Forestry Commission

National Forest Inventory of Great Britain Survey Manual: third cycle

Annex

National Forest Inventory

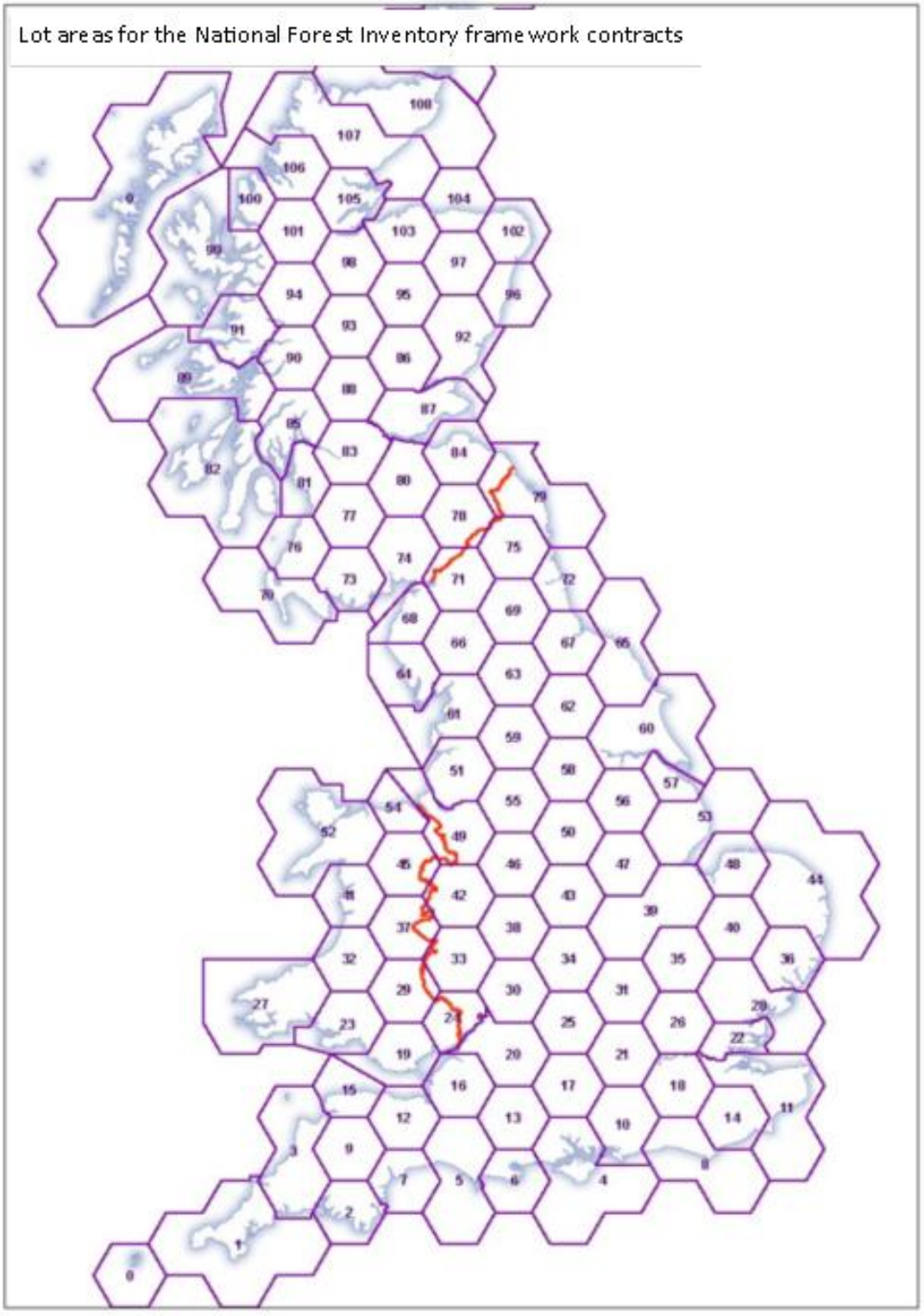
Issued by: National Forest Inventory, Forestry Commission,
231 Corstorphine Road, Edinburgh, EH12 7AT

Date: April 2023

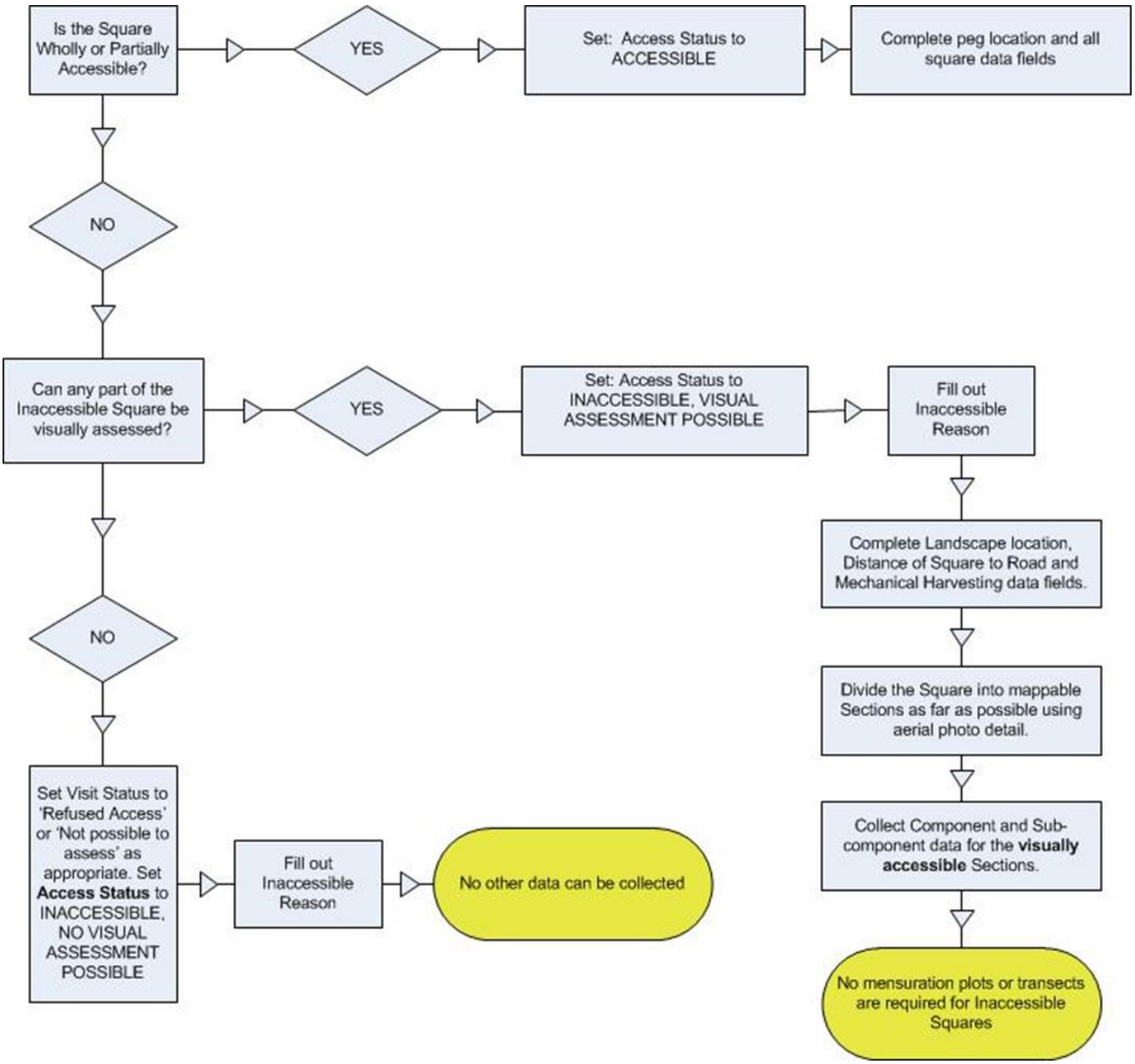
Enquiries: nfi@forestresearch.gov.uk

Website: www.forestresearch.gov.uk/inventory
www.forestresearch.gov.uk/forecast

A. Map of Great Britain with the NFI Lots marked



B. Square Accessibility Flow Chart



C. Data fields: Inaccessible square where a visual assessment is possible

Data Field	Options	Comments
Distance of Square to Road	See Annex C	Same as for accessible squares.
Mechanical Harvesting		Same as for accessible squares.
Inaccessible Reason	Inaccessible thicket	Thicket is defined as stands of trees where the bases of the live crowns of the trees are below 1m in height, and the live crowns interlock so tightly that access is impossible. This applies to conifers and broadleaves.
	Inaccessible health and safety	Inaccessible due to H&S reasons
	Inaccessible slope	Inaccessible due to slope
	Inaccessible obstruction	Inaccessible due to an obstruction
	Inaccessible windblow	Inaccessible due to windblow.
	Inaccessible other	Where vegetation prevents access (e.g. head-high bramble, dense gorse or rhododendron etc.) select this option.

D. Accessible square data fields (new square)

Data Field	Options	Comments
SW Peg Grid Ref	*Fixed*	*This field will be pre populated and is the GIS grid reference of the SW corner of the square. It is here that you need to navigate to and establish the location of the square by.*
Lot Area	*Fixed*	*This field will be pre populated and represents the lot area the square is located within.*
Peg Location	• SW • NW • SE • NE	Corner locations. The peg assessment and its associated fields are only required when the square is accessible. Peg the most easily identifiable corner in the first instance. If it is not possible to peg the SW corner move clockwise to the NW corner and peg this, if that is not possible, peg the next clockwise corner and so on.
	• Elsewhere	Where no corner is suitable, place a peg somewhere along a square boundary if possible and fill in the Note field.
	• No Peg	Where a peg has not been left for whatever reason, mark the spot with a twig and biotape.
	• Not surveyed	For Office use
Peg Reason	• No Landowner Permission • Health & Safety • Legal Restriction • Public Access Area • Residential • Garden • Impenetrable Surface	This data field only appears if the SW corner has not been pegged. Select the reason why the SW corner could not be pegged.

Data Field	Options	Comments
	• Puddling Ground • Boggy Ground • Inaccessible • Multiple causes • Terrain • Ground Vegetation • Forest Operations • Other	
Peg GPS Location	• Free text	Once you have located and confirmed the SW peg location, you need to take a consolidated GPS reading and record this here. This may be different to the ArcMap derived coordinates used to navigate to. This must be 12 characters, starting with the Ordnance Survey 100km Square letter, followed by 10 digits (e.g. SU0380004500). This data will be used by the NFI QA team and later surveyors to locate this square and thus it is important to take a reliable reading. ***Do not copy the last surveyors co-ordinates into this box – you must use your GPS co-ordinates on the day*.** Use of your own co-ordinates can highlight errors in either the original mapping or in your re-location of the peg.
Peg Comments	• Free text	Always give notes to help relocate the peg in the future (e.g. by root plate of fallen tree, 3m North of footpath).
Surveyor	• Fixed	This should be your name and will be automatically taken from your login details. It will be used in quality assurance processes to isolate any issues concerning accuracy, precision, quality and 'correctness' of the survey to individual surveyors.
Distance of Square to Road	• <200m • 200 – 400m • 400 – 600m • 600 – 800m	Measure the distance as the crow flies from the square to the nearest road able

Data Field	Options	Comments
	• 800 – 1000m • >1000m • Not Possible to Assess	to take a 32 ton timber lorry. Use the ArcMap "Measure" tool. For office use only.
Mechanical Harvesting	• Wheeled vehicle on site possible • Wheeled vehicle on site impossible • Sky line site • Mech. Harvesting Impossible • Not Possible to Assess	Harvesting operations can be carried out using a wheeled vehicle. Harvesting operations cannot be carried out using a wheeled vehicle, but they can be carried out using a tracked vehicle. Site is too steep for wheeled/tracked vehicles, but can be harvested using a skyline. Site conditions are unsuitable for any form of mechanical harvesting. For office use only.
Assessment date	*Fixed*	*This will be automatically populated to the first date you save edits. It will represent the date of your survey.*
Previous Survey Date	*Fixed*	*This is the date of the last survey and only applies to re measure squares.*
Region Code	*Fixed*	*This is the NFI region within which the square is located.*
50km Tile	*Fixed*	*This is location of the square in relation to the Ordnance Survey grid.*
Visit Status	Unvisited In Progress[1]	For office use only. Square data collection is in progress and it is necessary to return another time to

[1] Before a Square is checked back in it must have a Visit Status of either:

- Completed
- Refused Access
- Not possible to assess

Data Field	Options	Comments
		finish the data collection. This should also be used if the square is Temporarily Inaccessible – the Access Comment field should be updated to describe the reason of temporary inaccessible.
	Completed[1]	Square data collection has been completed. Select this option if all parts of the square have been assessed either through being objectively measured or visually assessed
	Refused Access[1]	Select this option if no data has been collected because access was denied across the entire square or on the approach to the square.
	Not possible to assess For office use only.	Select this option if no data has been collected because the entire square could not be objectively measured or visually assessed for some reason other than refused access.
Access Status	Accessible	Select this if any part of the square is physically accessible.
	Inaccessible, visual assessment possible	Select this if the entire square is physically inaccessible but at least part of it can be visually assessed (e.g. one or more Sections can be visually assessed).
	Inaccessible, NO visual assessment possible	Select this if the entire square is inaccessible and no part of it can be visually assessed.
Access Comment		Here you should note anything particular to that site that the next surveyor may need to know to gain access, such as where to park, the best way to walk in or where an unlocked gate may be.

