



Traditional Orchard Survey Instructions

For the purpose of this work we are defining an orchard as five or more fruit trees that are no more than 20m apart from crown edge to crown edge.

The survey form is a series of questions and boxes which should take approximately 5-10 minutes to complete once you have arrived at the site. The following pages will help explain the survey form in more detail.

You will be assigned a set of Ordnance Survey maps that will be marked with several potential traditional orchards. Before setting out for the day, take some time to study the maps and identify where there are access points such as public footpaths and 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 an unsympathetic orchard owner approaches you do not hesitate to move on to the next site and always feel free to pass on my contact details to anybody that would like further information or clarification about the project.

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Equipment Check List

Maps
Information packs for land owners / orchard owners
Identification sheets
Survey forms
Pens/pencils
Tape measure
Long handled spoon
Gloves
Camera (optional)

Please also familiarise yourself with the health and safety guidelines provided in your survey pack before embarking on surveying and always let somebody know where you are planning to work. Do not put yourself or others at risk.

Preliminary Survey

The aim of this part of the survey is to gather simple information without the need to enter the site.

Is the orchard still in existence?

First establish if the orchard marked on your map still exists. If it doesn't, fill in numbers 1 – 6 on the survey form. Please make a note of the current land use in the comments section. For example intensive agriculture or development etc.

If it does, continue filling in the survey form for the site by ticking the appropriate boxes. Fill in any other comments you feel may be useful at the end of the form.

Question 1. Site number

This is the number of the orchard as marked on your map and will help us to organise the survey results.

Question 2. Surveyors name

By knowing who has undertaken each survey we will be able to easily contact the surveyor if there are any queries at a later date.

Question 3. Orchard owner contact details.

It will be helpful for future work if the contact details of the orchard owner can be obtained. For example we can contact owners with information about grants or training days in their area or offer them a noble chafer survey.

Question 4. Date

Date that the survey was undertaken.

Question 5. Visibility

This **does not** refer to *access* on to the site but to the *visibility* of the site.

Some sites will be easy to view, some will be only be partially seen from the footpath or road and others may be impossible to see. The level of visibility will affect the level of information that can be gathered.

If the orchard can only be seen partially then tick the limited visibility box and fill in as much information as you can. If the orchard cannot be seen easily then simply fill in numbers 1 - 7 on the survey sheet and move on to the next site.

Question 6. Determination of orchard type

Determination of management is the most important aspect of the survey work. If the orchard still exists and it can be viewed easily and safely, *does it appear to be traditionally managed?*

A summary sheet showing the differences between orchard types is provided in your survey pack together with an information sheet outlining the indicators of orchard management.

The simplest visual indicator of intensive management is the presence of herbicide-treated or cultivated strips / patches along the tree rows or beneath the trees, where the ground is generally bare or with some annual plant re-growth. These bare strips / patches contrast with the permanent grassland of the between-row spaces. You may need to look carefully for signs of chemical use as it may not be as evident at certain times of the year.

Question 7. Orchard and tree management status

By looking at the orchard floor and fruit trees, you can determine how the site is managed.

The way in which the orchard floor is managed will affect the wildlife present. To establish ground floor management look for evidence of animals, machinery, uniform mow lines or chemical use.



Sheep droppings



Evidence of mowing



Evidence of herbicide application

Livestock grazing is ideal if undertaken at the correct intensity with appropriate livestock species. If no animals are present at the time of surveying then please try and identify stock from any droppings visible. In some orchards, however, livestock can have a detrimental impact and animals may cause serious damage to trees. Some nibbling is acceptable but severe damage will affect the life-span of the orchard.



Animal evidence!



Determine if the orchard trees are being managed for example is there evidence of pruned branches, are there piles of cut branches (brash) on the ground or has the orchard become abandoned and overgrown with scrub? It will be useful to refer to the information sheet outlining the indicators of orchard management.



Evidence of pruning



Neglected orchard

Question 8. Tree planting evidence

Maintaining a diverse age structure and ensuring the continued presence of the orchard in the landscape is one of the most important aspects of traditional orchard management.

