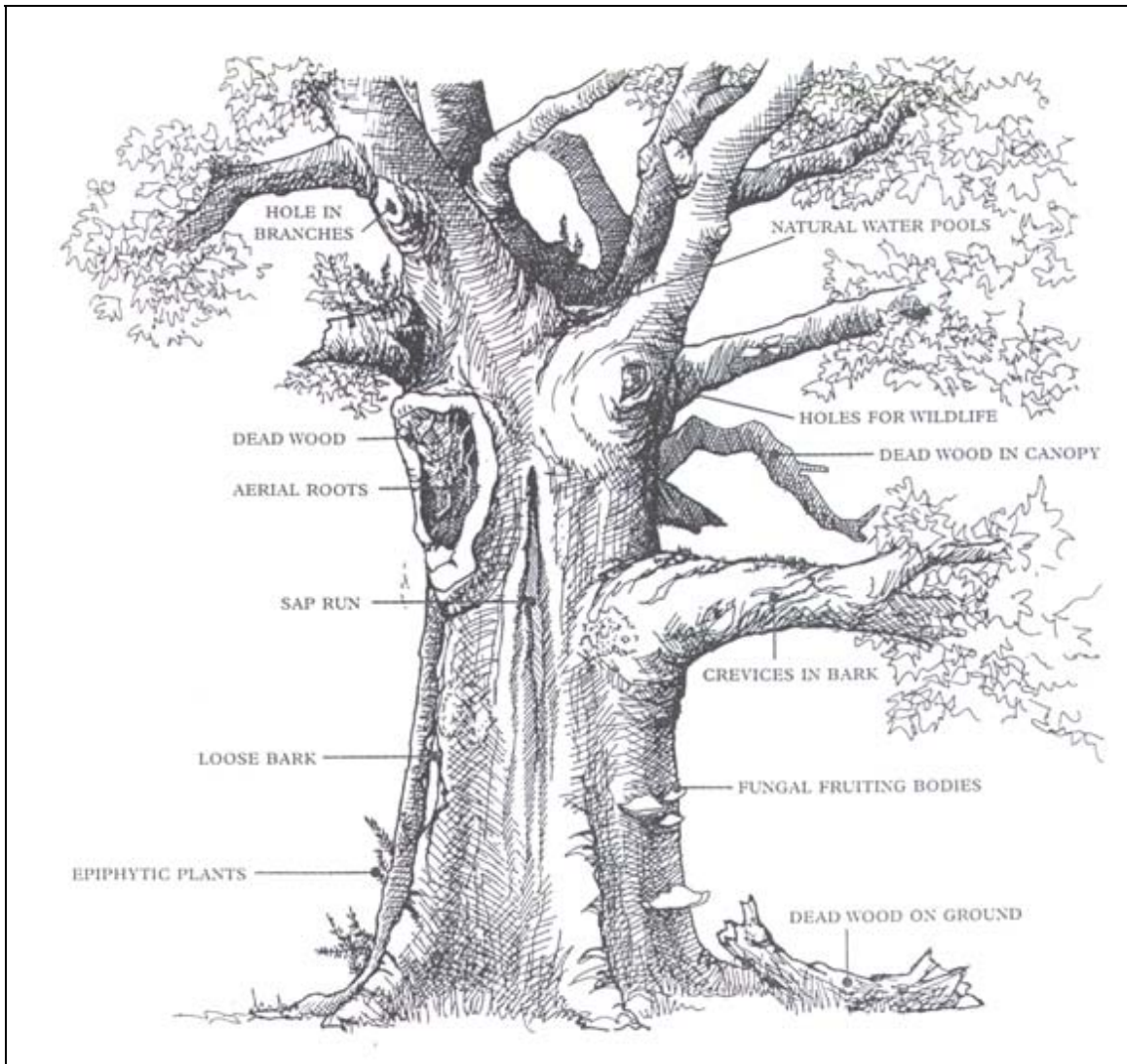
Number & Age of Fruit Trees
Tick the number range. And make a course estimate of the % that are OLDER.

Tick any of the age ranges that apply. If ages are known, for example a significant planting of trees in known year, then this should be entered in the Known Ages box below the tick box ranges.

Size of Trees
Height. Measure or estimate the height. Measure using a stiff tape from the ground. Do not climb the tree. Estimate; if an average adult is around 1.75m then 3 times the adult's height is 5.25m. Other techniques of measuring taller trees can be found at various sources such as
http://www.wikihow.com/Measure-the-Height-of-a-Tree

Remarkable or unusual trees. Across the county it would be great to know if where the really remarkable trees are located. The Ancient Tree Hunt has found many remarkable broadleaf and conifer trees, but orchards have not featured prominently. We would like to record the remarkable individual specimens – if they exist in the orchards that you are surveying. If you find an unusually large (or remarkable in some other way) tree, measure its girth (i.e circumference not diameter) with a tape measure. Do this at breast height (1.3m above the ground), and record it in centimetres along with comments in the Details box. Take a photo(s) of the tree as a whole plus any notable features. Note photo filename in comment box.