Data Field	Options	Comments
Aerial Photo Date	*Fixed*	*This is the date at which the current aerial photo you have been supplied with was flown and is for that specific square. It is supplied to help you understand why the photo and your observations may be different. For example a photo may be up to 5 years old and something may have happened within the square since then. The AP used for the previous survey is also supplied (old photography), no date is supplied for this, but it was generally taken around 2006.*
Precipitation / aerial moisture	• No survey impact • Low survey impact • Medium survey impact • High survey impact	These fields are to help FC staff assess how the weather at the time you assessed the square may have affected your assessment. Excessive moisture in the air (rain, heavy mist, snow) or moisture and noise (such as a waterfall) can significantly impact on your hypsometers performance. In these instances use traditional 'mechanical' instruments such as tapes and Clinometers (e.g. Suunto) to takes heights and distances. Indeed this can be a good 'excuse' to calibrate your equipment through comparison. You should make your best attempt at assessment in all such conditions, by taking the provisos outlined above and below, and through assessing the impact any such factors may have had on your assessment (none to high) and recording these in the 'weather fields' FC can take the conditions you had to measure in into account when we undertake Quality Assurance on your work and when we analyse and report upon your data.
Snow ground cover	• No survey impact • Low survey impact	Deep snow may impact on your ability to assess the lower levels of vegetation and NVC. In such instances looking for areas without snow cover, or scraping back

Data Field	Options	Comments
	• Medium survey impact • High survey impact	snow is expected to help gain an accurate assessment.
Visibility	• No survey impact • Low survey impact • Medium survey impact • High survey impact	Poor visibility can also impact on your ability to assess, impairing height measurements, canopy stratification and % component allocations. Again try to organise your time at the site so that the best visibility possible is achieved before finalising on these measurements.
Wind	• No survey impact • Low survey impact • Medium survey impact • High survey impact	Excessive wind can hamper accurate tree height measurement by bending and moving the tree, distorting the distance from leader to ground. In such instances you should wait until the wind is as low as is likely and take your best reading. Taking two or three heights a few seconds apart to see if you have this correct is a sensible precaution.

E. Inaccessible square data fields (visual assessment possible).

Data Field	Options	Comments
Distance of Square to Road		Same as for accessible squares.
Mechanical Harvesting		Same as for accessible squares.
Inaccessible Reason	Inaccessible thicket	Thicket is defined as stands of trees where the bases of the live crowns of the trees are below 1m in height, and the live crowns interlock so tightly that access is impossible. This applies to conifers and broadleaves.
	Inaccessible health and safety	Inaccessible due to H&S reasons
	Inaccessible slope	Inaccessible due to slope
	Inaccessible obstruction	Inaccessible due to an obstruction
	Inaccessible windblow	Inaccessible due to windblow.
	Inaccessible other	Where vegetation prevents access (e.g. head-high bramble, dense gorse or rhododendron etc.) select this option.

F . Linear feature theme data fields

Data Field	Options	Comments
Theme	• Unsurveyed/Missing	The line has been recorded, e.g. from map data, but not surveyed and no Theme added.
	• Cultural Boundaries • Woodland Edge • Transport • Recreation • Hazards • Water Feature • Small woods/ Hedge • Not Surveyed?	Choose appropriate theme.
The next 3 Data Fields relate to where, on the Linear Feature, a Theme is.		
From (metres)	• Set by the software initially but can be changed by surveyor	Change the value either using the Set buttons, the pen or by free text.
To (metres)	• Set by the software initially but can be changed by surveyor	Change the value either using the Set buttons, the pen or by free text.
Length (metres)	• Calculated by software	Do not change this value
For a New Linear Feature drawn in a Re-measure square:		
New or missed Segment	• New	• A new Linear Feature since the last survey
	• Missed	• A linear feature that should have been

	• Evolved • Protocol Change	drawn during the last survey but was missed • A linear feature that has changed and need modifying since the previous survey • A linear feature that has been added due to a protocol change since the last survey

G. Theme common data fields

Data Field	Options	Comments
Visit Status	• Unvisited	The line has been drawn from map data but not visited yet.
	• In progress	In progress can be used if surveyor needs to leave the site before completing data entry (e.g. it gets dark before completion)
	• Completed • Refused Access • Inaccessible	
Reason for Change	• No change	• No change has occurred between original and remeasure assessments
	• Real change	• Real change has occurred between original and remeasure assessments
	• Error change	• A change in the data due to an error found by IFOS
	• Spatial error	• As above but a Spatial error
	• 1st Assessment	• Where this is the 1st assessment of the Sample Square
	• Original	• Unchanged data from IFOS

H. Cultural boundary theme data fields

Data Field	Options	Comments
Event Category	• Fence (internal or external)	Any type of fence unbroken along its length but can be in good to very poor repair. If fence is broken map separate lengths. NB: Electric and Barbed wire fences also come under Hazards and should be assessed as both.
	• Wall	As above but any type of wall
	• Hedge	A hedge or hedgerow is a line of closely spaced shrubs and tree species, planted or trained in such a way as to form a barrier or to mark the boundary of an area. This includes mature overgrown hedgerows as well as those that are maintained.
	• Avenue	Traditionally, an avenue is a straight road with a line of trees or large shrubs running along each side, it can also be a single line of trees
	• Ditch	A ditch is usually defined as a small to moderate depression created to channel water.
	• Woodbank	A feature often associated with a ditch that in the past had a wall or hedge on top to keep grazing animals out.

	• Earthworks • Historic Pollarding	In archaeology, earthworks are artificial changes in land level often known as 'lumps and bumps'. Evidence of old pollarding. Pollarding is a pruning system in which the tree is cut back (tree stem or minor branches removed) above the browse line as part of management. This pruning encourages lateral branches and is normally done two or three metres above ground level.
Type	Choice is dependent upon Event Category: <u>Fence</u> • Deer • Pheasant pen • Electrical • Security fencing • Stock <u>Wall</u> • Stone • Brick <u>Hedge</u> • Dead Hedge • Hawthorn • Beech • Mixed • Ancient • New <u>Avenue</u> • No 'Type' choices <u>Ditch</u> • No 'Type' choices <u>Woodbank</u> • No 'Type' choices	

	<u>Earthworks</u> • No 'Type' choices <u>Historic (old) pollarding</u> • No 'Type' choices	

I . Woodland edge data fields

Data Field	**Options**
Event Category	• Abrupt Edge • Tapered By Height • Variable Density Ecozone

J . Transport data fields

Data Field	**Options**	**Comments**
Event Category	• Public Road	• A road over which the public has the right of access. Also includes Private roads.
	• Railway	• A railway track of any gauge
	• Public greenway	• A greenway is a historical right of way for any persons or vehicles usually denoted by a lack of surface, often used for recreation and pedestrian and bicycle traffic
	• Forest Road - sealed surface	• A road through the forest for use by the owner and workers – tarmacadamed

	• Forest Road - unsealed surface	• As above but metalled not tarmacadamed
	• Ride sealed surface	• Rides are often vegetated, un-metalled or un-surfaced corridors often giving access to or through a forest. They also include de-classified CAT 1A roads that are no longer maintained but still surfaced.
	• Ride unsurfaced	• Rides are vegetated, un-metalled or un-surfaced corridors often giving access to or through a forest.
	• Extraction rack – Dozed	• A dozed path through the forest that is used to extract timber (assign Linear Feature to the main Rack only)
	• Extraction rack	• A path through the forest that is used to extract timber (assign Linear Feature to the main Rack only)
	• Soil damaged and compacted through Ops.	• Soil that has been obviously damaged (e.g. deep ruts) and/or compacted by forestry vehicles
Road Width	Widths in 2m increments, e.g. 0-2m, 2-4m….	Choose most appropriate for the mean road width within along the linear feature

K. Recreation data fields

Data Field	Options	Comments
Event Category	• Public Right of Way	• Footpaths, bridleways and byways which give members of the public the right to travel across land.
	• Informal Path	• Where people walk but there are no formal signs etc.
	• Formal path	• A planned and created pathway
	• Outdoor education activity	• Any linear outdoor education facility
	• Off-road motorcycle tracks	• Tracks for off-road motorcycles
	• Bridleway	• A track along which the public have a right to walk or ride horses.
	• Cycle way	• Segregated cycle facilities are roads, tracks, paths or marked lanes designated for use by cyclists

		from which motorised traffic is generally excluded
	• Path with Way markers	• A path with markers to guide users along routes

L . Hazards data fields

Data Field	Options	Comments
Event Category	• Powerlines overhead	• Self-explanatory
	• Powerlines underground	• Self-explanatory
	• Gas lines underground	• Self-explanatory
	• Telephone lines overhead	• Self-explanatory
	• Cliff	• Self-explanatory
	• Steep ground	• A slope of ≥33% (≥18°)
	• Other Hazard	• Any other hazard
	• Scheduled Monument	• Self-explanatory
	• Mine area	• Self-explanatory
	• No Go Area	• Self-explanatory
	• Working quarry	• Self-explanatory
	• Abandoned quarry	• Self-explanatory
	• Dangerous scree/boulders	• Self-explanatory
	• Electric fence	• Self-explanatory
	• Barbed wire fence	• Self-explanatory

Comments (if Other Hazard chosen in Event Category)	• Free text	• Make a note on what the hazard is.

M . Water features data fields

Data Field	Options	Comments
Event Category	• Ditch/Drain	The Main Ditch/Drains in a Section
	• Stream	A stream is a body of water with a current, confined within a bed and stream banks. For the NFI the mean width of the stream along its mapped length must be <5m.
	• River	A river is a natural watercourse, usually freshwater, normally flowing toward an ocean, a lake, or another river. For the NFI the mean width of the river along its mapped length must be ≥5m.
	• Canal **Note that if any areas of Active Erosion or any Dams seen along a water feature should be located as a Point feature.**	Canals are human-made channels for water. There are two types of canal: i. Aqueduct (or water conveyance) canals that are used for the conveyance and delivery of fresh water, for human consumption, agriculture, etc. ii. Waterway canals that are navigable transportation canals used for carrying ships and boats loaded with goods and people, often connected to existing lakes, rivers, or oceans

Water Feat. Width	Widths in 1m increments e.g.:0-1m, 1-2m… Up to: • 20m+	Estimate the MEAN width of the Water Feature over its mapped length.
Water Feat. Depth	Depths in 1m increments, up to 5m+, plus • Dry	Estimate the MEAN depth of the Water Feature over its mapped length on the day of the assessment.
For Streams, Rivers and Canals the following also have to be completed		
Contaminants	• None • Woody harvesting and fallen tree debris • No list A, possibly min. list B litter present • Traces of list A and/or occasional List B • List A widespread & / or occasional or widespread List B	Self-explanatory See below for LIST A and B contaminants

List A contaminants	**List B contaminants**
Sewage derived litter and solids, including - faeces - toilet paper - contraceptives - sanitary towels - tampons - cotton buds Oils Non natural foam, scum or colour Sewage fungus Sewage or oily smells	General non sewage derived litter Builders waste Gross litter, including - shopping trolleys - furniture - motor vehicles - road cones - bicycles/prams

Tree Shading %	Free text (numerical)	The proportion of the feature that is shaded by trees.

N. Point feature themes

Field Name	Value
Theme	• **Water feature** – Permanent or temporary ponds, springs, dams and water erosion • **Veteran trees** – Old or sizeable trees • **Hazard** – Mine shafts, sink holes etc. • **Monument** - Any form of monument, ancient or 'modern' e.g. standing stone or cenotaph respectively. Also any scheduled or unscheduled ancient monument. • **Historic structure** - Any form of building, e.g. dwelling, farm, barn, industrial buildings etc. (stone, brick, wood etc.), in any state of repair, (roofed, non-roofed, evidence of a wall etc.), that is older than the Second World War (1939 – 1945).

O. Point Feature – Hazards themes data fields

	Definitions
Theme Hazard	Any point feature that could pose a risk to personnel
Hazard type	**Definitions**
• Mine shaft	• Such hazards are usually signed and fenced off and should obvious, but be aware of small fenced areas in disrepair.
• Sink hole	• Naturally occurring holes in the ground resultant from underground water erosion.
• Access point	• The point assessed as the safest location from which to enter the site
• Bridge	
• Recreation site	• Be aware of other people
• Mast/Aerial/Windfarm	
• Harvesting operations	• Live mechanised harvesting is dangerous. Liaise with the land owner and follow the guidance as set down by them and FISE.

	Definitions
Theme Hazard	Any point feature that could pose a risk to personnel
Hazard type	**Definitions**
• Snares • Hunting • Other Hazard	• Shooting is one of the highest risks our surveyors face. If you see evidence of shooting such as shot gun cartridges, pheasant pens, hides or feeding mark a point. Even if this activity looks to be old – shooting often runs on cycles and the site may be 'live' during a later survey. • If 'Other Hazard' is chosen a Comments box will appear which must be filled in.

P . Point features – water feature data fields

		Definitions
Theme Water Feature		Any non-linear water feature
Type – Pond		Seasonal or permanent water retention
Attributes	**Values**	**Definitions**
Pond Area (sq metres)	M3	Visual estimate of area to within the nearest one to five square metres – Free text
Water Feat. Depth	• 0-1 m • 1-2 m • 2-3 m • 3-4 m • 4-5 m • 5+ m • Dry	Make a visual estimate of the average depth of the pond, as opposed to depth at its deepest point
Tree Shading %	%	Estimate % of pond overshadowed by trees from a plan view (i.e. from above)

		Definitions
Theme Water Feature		Any non-linear water feature
Type – Pond		Seasonal or permanent water retention
Attributes	**Values**	**Definitions**
Contaminants	• None • Woody harvesting & fallen tree debris • No list A, possibly min. list B litter • Traces of list A and/or occasional List B • List A widespread &/or occasional or widespread List B •	

List A contaminants	**List B contaminants**
Sewage derived litter and solids, including - faeces - toilet paper - contraceptives - sanitary towels - tampons - cotton buds Oils Non natural foam, scum or colour Sewage fungus Sewage or oily smells	General non sewage derived litter Builders waste Gross litter, including - shopping trolleys - furniture - motor vehicles - road cones - bicycles/prams

Outflow	• Yes • No	Is there source of water flowing out of the pond (an outflow) visible?
Inflow	• Yes • No	Is there source of water flowing out of the pond (an inflow) visible?

