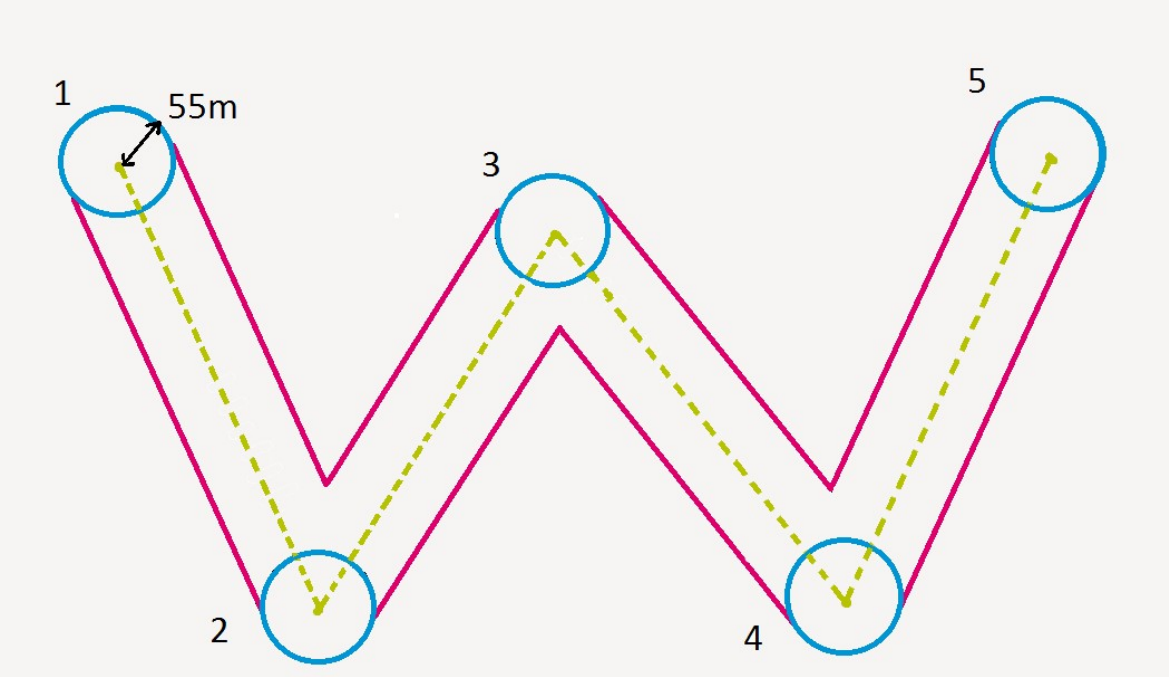
Instruction sheet for wood pasture and parkland field survey

people's trust for endangered species

The survey has 4 sections, each with different methodology.
The instructions below will give more detailed advice as to how to complete each section, but generally:

- **Section A -** Site details (may be already filled in upon site allocation) and surveyor details
- **Section B -** On site assessment. This information can be gathered at any point during your survey.
- **Section C** - Point surveys. We ask you to stand in one spot and record this information within a 55m radius of where you are standing. These Answers will mainly be numerical or estimate percentages.
- **Section D -** Walking transect surveys. When walking between your survey points, we ask you to record a number of characteristics. These will mainly be presence or absence of the attributes listed in this section

The number of survey points and transect walks will depend on the size of the site you have been allocated. The site map that we have sent you will come with suggested locations of survey points and the walking transects between them. If possible, we would like you to survey as close to these as you can. If it is not possible, for example if there is a barrier that you cannot easily or safely cross, then please alter the survey plan as appropriate and mark on you new route and point survey locations on the map. This will help us ensure that a large enough area of the site has been sampled. Likewise, if you come across a barrier that may suggest a change of land ownership, please either alter the 'w' so that you don't cross onto land you don't have permission to be on, or seek permission before continuing.



This shows an example survey path. You should conduct a point survey at the first point marked on the map, point 1. The circle in blue is the 55m radius circle that should be surveyed. You should then do a walking transect survey, surveying 55m in either direction of the path (in green), on your route to point 2, and so on for all survey points.

