



Llywodraeth Cymru
Welsh Government

Woodland Creation Planning Scheme

Woodland Plan Register (WPR)

Shapefile Guidance

The Welsh Government produces this Guide in Welsh and English as required under the Welsh Government Welsh Language Scheme. Should you require a copy of this guide in Welsh, you can access it from gov.wales/woodland-creation-plan-scheme by selecting the language switcher at the top of the page and re-opening the document.

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Woodland Plan Register (WPR) Shapefiles – Introduction

The next evolution in the Woodland Plan Shapefile has now arrived with the introduction of the Woodland Plan Register (WPR) – The WPR is a central hub for the Woodland Creation Planning Scheme (WCPS), created to simplify the woodland planning process for all parties during the Plan creation and verification process.

What's changed in the new WPR Shapefile?

There are some changes, which we hope will streamline the Shapefile creation process:

- When mapping is complete, planners will upload Shapefiles to the new Woodland Plan Register instead of uploading to a customer's messages area. This will ensure everything is kept in a single easy to manage place.
- Shapefiles will be validated at the point of upload to check for errors, providing instant feedback should corrections be necessary.
- A Shapefile can be uploaded/replaced/amended as many times as is necessary, up to the point of submission, to ensure it is fully valid and compliant with all scheme rules.
- The *Plan of Operations* table previously found in the Woodland Creation Plan template has now been removed. Instead, the *Plan of Operations* will be derived from the new Shapefile Attribute Tables and geospatial data and displayed alongside an overview map of the shapefile when uploaded to the Woodland Plan Register.
- All Tree Species have been allocated a short code to make completion of the Shapefile *woodlandArea* attribute table a faster process. The list of Tree Species codes is available on the WCPS area of the Welsh Government website. The tree species codes will be validated at the point of Shapefile upload.
- The ability to map gates has now been added to the Shapefile in the form of a new shape layer called *woodlandPoint*.
- As the WPR system will now derive areas and lengths geospatially when you upload a Shapefile, each of the shape attribute tables has been simplified to now only require the minimum of information. All shape layers require a *UniqueID* and *Option Code*, and additionally:
 - The *woodlandArea* shape will require tree species code and percentage entry (up to 20).
 - The *woodlandLinear* shape will require addition of the UniqueID of the planting area it is linked to.
 - The *woodlandPoint* shape will require the addition of the UniqueID of the fencing it is linked to.

Note: Before continuing, it is assumed that you have read the Woodland Plan Register – Planner Guidance document first, as references made in this document may not be understandable if you have not. The Woodland Plan Register – Planner Guidance can be found here: [Woodland Creation Planning Scheme | GOV.WALES](#)


What software can be used to map a Shapefile?

The WPR supports Shapefiles that are edited with ESRI based software like ArcMap/ArcGIS or the free software QGIS. The WPR does not support Shapefiles that are edited in software such as Landapp as the GI element of this software will change the makeup of the Shapefile file system and Attribute Table data.

What is included in the WPR Shapefile?

The WPR Shapefile .zip contains four layers – the first layer holds boundary details of the Land Parcel Identification System (LPIS) field parcels selected under the EOI; the second layer is a blank template for planners to map polygon (planting area) data; the third layer is a blank template for planners to map linear (fencing) data; and the fourth layer is a blank template for planners to map point object (gates) data.

The .zip file contents will appear as follows:



Name	Type	Size
lpis_A0099999_7777777.cpg	CPG File	1 KB
lpis_A0099999_7777777.dbf	DBF File	7 KB
lpis_A0099999_7777777.prj	PRJ File	1 KB
lpis_A0099999_7777777.shp	SHP File	13 KB
lpis_A0099999_7777777.shx	SHX File	1 KB
woodlandarea_A0099999_7777777.cpg	CPG File	1 KB
woodlandarea_A0099999_7777777.dbf	DBF File	2 KB
woodlandarea_A0099999_7777777.prj	PRJ File	1 KB
woodlandarea_A0099999_7777777.shp	SHP File	1 KB
woodlandarea_A0099999_7777777.shx	SHX File	1 KB
woodlandlinear_A0099999_7777777.cpg	CPG File	1 KB
woodlandlinear_A0099999_7777777.dbf	DBF File	1 KB
woodlandlinear_A0099999_7777777.prj	PRJ File	1 KB
woodlandlinear_A0099999_7777777.shp	SHP File	1 KB
woodlandlinear_A0099999_7777777.shx	SHX File	1 KB
woodlandpoint_A0099999_7777777.cpg	CPG File	1 KB
woodlandpoint_A0099999_7777777.dbf	DBF File	1 KB
woodlandpoint_A0099999_7777777.prj	PRJ File	1 KB
woodlandpoint_A0099999_7777777.shp	SHP File	1 KB
woodlandpoint_A0099999_7777777.shx	SHX File	1 KB