		Definitions
Theme Water Feature		Any non-linear water feature
Type – Pond		Seasonal or permanent water retention
Attributes	**Values**	**Definitions**
Pond origin	• Natural • Man made	Try to assess if the pond is manmade or not. Natural ponds will generally not have concrete or plastic bottoms, or built walls around their edge. Natural ponds may have re enforced banks, using gabions or wicker for example. Natural ponds may occasionally be damned to make them larger. In these cases classify as man made.
Pond age	• < 10 years • >10 years (10 years or greater)	Make your best estimate of the age of the pond. Older ponds will have a wider array of aquatic plants such as water lilies, rushes, sedges, duck weed and the surrounding banks are more likely to have a diverse or native vegetation mix. If there are any manmade features such as walls or dams, assess the age of these and if they look contemporary with the pond itself.
Spring	Presence	The origin of a water source as it comes out of the ground, a bank or a cliff.

		Definitions
Theme Water Feature		Any non-linear water feature
Type – Pond		Seasonal or permanent water retention
Attributes	**Values**	**Definitions**
Dams – man-made	Presence	The presence of man-made structure, composed of stone, concrete, rubble or machined timber within a watercourse that impedes the flow of water, often causing a build-up of water behind the dam.
Dams – natural (woody debris)	Presence	The presence of a build-up of woody material within a watercourse that impedes the flow of water, often causing a build-up of water behind the dam.
Dams – beaver	Presence	Dams build by beavers, composed of un machined timber, with cuts usually denoted by a pointed shaped incised with chisel like tooth marks where the timber has been cut by the beaver. Beaver lodges may be associated with these features and are characterised by large mounds of smaller woody material, close to the waters edge and up water of the dam.
Active Erosion	Presence	Evidence of bank erosion/collapse and/or physical sedimentation into the pond from in flows.

Q. Point features – Veteran Trees data fields

Field Name	Value
Species	See Species list above
DBH	Free text – whole number
Height(m)	Free text – total height to one decimal place
Tree Form	• Maiden Form • Multi-stemmed • Coppice • Pollard • Layering
Heritage Tree	• <null> • Yes

R. Selecting a section data entry fields

Data Field	Options	Comments
Area	*N/A*	*Allocated by the software. Relates to the area of the section.*
Section Letter	*N/A*	*Allocated by the software, letter a to the largest section, b to the next largest and so on.*
Plot Type	• Circular • Whole Section Sub-Compartment • Not applicable	Assign Plot Type. 'Not applicable' to be used in non-treed, non-NFI, and Inaccessible Sections.
Plot Generation Count	• *Generated by the software*	*This counts the number of times you have generated plots in this section. This is so QA staff can check if a surveyor is doing this to make their work easier at the expense of survey bias.*
Visit Status	• Unvisited • In progress	'In progress' can be used if the surveyor needs to leave the site before completing data entry (e.g. it gets dark before completion).

	• Completed • Refused Access • Not possible to assess	Section surveyed and recorded within software. Should only be used if the entire Section is Refused Access AND is Inaccessible NO visual assessment possible. 'Not possible to assess' should ONLY be used if the Access Status is 'Inaccessible, NO visual assessments possible'. See **Error! Reference source not found.**. *When the Sample square is completed each Section must have one of the following Visit Status':* • *Completed* • *Refused Access* • *Not possible to assess* *Unvisited and In Progress must not be recorded when the square is sent back to the FC.*
Access Status	• Accessible • Inaccessible, visual assessment possible • Inaccessible, NO visual	Select this if any part of the section is accessible and at least 1 circular plot is accessible or 75% of a whole section plot is accessible. See flowchart 9. All subservient data (species components etc.) to be assessed. If 'Inaccessible but visual assessments possible' is chosen then an abbreviated survey is to be conducted, including visually estimating Top Height and Mean DBH for each Component in the stand. To estimate Top height, estimate the mean height of the component. Plots are not expected. If visual assessment is not possible you are not expected to survey and the software

	assessment possible	does not allow Component or sub-component level data and plots to be entered.
Inaccessible reason (this Field only appears if one of the two Inaccessible options above are chosen)	• Inaccessible thicket	Thicket definition: 'Stands of trees where the bases of the live crowns of the trees are below 1m height and the live crowns interlock so tightly that access is impossible'.
	• Inaccessible health and safety	Where there is a high risk of personal injury, for example, harvesting operations, hung trees, hazardous waste etc.
	• Inaccessible slope	Ground too steep to walk on
	• Inaccessible obstruction	High voltage fences, high fences, mineshaft, railway etc.
	• Inaccessible windblow	Dense windblow where it is impossible to pass through or hung windblow that may fall.
	• Inaccessible other	Any situation where the surveyor cannot reasonably access the area to survey. An example being where vegetation (e.g. dense gorse) stops access use 'Inaccessible other'.
Reason for Change	• No change 2nd cycle	Re measure squares only - no change since 1st cycle in section boundaries or section values
	• Real change 2nd cycle	Re measure squares only - real change since 1st cycle in section boundary or its section level values (plot type, social etc.). Not for component level changes.
	• Error change 2nd cycle	Re measure squares only – previous surveyor error at section level; boundary, value

	• Spatial error 2nd cycle • 1st Assessment 2nd cycle	Re measure squares only – Error in first cycle assessment due to inaccuracies in previous OS data or aerial photography **Always use this option if this is the 1st time a sample square is being assessed**.

S. Social use indicator data fields

Data Field	Options	Comments
Social indicator Type	Recreation Amenity Management Abuse Fire None Education, enterprise and research Not surveyed	Surveyors must not Delete the Social Indicators record, if there are no indicators use 'None'.

T. Recreation – social use sub class

• Informal Path (made through cumulative use)	Where people walk informally but there is no formal rights to this, signs, POW etc., excludes historical transport routes such as old drove roads, Roman roads etc.
• Formal Path	A planned and created pathway including Public Rights of Way and waymarked paths and historical transport routes such as old drove roads, Roman roads etc.
• Outdoor Education Activity	E.g. Forest Schools sites
• Off-road motorcycle tracks	Formal and informal
• Informal gathering / camping	E.g. wild camping
• Equestrian Use	Any equine use except grazing

• Mountain bike use • Dog Walking • Able/encouraged to roam from paths • Den Building • Value	Formal and informal Formal and informal Paths with vegetation cleared, brashing of adjacent trees, off path facilities, sighs encouraging access off the path and into the wood Evidence of den building Enter value for the above: • None • Present • More than One

U. Amenity management – social indicator sub class

• Vegetation management • Furniture • Signage	• E.g. swiping, mowing, pruning… • E.g. picnic table, benches… • E.g. interpretation/narrator boards, finger posts…

V. Abuse – social use sub class

• Litter • Fly tipping • Dog fouling	• E.g. recreational litter such as bottles, crisp packets • Deliberate tipping of industrial/household and garden waste • Self-explanatory

• Vandalism	• Deliberate damage excluding fire (recorded below)
• Farm waste	• In general high nitrogen content waste such as slurry, effluent, bedding / dung mixes from intensive farming methods
• Forestry Contractor Waste	• Covers all forestry workers. Oil drums, containers, planting bags, herbicide bottles, general litter resultant from forestry operations
• Values	• Enter values: • None = No evidence • Some = Predominately free of litter/ fly tipping/ dog fouling/ vandalism/ farm waste/ forestry waste apart from some minor accumulations/ occurrences • A lot = Heavily affected by litter / fly tipping/ dog fouling/ vandalism/ farm waste/ forestry waste with significant accumulations/ occurrences

W . Fire data fields

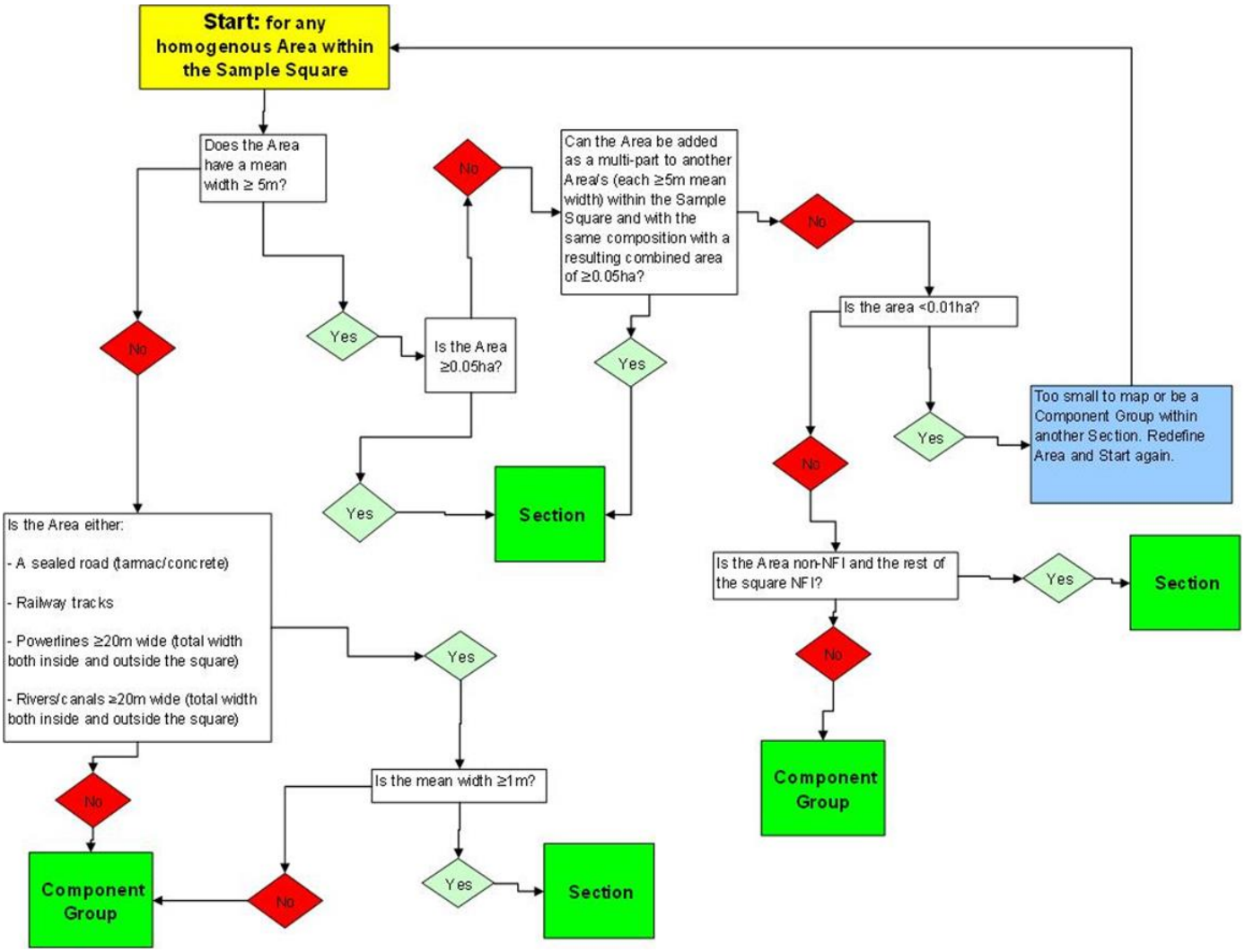
• Fire	• Exclude controlled campfires and naturally occurring fires • Enter % area affected (1-100%)

X. Education, enterprise and research data fields

• Private Enterprise	• Any form of non forestry business; Go Ape, Mountain biking etc

• Research • Education	• Any form of Research Activity • Any form of educational activity, Scout Camps, Woodland School initiatives etc.