If the site you are allocated with is very large we might ask you to do several point/transect surveys. These will be marked on the maps accordingly.

Before you go

This survey requires you to estimate distances and survey using this distance as a radius. It can be quite difficult to reliably estimate distance in the field so we suggest that before you do the survey, work out the size of an average pace. Pace out 10 steps and measure this distance. Use this to work out how many steps on average it takes you to pace 55m in the field, allowing you to pace out the point survey radius for the first couple of times until you get accustomed to estimating this by eye.
[The radius that would give an exact hectare would be 56.42m, so surveying as close as you can to his figure would be ideal, however this is a ridiculous thing to request of you to estimate.]

As part of the survey we do ask you to record the presence of a few key species all of which are fairly common, but please read through the list and make sure you are comfortable identifying these before you go. This survey pack includes a guide for these particular species but you might also like to take a more general wildlife guide. The Woodland Trust have launched a free app you can download onto any smartphone called British Trees which allows you to key out tree species using several different characteristics.
The plants you are asked to look out for in this survey are: Ivy, elder, hawthorn, rowan, bramble, Sallow (willows; grey or goat/pussy), bracken, blackthorn, and stinging nettles. Additionally, being able to recognize some of the common invasive species that can threaten woodland and wood pasture is required for question C8.

Checklist

Map of your survey site
A map of the wider area to get to the site
A copy of the letter to landowners
A copy of the survey form and something to write with
A fully charged mobile phone
Species identification guide and the guide to recognising veteran trees.
A torch to check for hollowing in tree trunks and limbs.

Safety in brief

- We advise that you take food and water with you to keep hydrated and maintain your energy.
- Wear comfortable, well-fitting walking boots or shoes. Although we don't anticipate you walking great distances, you won't always be surveying from hard paths and the terrain could be uncertain.
- Check the weather before you survey, and take a waterproof, as many sites won't have much shelter. Never work in extreme weather conditions.
- Consider wearing waterproof gaiters over walking boots. You might walk off paths through long grass.
- It is good to take a fully charged mobile phone with you when you survey. This is essential in case of emergencies but can also be helpful to locate you using your phone GPS if you lose your way.
- Be careful when surveying near grazing animals. Don't put yourself at risk by walking too close to cattle and don't panic or run if the cattle approach you, but walk quietly. If there are cattle obstructing your path, find a way of walking around them.
- Remember to close any gates you have walked through behind you.
- If possible, avoid lone working.

Survey progress checklist

- Receive sites to survey from PTES alongside the survey pack documents. This should include maps of the sites.

- Obtain permission to survey the site. If you do not own the site you will need to get permission from the landowner before you survey. This can be verbal or written permission. Included in the survey pack is a letter that outlines the aims of the project. Simply put in your name and contact details and send it to the landowner. This can be emailed, popped through the letterbox or given in person.

- Plan your survey. Make sure you have all the items on the checklist, have measured your paces and are familiar with the survey questions and survey instructions. If you are unsure about any question on the survey, please contact PTES before going out on site.

- Conduct your survey.

- Fill in your survey results at www.ptes.org/survey-data or post the sheet and the map back to us using the freepost address at the bottom of the form.

Section A

Please complete all the questions on this section. Some information about the site may have been filled in for you. This can be done before or during your survey visit.

A1 Your name
A2 Email
A3 Survey date
A4 How long did you spend on this survey?

A5 – A7 should be filled in for you.
A8 % area of site surveyed. This will be filled in by PTES after your survey. This will be worked out from the transect route you took. If your survey route was different from the one suggested, please mark this accordingly on the map provided and return it to us with your survey form.

Section B

If you see any of these attributes at any time during your visit to the site then please record. This can be during your point surveys, your walked transect, or at any other time you are on this site (e.g. If you stop for a picnic or decide to have a walk around the site extra to the survey).

The questions in section B are largely assessing the type of wood pasture and the impact of land use on the pasture.

B1. Category of wood pasture.
Please indicate whether the site you are surveying is upland wood pasture, parkland, or any other type of wood pasture. attributes of this habitat varies between category, and we will use this category to inform the calculation of the condition of each site.