Mapping the WPR Shapefile

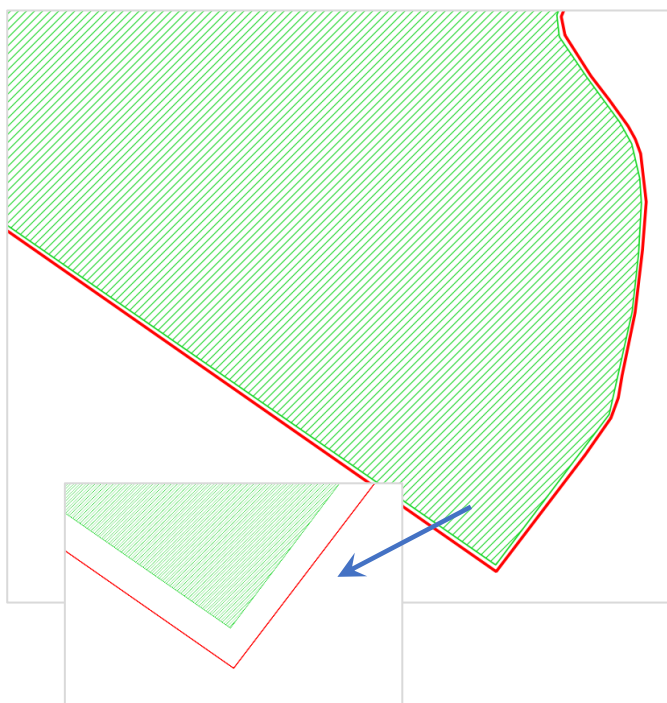
All polygons, linear and point features must be mapped **within** selected LPIS Field Parcel boundaries. All mapped polygons or linear features must be *single part* only, i.e. you must not add multiple (non-contiguous) polygons or linear features into the same attribute record as these will be rejected by the WPR.

For fencing, please ensure you comply with the guidance notes for the WCPS scheme, i.e. you cannot locate any point of a fence more than 10 metres away from the associated planting polygon, and the length of the fencing line must not exceed the perimeter of the associated planting polygon.

Attention: Planners should only add mark-up to the Area, Linear and Point shapes. Do not add any additional shape layers.

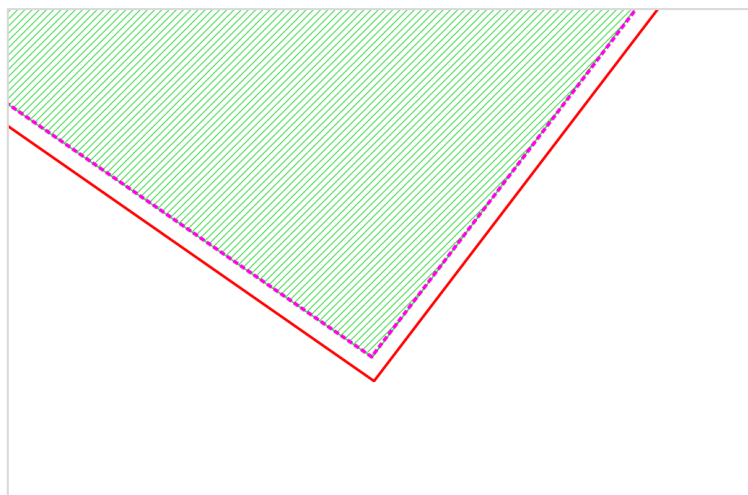
Drawing woodlandarea planting polygons

You may choose to use a snapping tool in your GI editor, however we recommend mapping just inside the boundaries, leaving a small buffer zone to ensure no part of the mapped polygon goes outside the LPIS line. Zooming into this example shows the buffer between LPIS boundary and planting polygon. This buffer has a negligible effect on the area measurement.