Y . Flow chart to help the surveyor decide if an area should be a section or a component group



Z. Component attribute level data entry

Data Field	Options	Comments
%Area	Free text	Enter the % of the Section covered by this Component. See **Error! Reference source not found.** for more details.
Actual Area	*None*	Calculated by the software.
Land Use	Various Land Use options available	Assessing and choosing the correct land use at the start of the survey is key to the whole assessment as the choice determines what has to be surveyed. The main choice is between high forest or woodland and non-woodland land uses.
Broad Habitat	All habitats are available	Assess and choose the BROAD Habitat for the component.
Priority Habitat	All priority habitats are available	Competent surveyors should ALWAYS identify and choose the Priority Habitat where one is present. If priority habitats are not applicable to this area (such as built up areas) record 'Not applicable' If the habitat cannot be identified choose 'Surveyed; Unknown Habitat'. If you assess the site due to snow cover record 'Not Surveyed'.
Component Group	• 1 • 2 • 3 • 4 • 5…… • 30	State which Component Group the Component belongs to. All Components belong to a Component Group. Component Groups can be comprised of just 1 Component. Component Group numbers start at 1 and must be consecutive e.g. if there are two Component Groups in a Section

		these need to be numbered 1 and 2, not 1 and 3 etc. (no gaps in the numbering).
Shrub Acting as tree	• Yes • No	This field is to account for those individual plants which are taxonomically categorised as shrubs, but have grown to the dimensions of a tree. Examples would be a Rhododendron that has achieved ≥ 5m in height, a relatively clean stem ≥ 4cm dbh and is forming part of the canopy with tree species. If you choose this option the species list will change to provide solely those species taxonomically categorised as shrubs, but which can of occasion have the morphology of trees.
Storey	• Upper • Middle • Lower • Complex • Young Trees	
Canopy Height	• 0cm – 2m • 2m – 5m • 5m – 15m • 15m - 20m • 20m +	Estimate mean storey height of the component and record which band this falls within. For leaning or windblown trees enter the Canopy Height band the Component would have been in if VERTICAL. Dead Trees – enter Canopy Height of a whole tree (unsnapped) where possible.
Species	Various.	Tree species list unless 'shrub acting as tree' is chosen, then it becomes a shortened shrub list.
Planting Year	Free text	Estimate the Planting year of the Component. See **Error! Reference source not found.** for guidelines to estimating tree age. **DO NOT USE THE FC's SCDB TO FIND PLANTING YEAR.**

		Coppice – estimate the planting year of the stool, not the stems.
Est. Planting Year	• No • Yes	Has the planting year been estimated or is it known (from the landowner for example)?
Stems p/ha	Free text	Estimate the stems per hectare of the Component based upon the Components' density of stems within its Component Group using the guide. The minimum number of stems that can be entered is 1.
Estimated Crown Diameter	Free text.	This should be a quick visual assessment of the mean crown width of a component. This will include a broad range of widths, as would be expected with any normal distribution in a natural population and the estimate will be broad. Aim to get the mean within 1 m to 2 m of the actual value and use your plot crown width measurements at plot to self-calibrate your estimates. *This field only appears if the Section is classed as 'Inaccessible, visual assessment possible'.*
Timber Pot.	• Fuelwood potential only • Potential timber crop • Short roundwood crop	Estimate the potential of this component for one of the 3 choices. Note that for broadleaves to be considered to have Timber Potential the following rule must apply: • If > 20 years old then stems per ha must be >= 100. • If <20 years of age then stems per ha must be >= 500
Silvicultural System	• Even-aged, i.e. Clear cutting • Seed tree (Uniform shelterwood) • Strip Shelterwood • Group selection	Assess the traditional silvicultural system that applies to the stand. See OGB 7 in the Additional documents folder on the Toughbook for guidance of some of these systems. A flowchart is

	• Single tree selection • Coppice • Coppice with standards • Short Rotation Coppice • Pollarding • Group shelterwood • Other • Garden & Ornamental • None Obvious	located at the end of OGB 7 (page 56) for quick reference. Note that since silviculture systems often operate at a scale that is larger than the sample Square, that in some circumstances surveyors will need to look outside of the Square to ensure that the correct Silvicultural System is selected. A single silvicultural system is assessed for the Component Group.
NFI Woodland?	• NFI • Non NFI	Ascertain if the area in question falls within the definition of NFI woodland; i.e. is it part of a woodland ≥ 0.5 hectares in extent which has 20% or more canopy cover or the ability to achieve it with the trees on site? This includes restock sites, clearfell sites (classed as temporary unstocked) and new planting. Remember also that open areas within woodland (entirely surrounded by woodland) of up to 0.5 hectares in extent are classified as woodland. Also when assessing long thin woods remember that woods must on average be over 20 m in width, unless the area less than 20m in width is a small pinch point of less than 20m in length (which is permissible). When assessing if trees have hit the 20% threshold remember that trees must be within 20m of one another and that young trees and shrubs acting as

		trees are also included in totalling up to 20%. You can check your assessment against the NFI Woodland Map GIS layer. This may be different to what is on the ground, as not all types of woodland can be seen from the air at all times.
Rotation	• 1st rotation • 2nd rotation • More than 2 rotations • Not discernible	Estimate the number of rotations for each Component. "A rotation is a period of time (in years), normally sequential (i.e. 1st, 2nd, 3rd etc.), where an even-aged stand is planted or naturally regenerated, matures and then is felled." For Ancient woodland choose 'More than 2 rotations'
Woodland Origin – this is the origin of the Component Group, not the individual components within the Group. Only one Woodland Origin category per Component Group should be recorded.	• Plantation • Semi natural forest • Undisturbed by man	All planted components regardless of species planted or woodland management intentions i.e. whether primarily for commercial purposes or for conservation purposes Woodland composed of mainly locally-native trees and shrubs that derive from natural seed fall, suckering (sprouting from adventitious buds on the roots) or coppice, rather than from planting. A proportion of the crop may be of planted origin but the majority must originate from natural means. This generally means pristine woodland that has not been influenced either directly or indirectly by human intervention (e.g. has not been grazed by domestic animals). It is generally not thought to occur in the UK.

	• Recent natural expansion	This generally means expansion onto areas not previously wooded e.g. agricultural land. However, it could be applied either to Section/Component Group or individual components. It could also be applied to all areas with 100% site native species or any proportion of site nativeness species down to 0%.
	• Ancient forest	This is a term generally used in the UK to refer to woodland that has existed continuously since 1600 or before in England & Wales or 1750 in Scotland. Before these dates it is thought that extensive planting of new woodland was uncommon so any woodland was likely to be mostly natural in origin. This could be any Section/Component Group/Component for which the area is recognised as Ancient Woodland regardless of current status, or only those areas that appear to be semi-natural sites on previous Ancient Woodland thus taking account of field observations rather than purely the AW Layer. Most surveys split Ancient Woodland into 2 categories Ancient Semi-Natural Woodland (ASNW) and Planted Ancient Woodland Sites (PAWS). NB: If Ancient forest is chosen then Rotation must be 'More than 2 rotations'.
	Not discernible	NOT DISCERNABLE.
Tree Alive?	• Yes • No	
Propagation	• Planted	Introduced to the site as a transplant via human activity. Usually evident by the uniform location of the trees through planting in lines and trees being of the

		same species, or of a limited species range and of the same age. Often non-native. Evidence of cultivation or other establishment techniques such as tubing. Includes seed sowing.
	• Regeneration	A seedling or sapling arising from natural processes, such as a self-sown seed, distributed through natural processes, germinated and growth in situ. May be encouraged through fencing etc., seed dispersal may involve mammals or birds. Excludes seed sowing.
	• Suckers	a shoot rising from a subterranean stem or root
	• Coppice Re-growth	a shoot rising from a cut stem or stool
	• Not surveyed	
Outside Square Only?	• Yes • No	Very occasionally a circular plot will straddle a section boundary. If the stand continues outside of the square the entire plot is still valid and tree measurements must be taken across the entire plot. In some instances some of the trees outside of the square, but within the plot, will not be part of a component found within the square and for example may represent a new tree species. In these instances create a component for these trees (or tree) and mark it as 'outside square only' and set the component % area to 0%. This will enable FC data analysts to include the component data within the mensuration assessment, but exclude it for other

		assessments such as woodland condition.
Est. Top Height (m)	Free text to 1 decimal place	Estimate the mean total height of the component. This field only appears if the Section is classed as 'Inaccessible, visual assessment possible', windblow and also for all Dead Stem Components.
Est. Mean DBH (cm)	Free text (whole number)	Estimate the mean DBH of the component. This field only appears if the Section is classed as 'Inaccessible, visual assessment possible', windblow and also for all Dead Stem Components.

AA . Ancient Woodland Indicators

- Indicator plants –
    - including Soft Shield fern, Hay-scented Buckler fern, Wood Sedge, Remote Sedge, Hairy-brome, Giant Fescue, Sanicle, Woodruff, Enchanter's Nightshade, Dog's Mercury, Wood Speedwell, Wild Garlic and Bluebell.
    - In southern Britain add Greater & hairy Woodrushes, Wood Anemone and Wood Sorrel
- Tree Species – see **Error! Reference source not found.**: Earliest planting dates for Conifers and **Error! Reference source not found.**: Earliest planting dates for Broadleaves
- Diversity and combination of tree and plant species
- Diversity in age classes
- Presence of veteran trees
- Age of trees
- Presence of wood banks (ancient woodland boundary markers – often with a stockade to keep out grazing animals)

- Stump sizes
- Evidence of old woodland industries (e.g. charcoal pits) or coppicing/pollarding
- Woodland location – steep sites tended to remain woodland for longer as they were harder to clear and unsuitable for grazing animals
- Woodland proximity to urban areas very far away or very close are often ancient woodland candidates, as these were either too far away from people to be exploited or communities kept woods close at hand for a ready supply of building materials and firewood, especially so in areas without stone or peat.
- Evidence of old tracks (sunk or incised, with veteran trees and hedging)
- Woodland names. As most place names in Britain were established well before 1600 any woodland areas which have woodland names or woodland as part of their name are more likely to be ancient. Especially if the names are in old languages; Gaelic, Welsh, Norse or Anglo-Saxon.
    - For example;
        - 'Thwaite', thveit (as in Arnthwaite) which comes from Old Norse meaning: 'a piece of land cleared from forest or reclaimed from wasteland'.
        - 'Keith' (as in Dalkeith, Keithley), Cold, Coat, Ced, Cet or Cot in English, are all remnants or borrow words from the old Welsh word for woodland. Coedd or Cot in modern Welsh. Cos in Cornish.
        - Coille, Killi, Kil, Kill, Kellie, Cellie - Gaelic for wood.
        - Ros, Rois- Gaelic for wood. –
        - Doire - Gaelic for small wood or grove
        - Lee, or leah, coming from the Old English for village in a clearing or wooded area
        - Holt and Hyrst - Old English for wood
        - Fyrhthe, ffridd, fyrhth woodland, scrub on banks (old Welsh / Welsh)
        - Grove, Grave, Graefe, Graf, Grafa, Old English for coppiced wood
        - Wood, wald. Weald - Old English for coppiced wood

- Similarly place names with tree species within them or woodland animals can denote ancient woodland roots.

If a surveyor feels that, based upon the indicators above, they interpret that the woodland is probably ancient woodland then it should be a Section or Component Group depending upon its total extent within the Square.

BB Land use codes and explanations

Land Use	**Description**
Agricultural land	Land in use for animal husbandry, biofuel (e.g. short rotation coppice), intensively managed commercial orchards or arable use.
Ancient and Ornamental	The use of this coding is restricted to specifically identified woodland within the New Forest. This needs to be confirmed with the FC District office in Lyndhurst.
Arboreta	Allocated to all Arboreta whether officially recognised or not. Include the surrounding or associated woodland managed with it. Areas with trees which primarily have an educational role may be included in this category.
Archaeological sites	This classification should take priority over all other land uses (including woodland) on or within the site in question. *If the Section is woodland then record as an IFT to get mensuration assessments and then note Monument etc. in Components.*
Burnt	Area of high forest destroyed by fire and where more than 80% of the trees have been killed.
Cabins / Holiday House	Land which is managed by Forest Holidays Joint Venture Company only. For FD run campsites see Other Recreation (FRO). NOT to be used for a wooded campsite/caravan park as per the NFI definition of a Treed Section (Section is deemed to be Treed and therefore should be PHF).
Campsite (also wild camping)?	Land which is managed or run for campsites, see Other Recreation (FRO). NOT to be used for a wooded campsite/caravan park as per the NFI definition of a Treed Section (Section is deemed to be Treed and therefore should be PHF).

Land Use	Description
Car Parks/Picnic Areas	Allocated at Section level if large enough, otherwise as a Component/Component Group with the surrounding crop. All woodland within car parks (i.e. islands) should be classified as Car Parks/Picnic Areas, but surrounding woodland, despite any influence on its management because of its proximity to the site should be classified normally (e.g. high forest).
Christmas Trees	This should only be used when it represents the main land use.
Commercial Orchard	Intensively managed for fruit production, composed of short lived dwarf or bush fruit trees, often on frames, less than 2m, no high canopy formed. Not of 'woodland character'.
Deer glades	Allocated to areas specifically used for deer management.
Failed	Treed areas planted within the previous 15 years which have less than 20% of the appropriate management table stocking. For the NFI surveyors will need to be able to see dead, young trees indicating that the area has actually failed. If these cannot be seen then the area is deemed open.
Felled	Felled areas, formerly high forest or windblow. Where an area is known to have been felled >10 years previously and has <20% canopy cover (or does not have the ability to achieve this through maturation of the current tree stock) then reallocate this area to another Land Use. For the NFI if any area has trees on it 'Felled' should not be used. This category is only for unplanted/regenerated areas where felling has taken place.
High Forest	Woodland which cannot otherwise be classified as arboreta, Ancient & Ornamental, Christmas trees, pockets of windblow, coppice, research area or seed stand. There should be a canopy cover of at least 20% (or in the case of younger crops, the ability to achieve this once matured).
Information Centre	Primarily applies to a building and its immediate surrounds such as lawns and car parks. May include areas with trees which primarily have an educational role but which are only a minor component of the site. Such sites can generally be recognised at the Section level.
Linear Feature and Open Space associated with Linear Feature	Do not use, use Permanent Open space associated with linear feature.