- Upland wood pasture. This is wood pasture sites in high elevation areas of the country. The elevation can affect both the species composition of the tree and scrub species present and also the size and density of the trees on site.
- Parkland. Parkland is associated with stately homes and designed and/or planted landscapes. It often has a higher proportion of non-native tree species, can have planted shrub species and the sward layer can be managed through mowing as well as livestock.
- Other wood pasture. This covers all other main types of wood pasture including wooded commons, historic Royal forests and pastoral landscapes with scattered trees. The oldest of the trees in these sites are native species, but there may be younger non-native trees which have been planted or grown through natural regeneration.

Site Attributes, B2-B8

These questions are yes or no questions. Please make sure each question is answered with either a 'yes' or a 'no' and do not leave any blank. These questions are critical to the condition assessment and we are unable to assume a 'no' with the absence of a 'yes'.

B2. Did you see any veteran trees on site?

A veteran tree can be any age tree that shows veteran features. They are often in the ancient stage of their life, although veteran features can be developed in non-ancient individuals that have survived various traumas that led to the development of features normally associated with ancientness. If you see trees with any of these veteran features during your survey, please indicate so in this question. Please see the guide in this survey pack, 'recognising veteran trees'.

Veteran features include:

- Hollow trunk
- Branch cavities
- Rot hole
- Branch snag
- Woodpecker hole
- Lightning strike
- Loose bark with crevices
- Bark loss
- Sap run
- Split
- Fungal fruiting bodies
- Water pooling
- Deadwood in the canopy
- Epiphytic plants
- Cavities at the base of the trunk
- A lower, more squat shape than at the middle aged stage due to crown retrenchment. This can often be assessed by stags-horn dead limbs indicating it once had a larger canopy.

B3. Is the site being grazed?

One of the key attributes of wood pasture is the use of animals to graze the sward. Grazing animals may not be present at all times, but there are some indicators of grazing that you can use to identify whether the pasture is managed with grazing.

- Grazing animals seen
- Stock fencing
- Animal dung
- Poaching around gateways or water sources
- Tussocks forming in the sward.

If you see any indicators of grazing please tick yes, and mention which one in the comments section.

Additionally, if you know what type of grazing, eg cattle, sheep o deer, please mention this in the comments section too.

B4. Is the site mown?

This can be more difficult to detect than grazing. Large areas of wood pasture tend to be grazed rather than mown, but often parkland can be mown seasonally with tractors. If you don't see any evidence of grazing management in the site, but there is a short, even sward, it could be that the site is mown. If you see any evidence that the sward is managed through mowing rather than grazing please indicate so here, adding what feature led to your decision in the comments box.

B5. Are there open areas of grassland or heathland?

Please indicate here whether you can see any areas of open grassland or heathland on the site, with whichever seen specified in the comments box. Open areas are essential to support the grazing. Unmanaged wood pasture will scrub over and eventually become young woodland with scattered older trees.

B6. Have you seen any signs of tree disease?

If you see any indication of tree disease, please note in the comments section which tree species you saw that were affected. It does not matter if you can't identify the disease itself as this is often only possible with samples. If you suspect a tree of having a disease, please do not touch it or take any material as this could lead to spreading the pathogens more widely.

Please do not include bracket fungi in this category. Many bracket fungi species are a natural result of tree ageing, as the fungi decays the dead heartwood of the tree and can be a notable contributor to the biodiversity of wood pasture.

B7. Did you see any invasive species anywhere on site? Please specify the species if you know it in the comments box. These could be rhododendron, snowberry, buddleia, false acacia or other non-native shrubs.

B8. Have you seen any cut/deliberate removal of large lower tree limbs?

Open grown trees tend to have large limbs low down on the tree trunk. This structure provides a variety of important niches for wildlife. These lower limbs are sometimes removed for agricultural reasons or machinery access. Removal of these limbs not only takes away a great habitat, but can reduce the life of the tree; without which can be more top heavy and prone to windfall, and may reduce their capacity to survive into ancientness, where their crowns retrench and they rely on branches lower and closer to the trunk.

Of course sometimes lower limbs will fall off naturally on occasion through damage. In these cases, there is usually an untidy tear or snag left where the limb once was. What we are looking for in this question are limbs that have been deliberately removed. The scars of thee will be a smooth cut by a chainsaw.