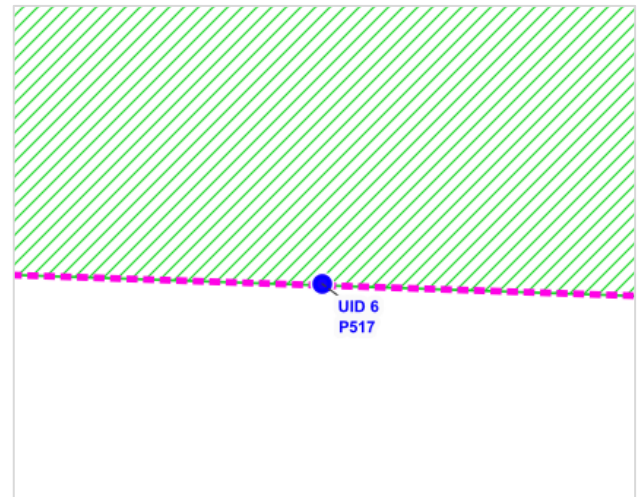
Drawing woodlandlinear fence lines

Much like area polygons, drawing your fence lines (pink dash in this example) just inside the LPIS parcel gives a margin of error. Again this example is zoomed in considerably, so leaving this buffer will make a negligible difference in measured quantity.



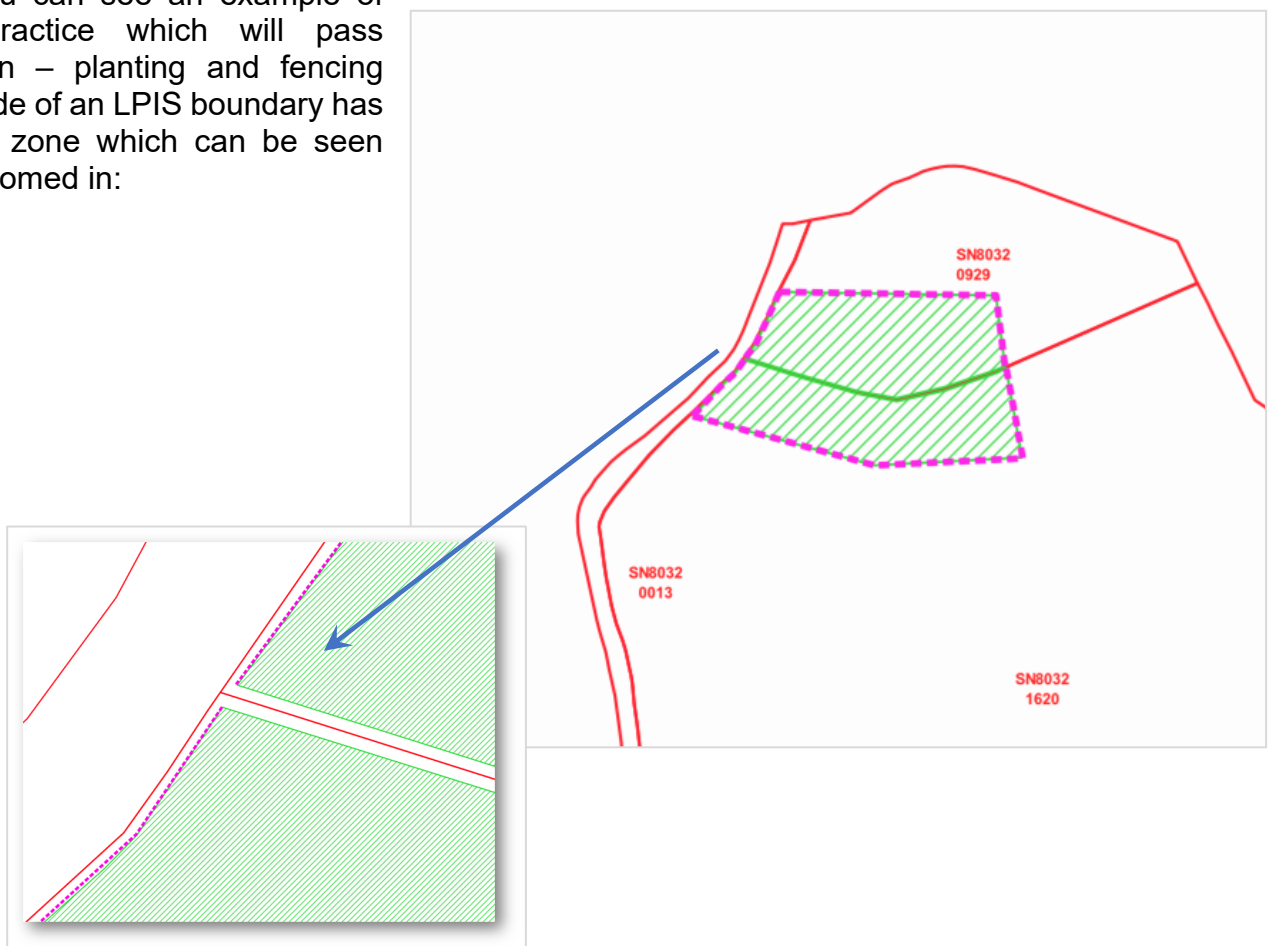
Adding woodlandPoint Gates

Gate points must be added within the near vicinity of the fence line it is associated with. Please be as accurate as possible when adding gate points (zoom in) to ensure the point is on top of the fence line as there is only a small tolerance in the WPR validation system.