Land Use	Description
Mineral Working	Land with Mineral Working by Non-FC companies/organisations. This can be FC or non-FC land. Once abandoned or reclaimed, these areas may need to be reclassified as appropriate
Non-plantation research	Woodland/forest research sites, often designated with signage.
Nursery	Where land is managed as a nursery for plant production.
Open	Including: o wayleaves / rights of way; o unplanted hilltops and deer forests (usually large areas retained for management reasons which are likely to remain unplanted because of their altitude); o Areas of land within the forest block that have less than 20% canopy cover.
Open Water	Allocated to all land areas dominated by standing water for most of the year.
Other Built Facility	This should include the immediate surrounding area, down to 0.05ha (0.01ha if non-NFI in NFI) hectare. The code relates to non-residential buildings excluding Information Centres.
Other Recreation	Includes all other facilities provided specifically for public enjoyment. This includes campsites and cabin sites managed by Forest Districts and NOT the Forest Holidays Joint Venture Company. NOT to be used for a wooded campsite/caravan park as per the NFI definition of a section with trees (Section is deemed to have trees and therefore should be PHF).
Partially Intruded Broadleaf	Areas of low quality woody species (in terms of timber production) found in intimate combination with other plantation woodland. They are always allocated component status (i.e. never mapped) and are in most cases of natural origin but can result from past planting.
Permanent Open space associated with a linear feature	Land lost to permanent roads and tracks – sealed (tarmacadam or concrete) and metalled or water (river, canals).
Plantable land	Bare land immediately available for planting e.g. new land acquisitions. FC land only. Should be held as open on non-FC land.
Quarries	FC mineral working site, whether used or abandoned.
Research Plantation	The surround of any experiment should be included. In general the area should be given Section status. However,

Land Use	Description
	where the area is too small, the area should be classed as a component.
Residential	This should include the immediate surrounding area. It is permissible to allocate them section status down to 0.05ha (0.01ha if non-NFI within an NFI Section) hectare.
Seed Stand	An area of high quality trees that are harvested for their seeds.
Seed Orchard	An intensively-managed plantation of specifically arranged trees for the mass production of genetically improved seeds to create plants, or seeds for the establishment of new forests.
Traditional Orchard	Fruit or nut trees planted at low densities, usually of varying age structure and over 2m in height to form a canopy. Presence of fallen and standing deadwood. Presence of shrubs and scrub in unmanaged sites and hay cutting in managed sites. Of 'woodland character'.
Unplantable or bare	Unstocked area associated with High Forest that is too small to treat as a Component Group is recorded as a component in the same Component Group as the high forest; (i.e. areas less than 0.01ha or several smaller areas the sum of which might add up to more than 0.01ha but which are scattered around the Section).
Unplanted streamsides	This category should reflect active management practices to maintain the unwooded state of water margins. Any planted or naturally occurring woodland too small to map as a Section should be separately recognised as a component or Component Group (allocated to high forest etc.).
Windblow - Dead	Areas of blown high forest which remain uncleared and are dead (e.g. no evidence of green cambium).
Windblow - Live	Areas of blown high forest which remain uncleared and are still alive (e.g. evidence of green cambium).
Worked Coppice	Areas actively managed under the coppice system. When in mixture with high forest crops (Coppice with standards), a component of each is recorded and use made of the 'storey' code to distinguish them.
Abandoned coppice	Stands of coppice that were worked in the past but have fallen into disuse and are not actively worked anymore. Generally this would mean that the coppice has not been cut for greater than 10 to 20 years.

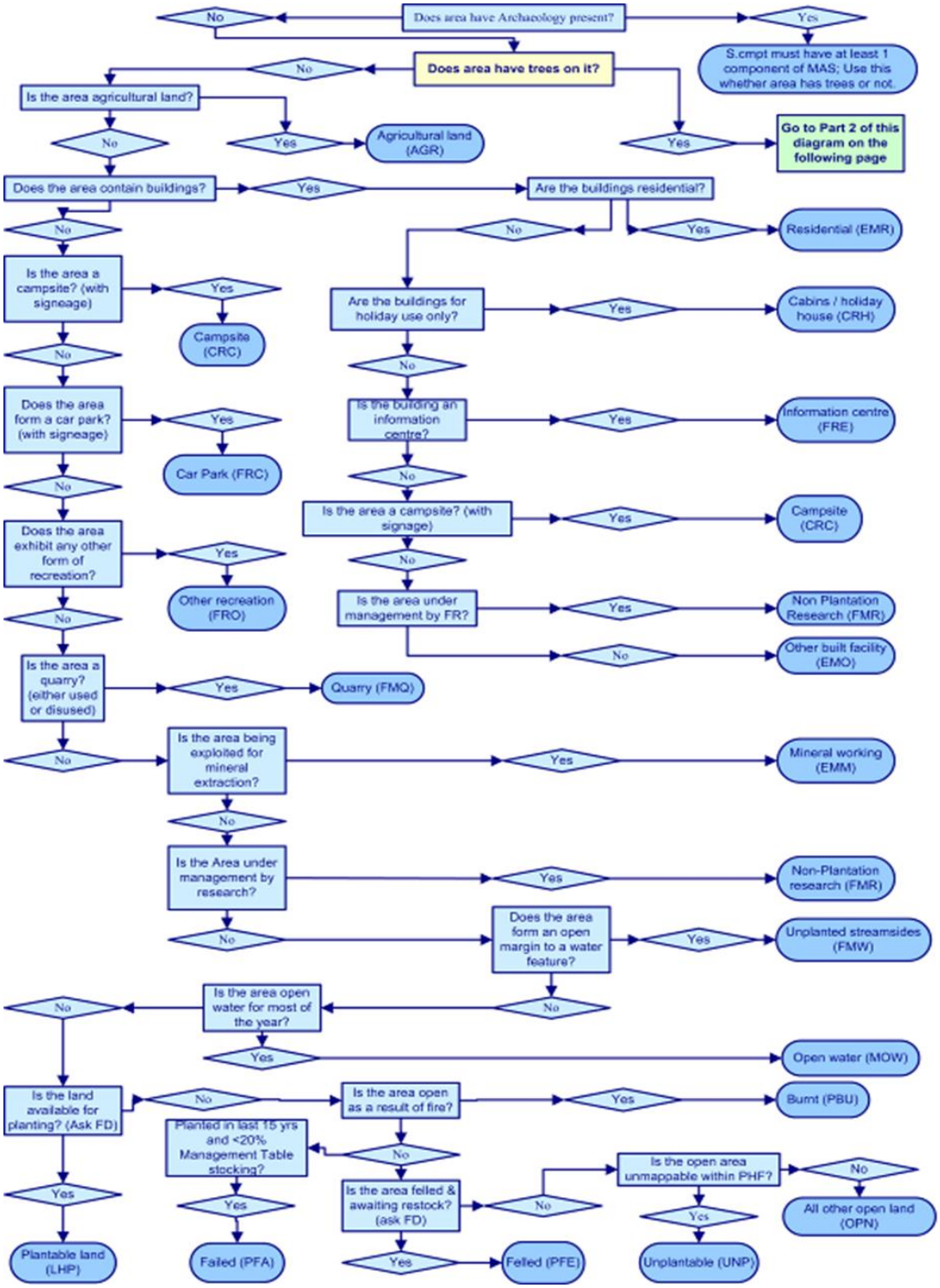
Note:

Open Landuse: This can include grassy rides, open space next to streams, powerlines, gas lines etc. roadside verges etc., which all qualify as Permanent Open space.

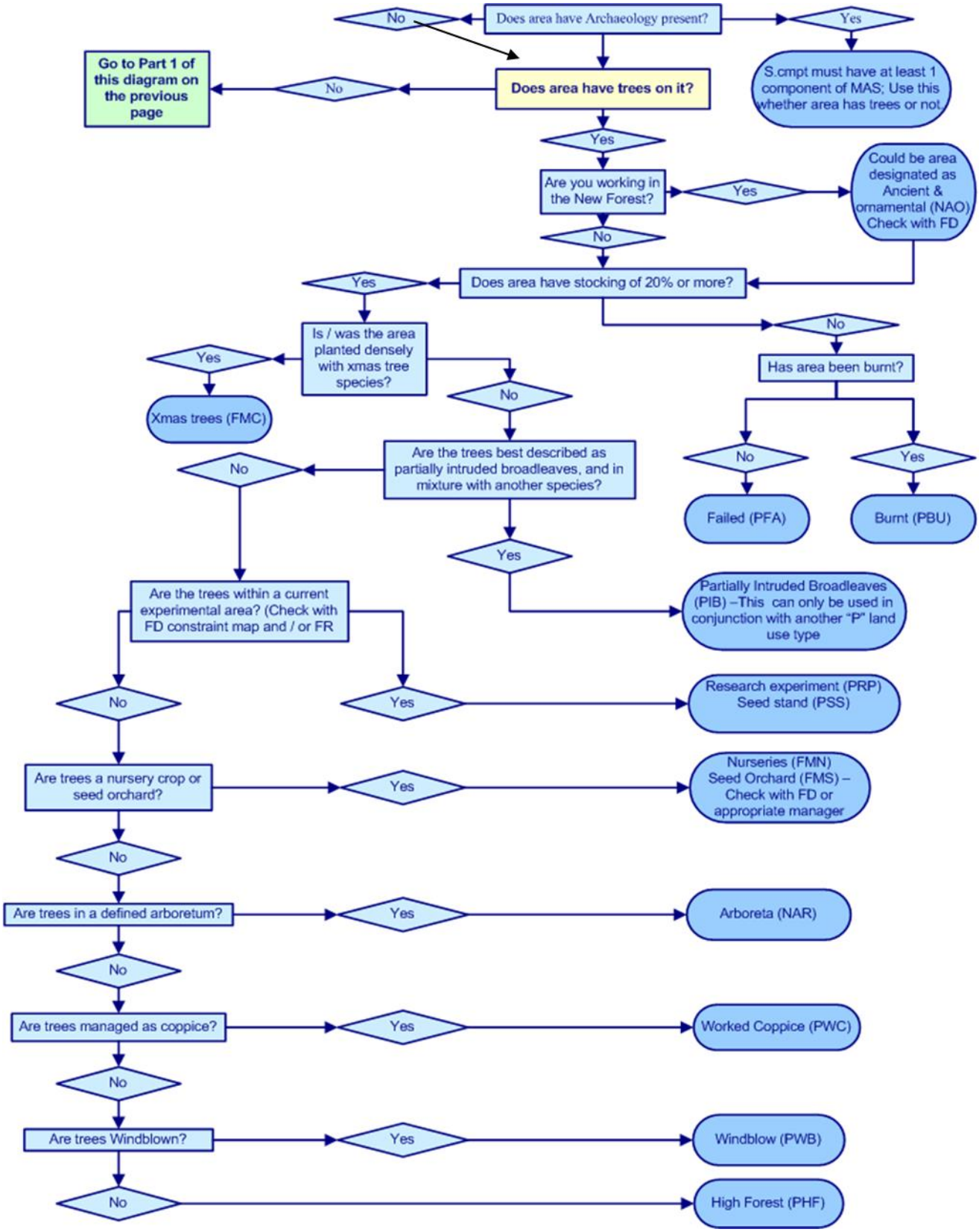
It can also include Unsealed\metalled roads which are ‘turning back to nature’ and which are not maintained for use by vehicles. Any area of land that could easily revert to woodland within 50 to 100 years

'Permanent Open Space Associated with a Linear Feature'. Includes Unsealed\metalled roads and tracks maintained for use by vehicles plus operational railway tracks, rivers and canals. Any area of land that is unlikely to woodland within 50 to 100 years.

CC . Flow Chart; land use areas without trees



DD . Land use; land use with trees



EE . Broad Habitat List

ACID GRASSLAND
ARABLE/HORTICULTURE
BOGS
BOUNDARY & LINEAR FEATURES
BRACKEN
BROADLEAVED;MIXED/YEW WOODLANDS
BUILT UP AREAS & GARDENS
CALCAREOUS GRASSLAND
CONIFEROUS WOODLANDS
CONTINENTAL SHELF SLOPE
DWARF SHRUB HEATH
FEN; MARSH/SWAMP
IMPROVED GRASSLAND
INLAND ROCK
INSHORE SUBLITTORAL ROCK
INSHORE SUBLITTORAL SEDIMENT
LITTORAL ROCK
LITTORAL SEDIMENT
MONTANE HABITATS
NEUTRAL GRASSLAND
OCEANIC SEAS
OFFSHORE SHELF ROCK
OFFSHORE SHELF SEDIMENT
RIVERS & STREAMS
STANDING OPEN WATER/CANALS
SUPRALITTORAL ROCK
SUPRALITTORAL SEDIMENT

FF . Priority Habitat List

Priority Habitats	**Priority Habitats**	**Priority Habitats**
Aquifer fed naturally fluctuating water	**Lowland Beech/Yew Woodlands**	*Sabellaria alveolata* reefs
Arable Field margins	Lowland calcareous grassland	*Sabellaria spinulosa* reefs
Blanket bog	Lowland dry acid grassland	Saline lagoons

Priority Habitats	**Priority Habitats**	**Priority Habitats**
Blue Mussel Beds on Sediment	Lowland Fens	Seagrass beds
Calaminarian grasslands	Lowland heathland	Seamount Communities
Carbonate Mounds	Lowland meadows	*Serpulid* reefs
Coastal & floodplain grazing marsh	**Lowland Mixed Deciduous Woodland**	Sheltered muddy gravels
Coastal saltmarsh	Lowland raised bog	Sublittoral sands/gravels
Coastal sand dunes	Machair	Tide Swept Channels
Coastal vegetated shingle	Maerl beds	**Traditional Orchards**
Cold-water Coral Reefs	Maritime cliff/slopes	**Upland Birchwoods**
Deep Sea Sponge Communities	Mesotrophic lakes	Upland calcareous grassland
Estuarine Rocky Habitats	Mountain Heaths & Willow Scrubs	Upland Flushes, Fens & Swamps
Eutrophic standing waters	Mud habitats in deep water	Upland hay meadows
File Shell Beds	**Native Pine Woodlands**	Upland heathland
Fragile Sponge and Anthozoan Communities on Subtidal Rocky Habitats	**Non-HAP Native Pine**	**Upland Mixed Ashwoods**
Hedgerows	Oligotrophic and Dystrophic Lakes	**Upland Oakwoods**
Horse Mussel Beds	Open Mosaic Habitats on Previously Developed Land	**Wet Woodland**
Inland Rock Outcrop and Scree Habitats	Peat & Clay Exposures with Piddocks	**Woodpasture & Parkland**
Intertidal Chalk	Ponds	
Intertidal Mudflats	Purple moor grass/rush pastures	
Intertidal Underboulder Communities	Reedbeds	
Limestone pavements	Rivers	