Signs of land use. B8-B18

For these questions please indicate if you see any of the described attributes.

B9. Poaching

Poaching is damage of the sward by the feet of livestock. This compaction destroys the soil structure, forcing out the tiny air pockets and creating areas of anaerobic soil which damages plant growth. It can be a symptom of over stocking grazing animals. Poaching can also occur in damp areas and areas of high footfall, such as gateways and by water troughs. It can also result in continued wet periods if stocking levels are not reduced in response to the wetter conditions.

a) How widespread is the poaching? From 0 (none) 1 (localised) to 3 (widespread)
   Poaching only around gateways or damp areas should be classed as localised, 1, with widespread poaching in several areas to be classified at 3.
b) How severe is the poaching? From 0 (none) 1 (minor) to 3 (severe)

B10. Evidence of compaction (not including pathways or roads)

Soil compaction can create anoxic soil conditions that alter the habitat and reduce the number of species that will live there. Ultimately compaction will lead to the stunting and even death of the grass, damage to roots, and damage to soil fungal mycorrhiza that are associated with tree health. Compaction on wood pasture and especially parkland that have heavy footfall is expected around pathways and infrastructure. Compaction in areas that are not pathways can indicate overuse of a site, or under management of this risk. Evidence of compaction can include bare soil, permanent tyre tracks and 'ponding', where water permanently settles due to the compaction and reduced permeability of the soil.

a) How widespread is the compaction? From 0 (none) 1 (localised) to 3 (widespread)
   Compaction *beside* roads and paths should be classed as localised, 1, with widespread compaction in several areas to be classified at 3.
b) How severe is the compaction? From 0 (none) 1 (minor) to 3 (severe)

B11. Supplementary feeding.

Please indicate here if you see any evidence of supplementary feeding. This may be in the form of ring feeders, or the characteristic marks that ring feeders have left such as rings of lush green grass or

poached ground. Supplementary feeding increases the nutrient levels in the soil and decreases the quality of the grassland for wildflowers.

B12. Nettles concentrated beneath tree canopy.

Stinging nettles are nutrient loving plants that are often found clumped below trees when grazing animals shelter there, enriching the nutrient content of the soil in that area. Please do not tick if there are only a handful of individual nettle plants, we are looking for more extensive clumps or patches of nettles, of the kind you would avoid walking through.

B13. Bark stripping at ground level

Keep an eye out for signs that bark has been stripped from the trunk of any tree between ground level and 1.5m high. This can be an indicator of overgrazing of domestic or wild animals and when severe enough, can weaken and kill trees. Please indicate here if you see any signs of bark stripping.

B14. Are there trees under active pollarding management?

Pollarding is a management practice that removes the upper branches of a tree, resulting in a dense head of branches and/or foliage regrowth. Trees may be pollarded to the trunk level, where you will see large amounts of vigorous young growth growing directly from the trunk, with no other obvious limb structure on the tree. Alternatively, trees can be pollarded at the limb level, in such cases you will have stunted looking main limbs, with dense heads of young regrowth from the ends of the cut branches.

B15. Are there any historically pollarded trees that are no longer being pollarded?

Trees naturally tend to grow with limbs at staggered positions up the trunk if a tree. Pollarding interrupts this structure, resulting in growth originating at one level, the level at which the tree is pollarded.

If the pollarding management is subsequently stopped, the dense head of regrowth will develop into more mature branches, meaning that historically pollarded trees will have all its major limbs originating at one height on the trunk.

If these branches are mature, particularly if the sum girth of these branches is greater than the girth of the main trunk, it is a clear indication that a once pollarded tree is no longer being managed by pollarding.

B16. Arable fields

The map supplied to you should have land historically converted to arable fields removed from the polygon you have been asked to survey. If you see any arable fields that are not already marked off the map, please draw them as accurately as you can on the map and return this to us with your survey form.

B17. Infrastructure

The map supplied to you should have large infrastructure removed from the polygon you have been asked to survey. If you see any infrastructure that is not already marked off the map, please draw them as accurately as you can on the map and return this to us with your survey form. This should include car parks, roads or permanent buildings.