Good Mapping Practice

Here you can see an example of good practice which will pass validation – planting and fencing either side of an LPIS boundary has a buffer zone which can be seen when zoomed in:



Adding layer information into the Attribute Tables

Each polygon, linear or point feature will need to have attributes added according to the type. It is the responsibility of those creating the plan to ensure the careful and accurate capture of all features and attributes. The information entered in the Attribute Tables will be used to create the 'Woodland Plan of Operations', now displayed within the Woodland Plan Register separately to the Woodland Plan template.

woodlandArea – Planting Area Polygon

For each planting area created, add a *UniqueID*, *Option Code* and the required tree species codes with percentages (totalling 100% for each line in the attribute table).

Field name in Shapefile	Description	Example of format required
UID	<i>Unique ID which you have allocated – this needs to be unique across woodlandArea, woodlandLinear and woodlandPoint shapes</i>	1
CODE	<i>Option Type, e.g. P003 Carbon</i>	P003
SPECIES_1 – SPECIES_20	<i>Tree species code – up to 20 rows</i>	ASP
PERCENT_1 – PERCENT_20	<i>Percentage of area for each Tree Species – up to 20 rows - note that the percentage values in a row must add up to 100</i>	100

Example:

UID	CODE	SPECIES_1	PERCENT_1	SPECIES_2	PERCENT_2	SPECIES_3	PERCENT_3
1	P003	IAR	50	AH	30	RSQ	20
2	P003	IAR	50	AH	30	BPO	20
3	P002	ASP	50	AH	30	BPO	20

woodlandLinear – Fence Line

For each fence item created, add a *UniqueID*, *Option Code* and the associated planting polygon *UniqueID* from the woodlandArea layer for each fence line. Each fence line MUST have the associated planting polygon UniqueID (UID) set.

Field Name in Shapefile	Description	Example of format required
UID	<i>Unique ID which you have allocated – this needs to be unique across woodlandArea, woodlandLinear and woodlandPoint shapes</i>	1
CODE	<i>Option Type, e.g. P595 Fencing</i>	P595
POLY_UID	<i>Each Fence line must be associated with a Planting Area – enter the UID of the planting area the fence is linked to</i>	2

Example – Fence item UID 4 with Code P595 is associated with Planting Area UID 1:

UID	CODE	POLY_UID
1	4 P595	1
2	5 P518	2

woodlandPoint – Gates

For each gate created, add a *UniqueID*, *Option Code* and the associated fence line *UniqueID* from the WoodlandLinear layer for each gate. Each gate MUST have the associated fence line UniqueID (UID) set.

Field Name in Shapefile	Description	Example of format required
UID	<i>Unique ID which you have allocated – this needs to be unique across woodlandArea, woodlandLinear and woodlandPoint shapes</i>	1
CODE	<i>Option Type, e.g. P516 Bridle Gate and Posts</i>	P516
LINE_UID	<i>Each Gate must be associated with a Fence line – enter the UID of the Fence line the gate is linked to</i>	2

Example – Gate UID 6 with Code P517 is associated with Fence UID 4:

	UID	CODE	LINE_UID
1	6	P517	4
2	7	P517	5

Important note: You must not alter the rows/columns within the attribute tables, this includes removal of unused species/percent rows or renaming columns. Doing so will mean the submitted Shapefile will fail validation.

Woodland Opportunity Map (WOM) – Useful layers to use when mapping

Welsh Government [Woodland Opportunity Map](#) (WOM) web-map browser which sits on the Welsh Government's GeoPortal – DataMapWales. This is an online viewer which provides a general guide to landowners and aims to identify areas of Wales which are most suited to new woodland creation. The map also includes information to show areas that are potentially sensitive to new woodland creation and signposts further guidance on consultation with the appropriate authority. The map is relevant to **all** woodland creation proposals whether public or privately funded and is used in the assessment of applications for Welsh Government planting schemes. Its aim is to ensure that trees are planted in the right place for maximum benefit.

To assist Woodland Planners in preparation of woodland plans, all constraints and sensitivities connected with the selected planting area can be found and downloaded from the WOM.