GG . NFI Tree Species

Common Name	Latin Name	Notes
Alder	*Alnus spp*	
Armand's pine	*Pinus armandii*	
Ash	***Fraxinus excelsior***	
Aspen	*Populus tremula*	
Atlas cedar	*Cedrus atlantica*	
Austrian pine	*Pinus nigra var nigra*	
Beech	***Fagus sylvatica***	Regarded as native for NFI purposes throughout all of GB
Bhutan pine	*Pinus wallichiana*	
Big leaf maple	*Acer macrophyllum*	
Birch (downy/silver)	***Betula pubescens/pendula***	
Bird cherry	***Prunus padus***	
Bishop pine	*Pinus muricata*	
Black poplar	***Populus nigra***	
Black walnut	*Juglans nigra*	
Blackthorn	***Prunus spinosa***	
Bornmullers fir	*Abies bornmuelleriana*	
Box	***Buxus spp***	
Calabrian pine	*Pinus brutia*	
Cedar of Lebanon	*Cedrus libani*	
Cider gum	*Eucalyptus gunnii*	
Coast redwood	*Sequoia sempervirens*	
Common alder	***Alnus gultinosa***	
Common lime	*Tilia europaea*	
Common walnut	*Juglans regia*	
Corsican pine	*Pinus nigra var maritima*	
Crab apple	***Malus sylvestris***	
Crack willow	***Salix fragilis***	
Douglas fir	*Pseudotsuga menziesii*	
Downy birch	***Betula pubescens***	
Downy oak	*Quercus pubescens*	
Elder	***Sambucus nigra***	
Elm	*Ulmus spp*	
English elm	***Ulmus procera***	
European larch	*Larix decidua*	
European silver fir	*Abies alba*	

Field maple	***Acer campestre***	
Goat willow	***Salix caprea***	
Grand Fir	*Abies grandis*	
Grecian fir	*Abies cephalonica*	
Green alder	*Alnus viridis*	
Grey alder	*Alnus incana*	
Grey poplar	*Populus canescens*	
Grey willow	*Salix cinerea*	
Hawthorn species	*Crataegus spp*	
Hazel	***Corylus avellana***	
Holly species	***Ilex spp***	
Holm oak	*Quercus ilex*	
Hornbeam	***Carpinus betulus***	
Horse chestnut	*Aesculus hippocastanum*	
Hungarian oak	*Quercus frainetto*	
Hybrid larch	*Larix x eurolepis*	
Hybrid poplar	*Populus serotina/trichocarpa*	
Italian alder	*Alnus cordata*	
Japanese cedar	*Cryptomeria japonica*	
Japanese larch	*Larix kaempferi*	
Juniper	***Juniperus communis***	
Korean pine	*Pinus koreana*	
Large-leaved lime	***Tilia platyphyllos***	
Lawsons cypress	*Chamaecyparis lawsoniana*	
Lenga	*Nothofagus pumilio*	
Leyland cypress	*Cupressocyparis leylandii*	
Lime	*Tilia spp*	
Loblolly pine	*Pinus taeda*	
Lodgepole pine	*Pinus contorta*	
London plane	*Platanus x acerifolia*	
Macedonian pine	*Pinus peuce*	
Maritime pine	*Pinus pinaster*	
Mexican white pine	*Pinus ayacahuite*	
Mixed broadleaves	For use in Dead Tree Components and in situations where there are a lot (40+) different species of broadleaf in the Section – e.g. in an arboretum	

Mixed conifers	For use in Dead Tree Components and in situations where there are a lot (40+) different species of conifer in the Section – e.g. in an arboretum	
Monterey pine	*Pinus radiata*	
Mountain pine	*Pinus uncinata*	
Narrow-leafed ash	*Fraxinus angustifolia*	
Noble fir	*Abies procera*	
Nordmann fir	*Abies nordmanniana*	
Norway maple	*Acer platanoides*	
Norway spruce	*Picea abies*	
Oak (robur/petraea)	***Quercus spp***	
Oriental beech	*Fagus orientalis*	
Oriental spruce	*Picea orientalis*	
Paper-bark birch	*Betula papyrifera*	
Pedunculate/common oak	***Quercus robur***	
Plane spp	*Platanus spp*	
Ponderosa pine	*Pinus ponderosa*	
Pyrenean oak	*Quercus pyrenaica*	
Raoul/rauli	*Nothofagus nervosa*	
Red alder	*Alnus rubra*	
Red ash	*Fraxinus pennsylvanica*	
Red oak	*Quercus borealis*	
Red (pacific silver) fir	*Abies amabilis*	
Roble	*Nothofagus obliqua*	
Rowan	***Sorbus aucuparia***	
Scots pine	***Pinus sylvestris***	Regarded as native in Lots: 85 to 108 only
Serbian spruce	*Picea omorika*	
Sessile oak	***Quercus petraea***	
Shagbark hickory	*Carya ovata*	
Shining gum	*Eucalyptus nitens*	
Silver birch	***Betula pendula***	
Silver maple	*Acer saccharinum*	
Sitka spruce	*Picea sitchensis*	
Slash pine	*Pinus ellottii*	
Small-leaved lime	***Tilia cordata***	
Smooth-leaved elm	*Ulmus carpinifolia*	

Sweet chestnut	*Castanea sativa*	
Sycamore	***Acer pseudoplatanus***	Regarded as native within the NFI
Tulip tree	*Liriodendron tulipifera*	
Turkey oak	*Quercus cerris*	
Wellingtonia	*Sequoiadendron giganteum*	
Western hemlock	*Tsuga heterophylla*	
Western red cedar	*Thuja plicata*	
Western white pine	*Pinus monticola*	
Weymouth pine	*Pinus strobus*	
White ash	*Fraxinus americana*	
White oak	*Quercus alba*	
White poplar	*Populus alba*	
White willow	***Salix alba***	
Whitebeam	***Sorbus aria***	
Wild cherry/gean	***Prunus avium***	
Wild service tree	***Sorbus torminalis***	
Wych elm	***Ulmus glabra***	
Yew	***Taxus baccata***	
Yunnan pine	*Pinus yunnanensis*	
other birches	*Betula spp*	
other broadleaves		
other Cedar	*Cedrus spp*	
other cherry spp	*Prunus spp*	
other conifers		
other Eucalyptus	*Eucalyptus spp*	
other firs (Abies)	*Abies spp*	
other larches	*Larix spp*	
other Nothofagus	*Nothofagus spp*	
other oak spp	*Quercus spp*	
other pines	*Pinus spp*	
other poplar spp	*Populus spp*	
other spruces	*Picea spp*	
other walnut	*Juglans spp*	
other willows	*Salix spp*	

HH . Earliest known planting dates for Conifers in GB

Species	Approximate introduction date
Austrian Pine	1835
Coast redwood	1846
Corsican pine	1759
Douglas fir	1826
European Larch	1732
Grand Fir	1831
Hybrid larch	1897
Japanese Cedar	1846
Japanese Larch	1861
Lodgepole Pine	1853
Maritime Pine	1596 (restricted in plantations to the New Forest & Wareham with some semi-naturalised pockets in west Surrey and Northamptonshire).
Noble Fir	1831
Norway Spruce	1750
Sitka Spruce	1831
Wellingtonia	1853
Western Hemlock	1851
Western Red Cedar	1853

II . Earliest known Planting dates for Broadleaves in GB

Species	Approximate introduction date
Common Walnut	1656
Downy Oak	c1600
Holm oak	1780
Horse chestnut	c1500
Lime, non-native	1820
Norway maple	c1685
Shining gum	1902

JJ . Stems per hectare for given metric mean spacing between trees

Spacing/m	Stems/ha	Spacing/m	Stems/ha	Spacing/m	Stems/ha
1.0	10000	4.0	625	7.0	204
1.1	8264	4.1	495	7.1	198
1.2	6944	4.2	567	7.5	178
1.3	5917	4.3	541	8.0	156
1.4	5102	4.4	517	8.5	138
1.5	4444	4.5	494	9.0	123
1.6	3906	4.6	473	9.5	111
1.7	3460	4.7	453	10.0	100
1.8	3086	4.8	434	10.5	91
1.9	2770	4.9	416	11.0	83
2.0	2500	5.0	400	11.5	76
2.1	2268	5.1	384	12.0	69
2.2	2066	5.2	370	12.5	64
2.3	1890	5.3	356	13.0	59
2.4	1736	5.4	343	13.5	55
2.5	1600	5.5	331	14.0	51
2.6	1479	5.6	319	14.5	48
2.7	1372	5.7	308	15.0	44
2.8	1276	5.8	297	15.5	42
2.9	1189	5.9	287	16.0	39
3.0	1111	6.0	278	16.5	37
3.1	1041	6.1	269	17.0	35
3.2	977	6.2	260	17.5	33
3.3	918	6.3	252	18.0	31
3.4	865	6.4	244	18.5	29
3.5	816	6.5	237	19.0	28
3.6	772	6.6	230	19.5	26
3.7	730	6.7	223	20.0	25
3.8	693	6.8	216	20.5	24
3.9	657	6.9	210	21.0	23

KK . Vegetation layer drop down menu

Data Field	Options	Comments
Layer	Not surveyed	For use where vegetation cannot be assessed. E.g. due to snow cover, flooding etc., or the surveyor could not complete the assessment for any other reason.
	Not Applicable	For landuses where no surface vegetation can physically occur such as deep open water, tarmacadam, a road, caravan standings etc., or the protocol does not require assessment against that landuse.
	None	None; means no vegetation at all within the 0-5m band where it may be expected to grow. For example where growth is inhibited due to artificial substrates; Astroturf, rubber chips, or matting, or natural products such as sand, mulch matting, bark chips etc.
	Ground Cover	To qualify as a ground layer category it must be: • A non-plant category at ground level (e.g. soil, water) or, • A plant category ≤10 cm high estimated for the middle of the growing season. The surveyor is not expected to search every square centimetre of the Section to ensure every single plant species has been accounted for. However the main categories present should become evident as the whole survey is progressed over the day/days. In turn these should be recorded. This 'broad sweep' assessment can be calibrated against the plant categories located near to mensuration assessment areas. Plants/plant groups intimately mixed with a taller field layer do not qualify.

	Field Layer	Herbaceous vegetation, woody perennials and sapling trees, over 10 cm tall and <2 m, including woody perennials such as honeysuckle, bramble, raspberry etc. It may also include tree seedlings, saplings and suckers and shrub species which do not exceed the surrounding vegetation by 50 cm in height.
	Shrub Layer	Shrub Layer (≈2 - 5m) – the majority of the 'canopy' of the plant/group needs to be within the height band to qualify as Shrub layer. Includes woody plants which are less than 5m tall or, if taller, has at least 50% of their crown volume below 5m, and must exceed the surrounding field or ground layer vegetation by at least 50cm in height.

LL . Ground layer drop down menu

Category	**Comments**
Aquatic Plants	
Bare Soil	
Cotton-grass – Hare's-tail	
Cotton-grass – other	
Fungi	
Grasses – Broadleaf	Leaf blade is flat (has a top, bottom and two edges) and may be very narrow (1mm). Only applicable in this level if the site is regularly grazed throughout the year or heavily suppressed.
Grasses – Fineleaf	Leaf blade tightly in-rolled i.e. bristle like. Only applicable in this level if the site is regularly grazed throughout the year or heavily suppressed.
Honeysuckle	
Ivy	
Leaf Litter	
Lichens	
Mosses and Liverworts	
Other Plants: Native	Where a plant does not fit into any of the other categories, e.g. violets, wood sorrel

Other non-native plants	Where a plant does not fit into any of the other categories, e.g. violets, wood sorrel and is non-native
Rock	
Tree Seedlings: Native	Ensure that Seedling Tree Storey Components are completed
Tree Seedlings: Non-native	Ensure that Seedling Tree Storey Components are completed
Tree Suckers: Native	Ensure that Seedling Tree Storey Components are completed
Tree Suckers: Non-native	Ensure that Seedling Tree Storey Components are completed
Water	

MM . Field layer drop down menu

Category	**Comments**
Agricultural Crop	
Bilberry	
Blackthorn	
Box	
Bracken	
Bramble	
Broom	
Buddleia	If this plant is seen it must be notified.
Cotoneaster: non-native	If this plant is seen it must be notified.
Cotton-grass – Hare's tail	
Cotton-grass – other	
Dogwood	
Dwarf Shrubs – Other	
Dwarf shrubs – Heather (Calluna)	
Elder	
Ferns	
Forbs	Definition: Non-woody, herbaceous plants (excluding grasses, sedges and rushes) that die back each winter or last only one season.
Giant Hogweed	If this plant is seen it must be notified.
Giant-rhubarb (*Gunnera*)	If this plant is seen it must be notified.
Gorse – Common	
Gorse – Dwarf	
Gorse – Western	