B18. Signs of land, tree or stock management

The variable nature of wood pasture means that the different management required for different sites.

Examples of management could be bracken rolling, tree veteranisation (the deliberate mutilation of mature trees to create veteran features), sward mowing, hay cutting, tree pruning that removes dead or damaged wood.

Equally useful is any evidence of the absence of these management practices. For example, ant hills are an indicator of long undisturbed grassland, evidence of the lack of pasture disturbance or improvement. Also fallen trees that have not been removed, moved or cut up give an important insight into how deadwood is being managed.

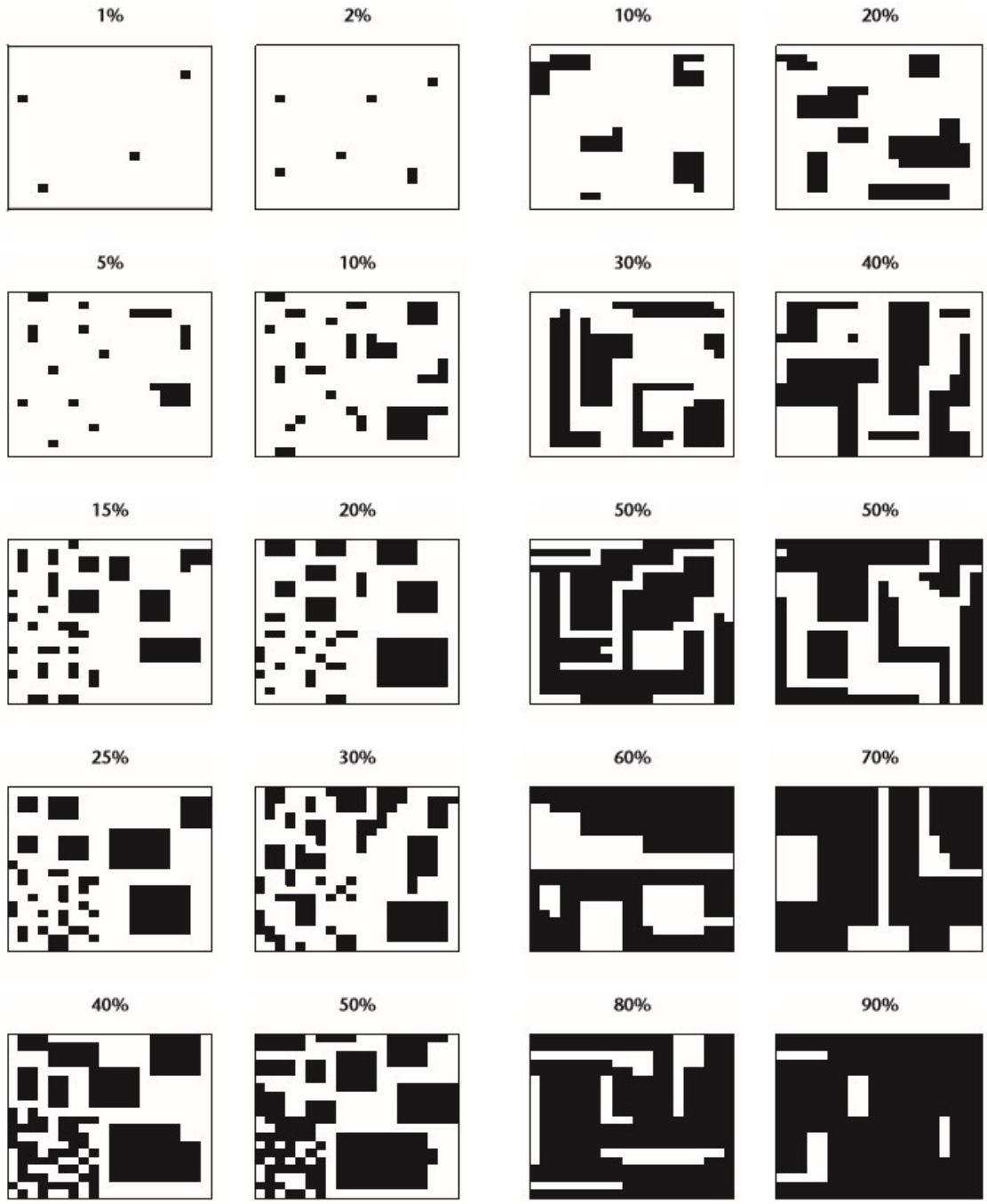
B19. Outline or list any features that are worthy to note but unaccounted for in this form, eg rare species seen

This is a place to add any notable features you see at the site. This could be rare species, notable manmade or natural features. Please only write in features/species you see on your survey.