Determine if the old orchard trees are being replaced when they die. Are there gaps in the orchard with no evidence of new tree planting or are gaps being filled with new trees? Is the orchard fully stocked and there is no need to plant new trees at this time?



Old orchard with new planting in gaps



Old orchard with gaps – no evidence of new planting



Mature orchard with few or no gaps – mostly stocked

Question 9. Tree interest

Are there old fruit trees in the orchard? Are cavities or fallen deadwood visible? Have dead trees (standing deadwood) been retained in the orchard to provide important wildlife habitat?



Examples of deadwood

Question 10. Fruit tree species

If possible identify the species of tree present. A simple fruit tree identification guide is included within your survey pack.

Question 11. Number of old fruit trees

This will provide us with an idea of the extent of decaying wood habitat available to many different species. Larger tree populations might support a wider range of species and large numbers of old trees suggest continuity in the landscape allowing a greater diversity of species to colonise over time.

Estimate how many trees you think are present and tick the corresponding box.

Question 12. Number of other fruit trees

This will provide us with an idea of the ratio of old trees to younger trees in the orchard and to establish if younger trees are available to replace the older ones as they die.

Estimate how many trees you think are present and tick the corresponding box. As before, this doesn't need to be an exact number.

Question 13. Vegetation

The type of vegetation present on the orchard floor can influence diversity. For example, dense scrub cover can be positive for some bird species but may shade out some ground flora species.



Brambles



Nettles



Thistles



Grass

Take each vegetation type individually and estimate the amount present using the DAFOR scale on the following page which provides a rapid assessment of frequency. If it is absent put a cross in the corresponding box.

DAFOR scale

Dominant	The dominant vegetation / species highly visible, usually more than 70% cover
Abundant	Many individuals or patches visible, usually 30-50% cover
Frequent	Several individuals or few patches, cover usually 10-20%
Occasional	A small patch or a few individuals, cover usually around 5-8%
Rare	Single very small patch or individual, cover usually around 1-3%

Nettles = Abundant

Grass = Dominant



Question 14. Orchard site grade

By assessing the condition and age of the fruit trees in the orchard a grade can be given to the site that will provide an indication of suitability for the noble chafer beetle.

A noble chafer site grading sheet has been provided in your surveyors pack.

Comments

In this section add any information that you feel may be useful. Noting the surrounding land use would be helpful, for example arable fields and woodland.

Un-mapped Orchards

Orchards may be encountered that are not marked on your maps. If such an orchard is discovered, please mark it on the map giving it a number and complete a survey form for the site. Please also try to provide a grid reference in the additional comments so that we can easily find where the site is on an OS map.

Orchard owners' questionnaires.

Orchard owner information packs, including an Orchard Owner questionnaire, have been provided. These can be posted through the door of the nearest dwelling or given directly to the orchard owner if they can be identified. When doing this it is important to **write the site number of the orchard in the space provided on the orchard owners' questionnaire** so that we can keep accurate records.

On site survey

Identifying landowners for on site survey

It may take time and effort to identify who owns the orchard. Often the easiest way is to knock on the door of the nearest house and enquire about ownership. Always take someone with you if you are doing this. Alternatively there are information packs which include an Orchard Owner questionnaire in your survey pack which can be posted through the door of the nearest dwelling. When doing this it is important to **write the site number of the orchard in the space provided on the orchard owners' questionnaire.**

If an orchard owner approaches you or is easily identified then explain the aim of the PTES survey and ask if they would allow entry to the orchard to undertake an on-site survey.

The aim of the on-site survey is to gather more detailed information about the orchard sites if the owner's permission has been given.