Grasses – Broadleaf	Leaf blade is flat (has a top, bottom and two edges) and may be very narrow (1mm).
Grasses – Fineleaf	Leaf blade tightly in-rolled i.e. bristle like.
Himalayan Balsam	If this plant is seen it must be notified.
Honeysuckle	
Horsetails	
Hottentot-fig	If this plant is seen it must be notified.
Ivy	
Japanese Knotweed	If this plant is seen it must be notified.
Juniper	
Laurel	
Mosses and Liverworts	
Other plants - Native	
Other Plants: Non-native	
Other Shrubs: Native	
Other Shrubs: Non-native	
Other Woody Climbers	E.g. clematis, dog-rose.
Ragwort	If this plant is seen it must be notified.
Rhododendron	If this plant is seen it must be notified.
Rushes	
Sedges	
Shallon	If this plant is seen it must be notified.
Snowberry	If this plant is seen it must be notified.
Spanish Bluebell	If this plant is seen it must be notified.
Spindle	
Tree Saplings: Native	Ensure that Sapling Tree Storey Components are completed
Tree Saplings: Non-native	Ensure that Sapling Tree Storey Components are completed
Tree Seedlings: Native	Ensure that Sapling Tree Storey Components are completed
Tree Seedlings: Non-native	Ensure that Sapling Tree Storey Components are completed
Tree Suckers: Native	Ensure that Seedling/Sapling Tree Storey Components are completed
Tree Suckers: Non-native	Ensure that Seedling/Sapling Tree Storey Components are completed
Wild Privet	
Wood-rushes	

NN . Shrub layer drop down menu

Category	Comments
Blackthorn	Do not use – this is defined within the NFI as a tree species only and should be recorded as a Component.
Box	
Broom	
Buddleia	If this plant is seen it must be notified.
Cotoneaster: Non-native	If this plant is seen it must be notified.
Dogwood	
Elder	
Giant Hogweed	If this plant is seen it must be notified.
Gorse – Common	
Gorse – Dwarf	
Gorse – Western	
Honeysuckle	
Ivy	
Juniper	
Laurel	
Other plants - Native	
Other Plants: Non-native	
Other Shrubs: Native	
Other Shrubs: Non-native	
Other Woody Climbers	E.g. clematis, dog-rose.
Rhododendron	If seen this plant must be recorded.
Shallon	If seen this plant must be recorded.
Snowberry	If seen this plant must be recorded.
Spindle	
Tree Saplings: Native	Ensure that Sapling Tree Storey Components are completed
Tree Saplings: Non-native	Ensure that Sapling Tree Storey Components are completed
Tree Suckers: Native	Ensure that Seedling/Sapling Tree Storey Components are completed
Tree Suckers: Non-native	Ensure that Seedling/Sapling Tree Storey Components are completed
Wild Privet	

OO . Vegetation drop down menu

Data Field	Options	Comments
Vegetation Name	Varies depending upon Layer Data Field choice	
Shrubs acting as trees (NB: Only visible if 'Shrub Layer' is chosen in the Layer data Field)	<null>	
Yes	Decide if the Shrub Layer vegetation chosen in the Vegetation Name is acting as a tree layer (see below). To answer 'Yes' the shrubs must be measurable (DBH ≥7cm).	
% Cover	Free text	Enter % of Component area covered by the vegetation category (0-100%). 0% can be used in the rare circumstances where surveyors are certain that there is only a tiny coverage of the category (e.g. a single plant type)
If Rhododendron is chosen in the Vegetation name the following Data Fields appear:		
Height Class	• Less than 1.3m • More than 1.3m • No Rhododendron	
Management evidence	• No • Yes • Not Surveyed	Is there evidence of management of the Rhododendron?
Evidence of *P. ramorum*	• No • Yes • Not Surveyed	Is there evidence of *Phytopthera ramorum*?

PP . Browsing damage data fields

Data Field	Options	Comments
Browsing Damage	No Yes Not Applicable Not Surveyed	 If Yes then further fields appear (see rest of table). Not Applicable –use for when trees are protected (either singly or in small groups) e.g. tubes, or where trees cannot be accessed for assessment.
Browsing Frequency	None <20% damaged 20-80% damaged >80% damaged	This Data Field relates to the % of trees within the Component that show evidence of browsing.
Browsing Severity	<20% browsed 20-80% browsed >80% browsed	Of those trees that have been browsed only, what is the mean proportion of the tree that has been browsed?

QQ . Bark stripping damage

Data Field	Options	Comments
Stripping Location	• None • Not Applicable • Up to 0.5m • 0.5m – 1.8m • 1.8m • Not Surveyed	If anything other than None or Not Applicable then further fields appear. Not Applicable – use for when trees are in tubes or other protection (singly or in small groups) or for trees that cannot be accessed for assessment.
Damage Frequency	• <20% damaged • 20-80% damaged • >80% damaged	This Data Field relates to the % of trees within the Component that show evidence of bark stripping.
Stripping Severity	• Majority of Trees	Of those trees that have been damaged, will the majority of them Survive or Die due to the damage?

	Damaged will Survive • Majority of Trees Damaged will Die	

RR . Plant Health Data Fields

Data Field	Options	Comments
General Poor Health	Yes No Not Applicable Not surveyed	• Not Applicable – for use when the trees cannot be accessed for assessment
Crown Dieback	 Yes No Not Applicable Not Surveyed	• Death of branches in the upper crown rather than needle/leaf loss. Not Applicable – for use when the trees cannot be accessed for assessment
Stem Decay	Yes No Not Applicable Not Surveyed	Areas of exposed wood evidently decayed, or a cavity has formed, or fruit bodies of wood-rotting fungi form on bark or exposed wood. • Not Applicable – for use when the trees cannot be accessed for assessment
Poor Health Indicators	None Not Applicable Mechanical Damage Snow damage	Not Applicable – for use when the trees cannot be accessed for assessment From harvesting vehicles, e.g. abrasion Branches, and occasionally stems, permanently

SS . Management intervention data fields

Data Field	Options	Comments
Management	• Less than 3 years old • Approx. 3-10 years • Approx. 10-40 years • Approx. 40 plus years • Not surveyed • None • Greater than 3 years ago	Try to assess the approximate time period when the intervention occurred and assign either a 'less than 3 years' category or one of the 'approx.' categories. If you cannot discern an 'approx.' category record 'greater than 3 years ago'. Only use if you cannot discern into the 'approx.' categories. The previous surveyor did not have access to the 'approx.' categories, so you will find some records that need updating from this category. Where a management intervention has occurred within 3 years and after 3 years record the intervention multiple times and assign to multiple time categories. The exception to this rule is where Thinning has occurred more than once and how many times and when is not discernible (see below).
Category	• Brashing • Cleaning	Removal of the lower dead tree branches of the Component up to about two metres. This does not include inspection brashing racks (paths) but does include patch brashing for e.g. educational use

Data Field	Options	Comments
	• Clearfell • Coppicing • Draining • Fencing – Partial • Fencing – Complete • Planting • Pollarding • Pruning • Weeding • Brash - removal / mulched / burned • De-stumped • Mounded	The removal of unwanted broadleaves and woody shrubs usually before canopy closure The site has been clearfelled Trees that are cut near ground level causing them to intentionally produce many new stems The site has open drains dug to drain water Fencing that has fully/partially collapsed and is no longer acting as a complete barrier Fencing that is whole within the square and as far as can practically be seen outside the square A Component planted within the last five years. A pollard is a tree with branches which have been cut back to the trunk, above browsing height, so that it may produce a dense growth of new shoots Removal of selected branches to improve the end-product Removal of competing vegetation during the establishment phase of the trees Lying branches and deadwood has been removed or mulched Tree stumps are removed

Data Field	Options	Comments
	• Ploughed – Single mouldboard • Ploughed – Double mouldboard • Ripped • Scarified • Windrowed • Other • Thinning Once • Thinning more than once • Orchard	Site has mounds of earth across it in preparation for planting Ploughed – the earth from the plough line is all to 1 side As above but earth is gathered on both sides of plough line A ploughing method to break up iron pans A method for clearing planting lines by clearing brash and vegetation and leaving the soil bare Timber and/or stumps which are pushed into lines after clearfelling An intervention not included in any of the other options Thinning – only record the timing of the most recent thinning event – whether <3yrs old or ≥3 years old. Do not record thinning twice. The site has been turned into an orchard
	• Agroforestry • Conservation • Game Birds	Agroforestry is an integrated approach of using the interactive benefits from combining trees and shrubs with crops and/or livestock. It combines agriculture and forestry. The land is being used for conservation purposes, e.g. for fritillary butterflies. If the site is classed as a SSSI according to the GIS layer record as Conservation

Data Field	Options	Comments
	• Grazing • Ornamental • Public Recreation • Screening / Shelter • Timber Production • Personal recreation • Orchard	There is evidence that the land is currently, or will be, used for game birds, e.g. feeders are present Intentional grazing by domestic and wild herbivores An area managed for aesthetics and tree diversity e.g. arboreta Intentional management of the area for public use A site intentionally planted to be used mainly for screening/shelter Commercial timber production Managed for the personal recreation use of the owner e.g. dens, huts etc. which are not for public use The site has been/will be turned into an orchard

TT . Inaccessible data fields – circular plot

Data Field	Options	Comments
Inaccessible Reason	• Inaccessible thicket • Inaccessible health and safety	Thicket definition: "Stands of conifer/broadleaved trees where the bases of the live crowns of the trees are below 1m in height, and the live crowns interlock so tightly that access is impossible". E.g. dense gorse preventing access.

Data Field	Options	Comments
	• Inaccessible slope • Inaccessible obstruction • Inaccessible wind blow • Inaccessible other	

UU . Visual assessment data fields – circular plot

Data Field	Options	Comments
Height (m)	Free text	Estimate the mean total height of: • The predominant stems, • Or, if thicket is the reason for inaccessibility then assess the thicket stems only.
Tree Count	Free text	Estimate the number of stems/coppice stools within the plot for: • The predominant stems, • Or, if thicket is the reason for inaccessibility then assess the thicket stems only.
Est. Mean DBH (cm)	Free text	Estimate, for the measurable trees (≥7cm DBH), the average DBH of all the stems within the plot for: • The predominant stems, • Or, if thicket is the reason for inaccessibility then assess the thicket stems only.

VV Point 1 data fields – circular plot

Data Field	Options	Comments
Grid Ref.	Free text	Enter the field GPS reading *on the day* for the plot centre, using the "2 letter-10 digit format" e.g. TQ0901012008 unless the plot is Inaccessible in which case use the ArcGIS coordinates.
Point Number	Software generated	
Visit Status	• Unvisited • In progress • Completed • Refused Access • Not possible to assess	In progress can be used if the surveyor needs to leave the site before completing data entry (e.g. it gets dark before completion). Ensure that this is changed to Completed when the plot is finally completed. Completed should be used if the plot can be assessed, either physically or visually and the assessment work and recording are complete.
Access Status	• Accessible • Inaccessible, visual assessment possible • Inaccessible, NO visual assessment	If either of the inaccessible options is selected, an "Inaccessible Reason" data field will appear.
Access comment	• Free text	Any comments relating to access – e.g. reason for Inaccessibility if Inaccessible Other used
Reason for Change	• No Change 2nd cycle • Real Change 2nd cycle • Error Change 2nd cycle • Spatial Error 2nd cycle	• No change found during 2nd cycle re-visit • Real change found during 2nd cycle re-visit • A change in the data due to an error found by NFI office staff. • A change in the data due to a spatial error found by NFI office staff.

Data Field	Options	Comments
	• 1st Assessment – 2nd cycle	• The normal Reason for 1st assessment of the site.
Peg Left?	• No • Yes • Not surveyed	If "No" then the "Peg not Left Reason" data field will appear.
Peg not Left Reason	• No Landowner Permission • Health & Safety • Legal Restriction • Public Access Area • Residential • Garden • Impenetrable surface • Puddling Ground • Boggy Ground • Inaccessible • Multiple Causes • Terrain • Ground cover vegetation • Forest operations • Other	E.g. the site is a Scheduled Ancient Monument and ground disturbance is forbidden. E.g. livestock-grazed woodland, graveyards.
Peg Description	Free text	Record anything to help relocation of the peg for Quality Assurance purposes and for the return visit in 5-10 years' time.
Re-Survey Peg Status	• Peg found • Peg not found, plot centre certain • Peg not found, plot centre approximate	• Plot centre definitely found; surveyors have a high level of proof that they have the centre to less than 0.5m • Probably found; surveyors believe that they have the centre to within 0.5m *to a maximum of 5m*, here you have found some or all of the plot trees identified in the

Data Field	Options	Comments
	• Peg not found, plot not located • Inaccessible	first survey, but the trees are located away from the plot centre and / or are too few, so that without a lot of measuring and trigonometry you cannot get the plot location to less than 0.5m, but you know the peg location is contained within your plot. • Not found; you do not know location and cannot reference any of the features identified in the original plot, you have no certainty that the plot contains the original peg location. Regenerate a new plot. • Plot Inaccessible
Point Stump count	Free text	A count of the total number of stumps within a circular plot or within 5.64m of the plot centre.

WW . Tree data fields – normal tree

Data Field Fields with a * only appear when required	**Options**	**Comments**
Location	Locate tree within the plot. See 17.8.5.2 Mapping the tree position	This is required for all measurable stems (≥7cm DBH).
Type	○ Frozen Stump ○ Tree ○ Stump ○ Coppice Stool	Choose the type of tree/stump to be assessed. For Re-measure squares only

	○ Coppice Stem ○ Multi-stem tree ○ Tree stem ○ Frozen shrubs acting as trees ○ Frozen tree ○ Frozen coppice stool ○ Frozen coppice stem ○ Frozen Multi-stem tree ○ Frozen tree stem ○ Shrub acting as a tree	For Re-measure squares only For Re-measure squares only For Re-measure squares only For Re-measure squares only For Re-measure squares only For Re-measure squares only For Re-measure squares only
Tree Type	○ Normal ○ Dominant ○ 1st Stand Height Tree ○ 2nd Sample Tree ○ 3rd Sample Tree	Not a Sample Height Tree The largest DBH tree within each Storey present in the plot. This tree cannot be leaning excessively or be snapped except in special circumstances.
Species	○ Various	
DBH	○ Free text, whole number only	DBH MUST be a whole number 7cm or greater. The software will prompt for confirmation if a DBH of 50cm or more is recorded.
Tree Alive?	○ No ○ Yes	If 'No' then the two following extra Data Fields are added plus total height is requested after Component Group. Note that Dominant or 2nd or 3rd Sample tree CANNOT be dead.
Dead Tree Cause*	○ Not discernible ○ Natural mortality ○ Diseases ○ Insects ○ Fire	Choose which option best describes the cause of death.