Section C

These questions should be answered at the survey points. We ask you to record this information within a 55m radius of where you are standing. These Answers will all be numerical or estimate percentages. You should start and end your survey with these survey points, as well as doing one between each transect.

Estimating 55m can be difficult so we suggest you pace out 10 steps and measure them before you get on site, allowing you to pace out 55m as a guide for your 55m radius circle. Please walk fully round your survey area before completing these questions to get the most accurate estimate possible. Estimating percentages can be quite tricky, especially from a central point. We advise that you break down your circular survey area into quarters, estimate for each quarter (which is much easier to visualize) and then average these quarter estimates to reach your final estimate.



Vegetation cover – percentage charts (Ontario Institute of Pedology 1995)

C1. Total number of living trees.

Please count the total number of living trees that you can see within your 55m radius from your survey point. If you are in a heavily wooded area, and there are more than 50 trees please just put 50+.

For species that can be present in a scrubby or small tree form such as hawthorn, decide on a plant by plant bases whether the individual is best described as scrub or a tree, and count it in the appropriate estimate. Only count these as either scrub or a tree, do not count them in both estimations. To be counted as an individual tree, these plants should have a distinct trunk and well-formed limb structure.

C2 Did you see open grown trees on site?

Trees that have grown in an open environment have a characteristic shape, quite different from those grown in more densely crowded habitats. Open grown trees are wide, sometimes wider than they are tall, they often have a more regular mushroom shaped canopy, which starts lower down on the trunk. Ash is a bit of an exception to this, which will still grow with a fairly upright habit even when grown in an open habitat.

The image below shows the classic open grown structure of an old oak tree. This is the archetypal 'open-grown' tree and not all will be quite as obvious as this, but one characteristic is that these trees retain their lower limbs. Trees grown in closed canopy situations like woodlands tend to lose their lower limbs and just retain the structure at the canopy, where they can collect light. This means closed canopy or crowd grown trees tend to grow taller, with much less developed lateral growth.

If you are unsure as to whether a tree has an open grown structure, it can help to try picturing it in a woodland setting, if you think it would seem out of place in a woodland then it could be an indication that it was grown in a more open situation.

Open grown trees in Richmond park with characteristic broad structure and low lateral limbs.

C3. Total number of veteran trees.

Please count the total number of living veteran trees within your 55m radius. You might not be able to see the veteran features from the survey point. If not, please take a closer look at any tree that looks like it could have any veteran features.

C4. Of the veteran trees, how many are hollow oak, ash or beech trees?

Considering that the very nature of this veteran feature is on the inside of the tree it can be difficult to ascertain hollowing. The best way to spot hollowing is to walk around the tree, carefully looking for any

rot hole or opening in the tree trunk. These openings will often be from tears in the bark, from limb loss or other damage. If feasible and safe to do so, peer inside any rot holes to determine whether the hollowing extends to the main trunk.

C5. What is the percentage of canopy cover in your hectare?

This can be a struggle to estimate from the center of your survey point so it is a good idea to have a walk around the 55m diameter to get a sense of the whole survey point.

C6. Percentage cover of low scrub

Estimate the percentage of the area in your 55m radius that is covered by low scrub. This is low scrubby vegetation that is not grass, but not tree species. Typically scrub will include species such as bramble, low level holly, heather, scrubby hawthorn, elder, blackthorn or gorse.

C7. Percentage cover of bracken

Estimate the percentage of the area in your 55m radius that is covered by bracken. If there is any bracken management obvious, please still estimate the total cover of bracken here, but mention the signs of management in question B17.

Bracken can grow densely or sparsely in wood pasture. Please take this into account when estimating the % coverage.