Questions 1 – 6

Fill in as in preliminary part of survey

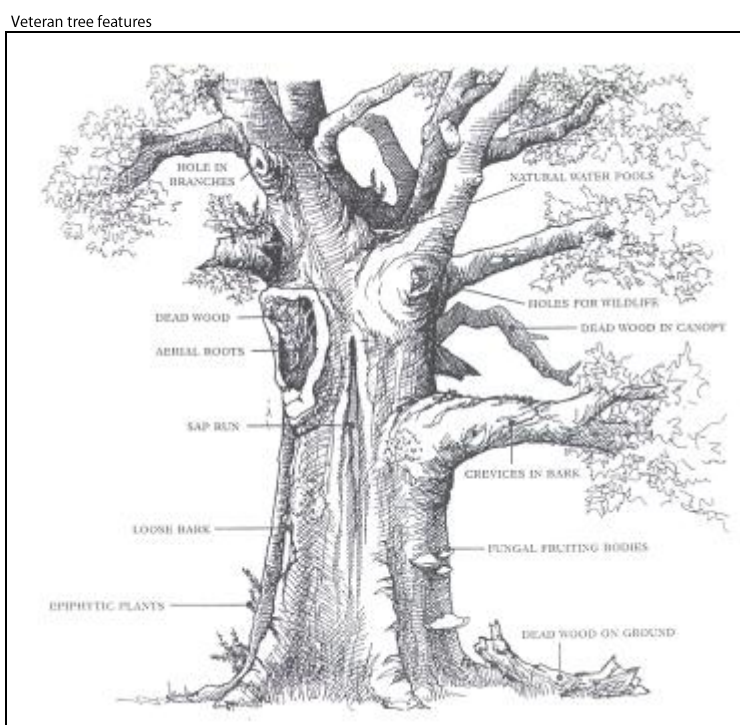
Question 7. Average tree girth

If the trees in the orchard are of different ages and sizes, measure the trunk diameter of one that is typical of the site at breast height or at the highest point before the trunk forks.

The bigger the tree, the more veteran tree features will be present providing a diverse range of habitats for invertebrate species.

Question 8. Veteran tree features

Looking at the trees in the orchard, make a note of any veteran tree features as shown below. These may be from both fruit or non-fruit trees.



Trunk and branch cavities - hollowing occurs through a combination of wounding and decay. An entirely hollow stem or partial shell may result. Hollowing may be easily visible or can be concealed within an apparently intact trunk or limb. Inspect the main trunk to see if there are any large holes and look into the crown of the tree to see if there are smaller diameter holes in branches.

Dead wood on ground - is there any detached fallen deadwood (i.e. major branches or parts of trunk) lying near the tree?

Loose bark and crevices - these provide good habitat for invertebrates and some bat species.

Water pools - look into the forks of accessible branches to see if any pools of water have accumulated. This is good habitat for invertebrates, in particular hoverfly larvae.

Sap runs - resulting from wounds and damage, sap runs provide larval development sites for hoverflies and are also attractive to beetles, butterflies and other invertebrates.

Aerial roots - are roots that grow on the inside of a tree trunk which allow it to recycle nutrients released through the decay process enabling the tree to prolong its life.

Question 9. Noble chafer signs

With your arm, a long handled spoon, or similar such implement reach into any accessible hollows and collect a handful of the wood mould that is inside. Check this wood mould material for noble chafer frass. It may be useful to use a white sheet or piece of paper for this as when shaken the pellets usually come to the surface. See noble chafer identification sheet in your survey pack. If you discover noble chafer larvae please leave them in-situ however **if frass is found please take a small sample and post it to PTES for verification.**



Looking for noble chafer evidence



Noble chafer frass



Noble chafer larvae

Question 10. Other habitats

Have a look around the site to see if there are other important habitats to record. This may include species rich hedgerows, ponds and non-fruit tree species that are likely to increase diversity.

Question 11. Other species

Make a note of any other species that you may encounter such as mistletoe, lichen, butterflies and birds.

Comments

Make a note of anything else that you feel is important and should be noted.

Time Sheet

We need to keep a record of how much time is spent undertaking the surveys and would appreciate it if you could fill in the time sheet that is in your volunteer pack.

On completion

When the orchards on your map have been surveyed, please send your completed survey forms together with your maps and time sheet to the free post address below.

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I hope that you have enjoyed this work. If you would like to do some more surveys then I will be delighted to send you another set of maps. Either call or email me and I will send some more.

**Once again, thank you very much for you time in helping PTES and
the traditional orchard habitat!**