	○ Windthrow ○ Physical damage – operations ○ Waterlogging ○ Windsnap ○ Vandalism ○ Chemical ○ Mammal ○ Deer ○ Rabbit ○ Squirrel ○ Sheep ○ Horse ○ Ring barking ○ Effluent ○ Erosion ○ Snow	Select the specific mammal where known otherwise select 'Mammal' which covers all mammal damage.
Decay Class*	○ 3 - 7	
Storey	○ Upper ○ Middle ○ Lower ○ Complex ○ Sapling ○ Seedling	Surveyors should NOT use Sapling or Seedling here as they are <4cm DBH.
Con Straightness	○ 1 - 7	NB: this Data field only appears for Conifers 14cm DBH and above. See file '**FC IN 39 Stem straightness protocol for SS.pdf'** in the Additional Document folder for more details.
Component Group	○ 1 - 30	Choose the Component Group number for that tree.
Age of Felling*	○ year ○ 1-2 years ○ 2-3 years ○ 3-4 years ○ 4-5 years	Where a Re-survey Tree has been converted to a Stump the approx. age of felling is required since the last survey.
Total Height (m)	○ Free text	Estimated height of standing dead tree
Excessive Lean	○ No ○ Yes	Any lean, of a line drawn from the middle of the stool of the tree to its growing tip, greater than 20° from

		vertical is considered excessive. If the answer is 'Yes' then normally this tree cannot be a height sample tree. However, if the leaning tree is representative of a leaning Component (majority of Component is leaning) then height can be assessed, in the software a 'Yes' must be the answer to allow height assessments.
Windsnapped	○ No ○ Yes	If the answer is 'Yes' this tree cannot be a height sample tree. However, if the snapped tree is representative of a snapped Component (majority of Component is snapped) then height can be assessed, in the software a 'Yes' must be entered.
Resurvey Status	○ Location confirmed 100% ○ Location Confirmed approximate ○ Tree not found (no stump) ○ Tree or stump located incorrectly in 1st cycle	○ Tree location is confirmed and there are no issues to be reported (e.g. an incorrectly located tree in 1st cycle) ○ Tree location is probably correct. Note that this should not occur for too many trees within the same plot as this could mean that the plot location is incorrect. ○ Surveyor is sure of location and tree/stump location but there is no sign of the tree or stump (e.g. on a mulching site) ○ The tree/stump has been located but was mapped in the wrong position. Surveyor to re-map to correct position. Note that this Status takes precedence over location confirmed status. ○ A new tree/stump that should have been assessed in the

	○ New tree or stump, previous cycle error ○ New tree established or grown ○ Stump not found ○ Frozen	previous cycle but was omitted. ○ A new tree has grown in place since the last assessment ○ A mapped stump cannot be found ○ Tree has been Frozen (e.g. a 2nd Sample Tree outside the circular plot)
Good Felling Practice (for stumps	• Null • Good felling practice/silviculture • Bad felling practice /exploitative • Not discernible Not felled/natural process	○

XX New tree records data fields

Option	**Comment**
Add New Tree Record	Allows a new, blank tree record to be added. If there are a number of trees of the same species it is better to fill in one complete record for that tree species and then to Clone the data (see later). In this instance it is better to carry out the Cloning before entering the DBH of the tree to be cloned. This is a good way to ensure that new DBH's need to be entered. If cloning after DBH is entered it is possible to forget to edit the tree data correctly. This is true for any of the fields within the tree data.
Add New Stump Record	Within each plot the nearest stump to the plot centre, where stumps are present, needs to be mapped and measured

Option	Comment
	objectively. To record the stump measures a Stump Record needs to be added. NB: Surveyors can also add a stump by turning a Normal Tree record into a stump in the Tree Data fields under the Field name 'Type'.
Add New Shrubs Acting as Trees Record	Where a shrub is acting like a tree a Shrubs Acting as Trees Record needs to be added and filled in. NB: Surveyors can also add this by turning a Normal Tree record into a Shrubs Acting as Trees in the Tree Data fields under the Field name 'Type'.
Add New Coppice Stool Record	Add New Coppice stools here. NB: Surveyors can also add this by turning a Normal Tree record into a Coppice Stool in the Tree Data fields under the Field name 'Type'.
Add new Multi stem tree record	Where a tree is multi-stemmed, but not from coppicing, then a multi-stem root stock can be assigned. To add the stems to this root stock right-click on the multi-stem to get options: see below. o Attach existing trees as stems o Unattach stem from Multi Stem Tree o Add New Tree Stem Record o Delete Multi-stem Tree Record o Clone Multi-stem Tree Record
Auto-Assign Sample Trees (for Circular Plots)	In Circular Plots, once all the Normal trees have been added/cloned, the data completed and dominant trees manually allocated, use Auto-Assign Sample trees to assign the 2nd and 3rd sample trees
Allocate Sample Trees (for Whole Section Plots)	In Whole Section plots once all the Normal trees have been added/cloned and the data completed, use Allocate Sample Trees to assign the 1st Stand height, 2nd and 3rd sample trees.
Auto-assign sample stumps	Where there are more then 2 stumps mapped but less than 2 are Sample Stumps.

Option	Comment
Convert all trees to stumps	Re-measure squares only – where a surveyor finds that all the trees within a plot have been felled this option allows them to convert all the trees simultaneously to stumps rather than deal with each individually.

YY . Sample Tree data fields

Data Field	Options	Comments
Total Height	Free text to 1 decimal place	See Height and Crown Diameter Assessments V3.doc in the Mensuration Assessments sub-folder of the Additional Documents folder for more details.
Timber Height (for broadleaf trees ≥20cm DBH)	Free text to 1 decimal place	See Height and Crown Diameter Assessments V3.doc in the Mensuration Assessments sub-folder of the Additional Documents folder for more details.
Crown Dia. 1	Free text to 1 decimal place	See Height and Crown Diameter Assessments V3.doc in the Mensuration Assessments sub-folder of the Additional Documents folder for more details.
Crown Dia. 2	Free text to 1 decimal place	See Height and Crown Diameter Assessments V3.doc in the Mensuration Assessments sub-folder of the Additional Documents folder for more details.

ZZ . Coppice tree records data fields

Option	Comment
Attach existing trees as Coppice Stools	Re-measure: In early versions of the software during the 1st cycle of the NFI it was not possible to add more than 1 stem to a stool. This option allows surveyors to add existing stems to a stool to correct this.
Add New Coppice Stem Record	Adds a new stem to a coppice stool
Delete Coppice Stem Record	Deletes a coppice stem record
Clone Coppice Stem Record	Clones coppice stems (onto same stool)

AAA . Stump data fields

Data Field	Options	Comments
Location		1st assessment square: • Map stump closest to plot centre point and • Its 3rd nearest neighbour. If there <4 stumps in the plot map the one nearest to plot centre/point **and** the one furthest away from it.
Type	• Stump • Coppice Stool	Choose Stump or coppice stool as appropriate
Stump Type	• <Null> • Normal stump • Sample stump	Normal stumps only apply to Re measure squares
If 'Sample stump' is chosen for 'Stump Type' surveyors will need to fill in the following		
Species Group	• Spruce • Pine • Broadleaved • Other Conifer	Choose the class the stump fits into.
Stump height (cm)	• Free text to 1 decimal place	Height – this is the mean height of the stump in cm. On a slope assess mid-way up the slope.

Data Field	Options	Comments
		For **Coppice Stools** assess mean height of entire stool.
Diameter 1	• Free text to 1 decimal place	Diameter 1 – assessed North to South. Estimation may be necessary if the stump is covered in mosses (do not disturb the vegetation on the stump). For **Coppice Stools** assess width of entire stool.
Diameter 2	• Free text to 1 decimal place	Diameter 2 - assessed East to West. For Coppice Stools assess width of entire stool.
Decay Class	• 8 • 9	• Fresh stump, still fairly solid • Older, partially or almost fully rotted stump.
Coppice Stool	• No • Yes • Not surveyed	• Is this a coppice stool?
Good Felling Practice?	• Null • Good felling practice/silviculture • Bad felling practice /exploitative • Not discernible • Not felled/natural process	

BBB Seedling circular plot data fields

Data Field	Options	Comments
Young Trees	• None • Not visually accessible	'None' - no young trees are present within the plot. This is the default answer. The plot cannot be seen.

Data Field	Options	Comments
	• Not Valid • Planted Seedling (<50cm tall) • Regen Seedling (<50cm tall) • Sucker seedling (<50cm tall) • Not Surveyed	'Not Valid' – e.g. for a metalled road, the presence or absence of young trees is not valid.
Where a Seedling has been indicated the following Data Fields will appear:		
Planting Year	Free text	For Planted trees ONLY
Species	Various	See annex GG
Species Quantity	Free text	Enter the number of that species – for low numbers an accurate count can be made. For larger numbers an estimate is acceptable.
Browse Class	• None • >50% Outer Shoots Browsed • 10-50% Outer Shoots Browsed • <10% Outer Shoots Browsed	
Recently Frayed	• No • Yes • Not Surveyed	

CCC Sapling circular plot data fields

Data Field	Options	Comments
Young Trees	• None • Not visually accessible	'None' - no young trees are present if within a Treed Section. This is the default answer. The plot cannot be seen.

Data Field	Options	Comments
	• Not Valid • Planted Sapling (<50cm tall) • Regen Sapling (<50cm tall) • Sucker Sapling (<50cm tall) • Not Surveyed	'Not Valid' – in some cases, e.g. a metalled road within a Section, the presence of young trees is not valid.
Where a Seedling has been indicated the following Data Fields will appear:		
Planting Year	• Free text	For Planted trees ONLY
Species	Various	See annex GG
Species Quantity	• Free text	Enter the number of that species – for low numbers an accurate count can be made. For larger numbers an estimate is acceptable.
Browse Class	• None • >50% Outer Shoots Browsed • 10-50% Outer Shoots Browsed • <10% Outer Shoots Browsed	
Recently Frayed	• No • Yes • Not Surveyed	

DDD . Lying deadwood data fields

Field Name	Options	Comments
Deadwood Present	• No • Yes • Not surveyed	If there is no lying deadwood along the transect line choose 'No'. If deadwood is present choose 'Yes'.
If Deadwood is present the following Data Fields will appear:		
Deadwood Type*	• Fallen • Windblow • Harvesting Debris	• Naturally fallen but not due to a windblow event (severe storm/winds) • Fallen due to a windblow event • Woody debris from a harvesting operation
% Transect Outside Section	• Free text – whole number	• Allocate what % of the transect line falls outwith the Section *on the ground*. Do not assess deadwood lying outside the Section.
Diameter	• Free text – whole numbers only	• Diameter must be ≥7cm. NB: if a length of deadwood is inaccessible then estimate the diameter.
Angle From Horizontal	• Leave as <null> until notified otherwise	•
Decay Class	• 1-5 • Not surveyed	• See overleaf

EEE . Interpreted Forest Types

Interpreted Forest Type (IFT)	Description
Assumed woodland	Areas assumed to have been newly planted based on private sector grant scheme applications and FC new planting data.
Broadleaved	Canopy "open to the sky" is comprised of ≥80% broadleaf species.
Cloud/shadow	Land cover obscured by cloud/shadow.
Conifer	Canopy "open to the sky" is comprised of ≥80% conifer species.
Coppice	Woodland actively managed under a coppice system whereby the trees and shrubs are periodically cut back to ground level

Interpreted Forest Type (IFT)	Description
	to provide firewood or timber. Usually broadleaf, occasionally conifer (e.g. coast redwood).
Coppice with standards	Areas of coppice underwood including a partial over-storey of standard trees grown to produce large timber.
Felled	Area of woodland where the trees have been harvested or felled within the last 10 years. Not to be confused with recently-cut coppice.
Ground prep	Ground prepared for replanting or new planting of trees e.g. ploughed, mounded, scarified etc.
Low density	A 'borderline' area of woodland that based on aerial photography interpretation could be either 19% or 20% canopy cover. It is for the surveyor on the ground to determine this.
Mixed mainly broadleaved	Canopy "open to the sky" is comprised of >50% and <80% broadleaf species.
Mixed mainly conifer	Canopy "open to the sky" is comprised of >50% and <80% conifer species.
Nursery	Land where young trees are raised commercially in nurseries.
Orchard	Commercial orchard.
Shrub	Area dominated by low-growing scrubby vegetation.
Uncertain	IFT/IOA not discernible.

FFF . Interpreted Open Area categories

Interpreted Open Area (IOA)	Description
Agriculture	Agricultural land- arable or pasture.
Bare	Bare ground/rock.
Grassland	A predominantly grassy area.
Open water	
Other vegetation	Anything other than grass e.g. gorse, rhododendron, bracken, heather.
Powerline	Overhead electricity line.
Quarry	
River	
Road	
Urban	Buildings and surrounds.
Windfarm	Land with groups of energy producing wind turbines.