C8. Percentage cover of invasive non-native shrub species.

If you see any invasive non-native shrub species in your point survey area, please estimate the percentage. These species could be rhododendron, snowberry, buddleia, false acacia or other non-native shrubs.

C9. Percentage of un-vegetated ground.

Please estimated the total percentage of un-vegetated ground in the survey point. This could be bare soil or ground only covered in leaf litter. Include any un-vegetated ground found directly underneath trees and any between trees.

If sampling in the spring, you might find areas covered by spring bulbs, please note this in the comments. The same location could be predominantly bare ground in summer as the leaf canopy reduces the sunlight reaching the floor.

C10. Percentage of ground covered by grass.

C11. Is the grass of varying lengths?

Grass managed with appropriate grazing levels will have a patchy or tussocky structure. It will have areas of longer grass and areas of shorter grass. Please indicate here whether the majority of the grass at the survey point is mixed lengths. If it isn't, please indicate whether all the grass is long (l) or short (s).

How long is long grass? Unfortunately, there isn't a set answer for this. The aim of this question is to assess whether the sward is being mismanaged either through overgrazing or through neglect. Having sward heterogeneity is the ideal situation, so patches of longer and shorter grass or a sward with a tussocky appearance.

If *all* the grass is very short this is an indicator that the site is over grazed or over mown, resulting in reduced floral diversity among other things. If *all* the grass is very long, then this could indicate a lack of grazers or other management, meaning the eventual conversion to scrub and secondary woodland.

Unfortunately, we can't give a value for how long the grass should be as this will change depending on the season, on the grass species composition and on the type of animal being used to graze.

C12-C17 *Individual species. Please tick the appropriate box if you see any of these species in the 55m radius of your point survey.*

Section D

Please start section D by taking a photo of the site in the direction you are about to walk your transect. When you have walked your transect, please take a photo looking back in the direction you have just walked. These can be uploaded to the website or emailed when you have completed your survey. This should total 8 photos per survey. Please label these 1-8 so that we know which photo relates to which transect.

These questions should be answered whilst walking the transects between survey points. Please tick the correct box if you see any of the listed attributes during your walk between survey points. Please look for these attributes within 55m of your walked transect. This means that we are able to estimate the area of the site that has been surveyed.

D1. Fallen deadwood.

This can be branches or limbs that has fallen from a tree and retained in place.

D2. Fallen trees.

These can be either living or dead, but that have been left in situ. They might have had limbs removed to make it safe for the public but be in the place they fell. You can often tell this by the scar in the ground where the root plate has been pulled up if the whole tree has been uprooted, or a tree stump in cases where the tree has snapped and fallen.

D3. Crown deadwood.

Please tick this box if you see any obviously dead wood that has been retained in the crown. This is usually easy to spot as it is grown wood without leaves at the tip. In winter, without leaves on the trees, this becomes more difficult. Some deadwood can be identified as larger libs that do not contain many lateral branches or fine leaf branches, which may have broken off over time.

D4. Standing dead trees.

Replacement trees, D5-D7

These trees should be the same species as the mature/veteran trees, or a species that would reasonably replace them. This means you should not count birch trees of any age in the next three questions as these do not age in the same was as other trees nor live very long, hence could not be considered sufficient replacement for the older trees present. They will not provide the veteran tree habitat.

D5. Please tick to if you see young trees along the transect that are roughly between 0 and 20 years old. (young trees)

D6. Please tick to indicate if you see mature trees along the transect that are roughly between 20 and 100 years old.

D7. Please tick to indicate if you see old trees along the transect that are likely to be over 100 years old.

D8. In total what percentage is covered by open grass?

D9. In total what percentage is covered by scrub?

D10. In total what percentage is tree cover?

D11. What % of total trees are young/mature/old?

Please give an indication of the rough proportions of young, mature and old trees along the transect you have just walked. If about 80% of the trees are roughly 0-20, 15% are 20-100 and 5% are 100+ this would be entered as 80/15/5

Thank you very much for your time in helping People's Trust for Endangered Species. This project relies on data gathered by volunteers and would not be possible without your help, so thank you for contributing to the conservation of this important habitat!