Orchard Floor
Tick all the field layer vegetation type that are present.
How is the orchard floor managed – the keeper may be able to provide this information, but also observe the orchard floor. Note anything of interest in the Details box.
Grazed – ask the keeper is livestock grazes the orchard at any time of the year.
Undercrops – this means any other crops that are grown under or between the rows of trees. Undercrops are a traditional practice. Tick any that are applicable and note anything of interest in the Details box.
Neighbouring habitats – these influence the biodiversity of the orchard site itself. Tick any that applicable in the orchard (such as a pond) or at the boundary (such as a hedge or woodland).

Other Comments
If the keeper has regaled you with stories of how their granny planted such and such a tree or other local lore & custom, please record that here. It adds a lot of colour to the history of an orchard.
Put your own comments here as well.
Data Protection
This states how we will use the data collected; to summarise the key issue is "Personal Data"; and this will be shared solely with project partners, and will not be published or passed to third parties. By submitting the form, this data use is agreed to.

Field visit summary
Location map boundaries – check whether they need amending
Photos
Length of visit. Records your input and helps us to plan ongoing work.

Photos & Files
Please take a number of photos:
- A couple of general views of the orchard.
- A couple of shots of fruit trees that represent the average of the orchard.
- Notable individual trees, especially the best veteran trees
- Notable features of trees or other aspects of the orchard.
Privacy; in composing the shot, consider the keeper privacy. Do not take pictures of people unless given permission. Do not pictures of the house or other sensitive subjects unless given

permission. Photos are for project partners only.
Note down which photos you have taken at which orchard site ! It is easy to get mixed up later on.
So best to note photo file names on site. If your camera does GPS tagging – great.

If the keeper has been able to provide you with additional data (eg. planting plan, variety list, historical documents) upload those here as well.

Orchard ID is ESSENTIAL in every photo filename – or we will get in a huge mess at our end !

Guides
Guide sheets have been provided to download off out Inventory Survey webpage to help with various aspects of type of orchard and identification of fruit trees.
Please make use of these to ensure a consistent quality of data collection.

6 Submitting the Survey Information

This is a crucial step in the process. Until the survey forms and photos are returned, we don't have a record of the orchard data that you collected. Because we are handling a lot of forms and photo files, it is vitally important that **all files are named with the Orchard ID**.

This is how to ensure that the returned document & photo files have the unique Orchard ID in their filenames, and are at the start of the name. For the orchard with an unique ID of BORD0110, a returned photo file would be for example BORD0110_DSC789663.jpg   The content of the second part of the file name (DSC etc) is not of interest and can be left up to the surveyor. Every document or photo returned from the surveyor must have an **8 digit unique ID** leading the filename.

How to submit – press the SUBMIT button at the end of the form. Wait until you get the confirmation message.

6.1   Regarding Copyright
While we do not seek to be restrictive about copyright over the data or photos that you submit, we do need to be able use what is submitted in an unrestrictive way. This is potentially an issue particularly with photos.

Therefore:
WE ASSERT THAT THE COPYRIGHT OF THE COMPLETED DATA FORMS IS OWNED BY THE PROJECT PARTNERS JOINTLY.

WE UNDERSTAND THAT BY SUBMITTING PHOTOS AND ANY ADDITIONAL INFORMATION, YOU GIVE PERMISSION FOR THEM TO BE USED BY THE PROJECT PARTNERS IN ANY WAY THEY DEEM APPROPRIATE.
In effect this means, we **jointly hold copyright** on photos and any additional material. Please only submit photos that you are content to be held according to these conditions.

7   You've Found a New Orchard: What to Do

You may find a new orchard – GREAT ! – that's part of your role as a surveyor. Firstly we need to check whether it is known to the project, and it is not already being covered by another surveyor. So this is what to do:

a. Take a grid reference of the orchard, on a map or using a GPS unit.
b. Email your Local Facilitator giving them the grid ref, and a note of a few other details to assist identification (eg. in the field behind *housename*)
c. The Local Facilitator will check whether the site is on our list, and get back to you to let you know if it is a new site. If it is a new site, a new 8 digit Orchard ID will be allocated.
d. You or another surveyor will be allocated the site to survey – let the Local Facilitator know if you would like to survey the site.   You may need to create a Location Map yourself and draw the orchard boundary on it – then scan it or take a photo of the map - and your Local Facilitator with draw the boundaries on the project's mapping system.

8   Appendix

8.1   Notes of Using a GPS unit

Steps to ensure the output of your GPS unit is useable for the Orchard Inventory:
a. Make sure your GPS is set to the British National Grid (known as OSGB36) or Latitude & Longitude (use WGS84). This is fairly straight-forward in the Settings.
b. To ensure a fairly accurate location, you must have WAAS or EGNOS switched on in your unit's settings. If it switched off, the accuracy will be no better that to the nearest 10m.
c. Also for good accuracy, allow the unit to be stationery for 20 or 30 seconds at the location you want to record before you take a reading, and that it has a good 'view' of the sky.

Waymarks and Tracks
While most GPS units can create these, please do not upload these files (eg. .gpx) to the Survey Form unless specifically requested. While they can useful for locating a new orchard site to then create a polygon based on the satellite image, most tracks will contain far to much extraneous material to be useful to the project.