A complete user guide has been produced to provide you with an introduction to the updated WOM and shows how it works to support decision making on new woodland planting in Wales. The link can be found at gov.wales/woodland-opportunity-map-user-guide

Best practice for upload of Shapefiles

A Shapefile can be uploaded to the new Woodland Plan Register as many times as is necessary to get a *valid* shapefile uploaded for a Plan. With this in mind, you may upload a shapefile at any stage of the mapping process, which could be particularly useful if you have a large amount of mapping to be done. This will allow you to check for any potential errors with the mapping as you go along rather than completing a large amount of mapping first, then uploading, only to find errors that could become complicated to resolve.

Keep in mind that only when you are satisfied that the uploaded Shapefile and all other parts of the Plan are complete do you need to *submit* the Plan for verification – it's at this point that the Plan will become read-only, so again, until that point is reached you may add/delete and replace each part of the Plan as many times as you see fit.

Appendix A – Shapefile Validation Errors


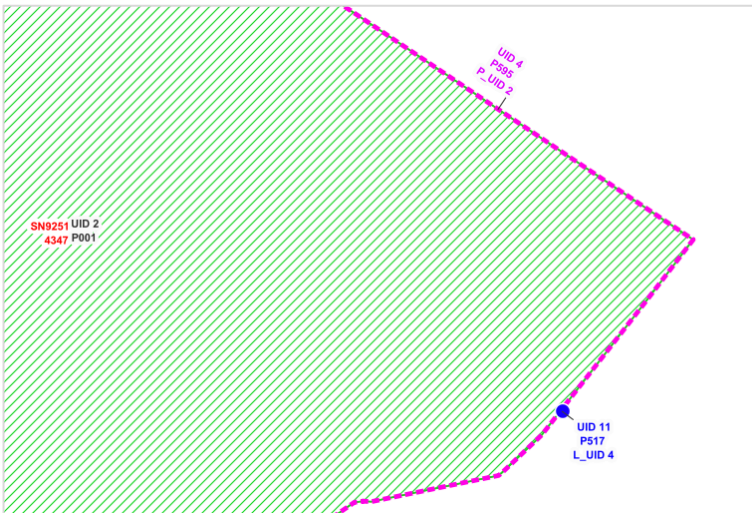
This is a comprehensive list of the errors that you may encounter during upload of a Shapefile.

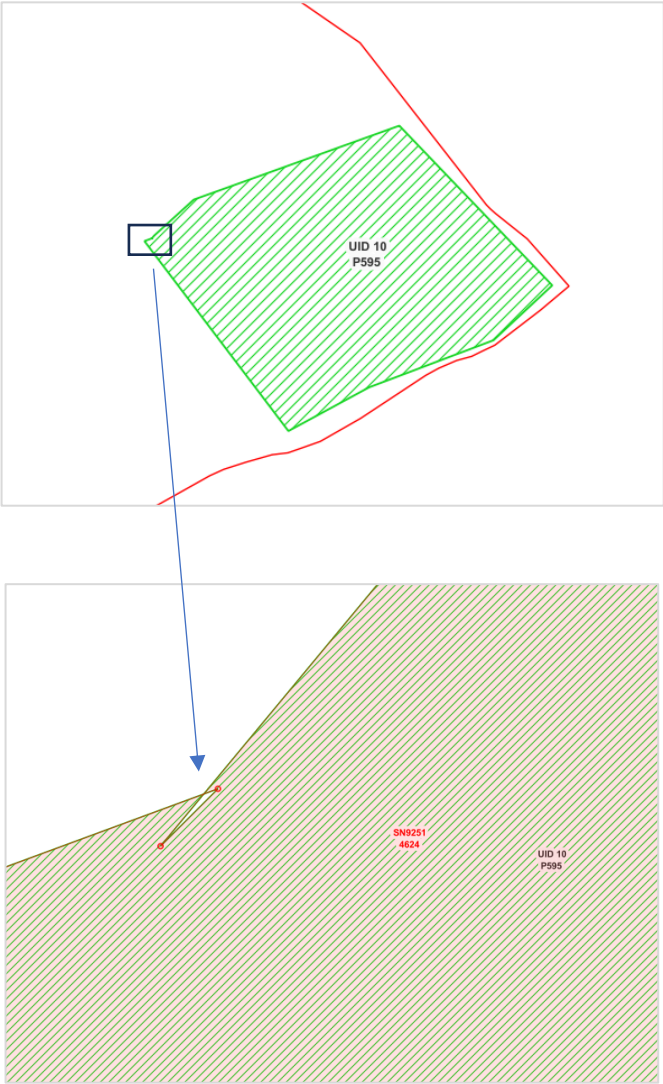
Errors must be resolved in your GI software and a corrected Shapefile re-uploaded. Shapefile errors cannot be resolved from within the Woodland Plan Register.

Note that **QGIS** software is used for the screenshots in the following examples.

Error Messages	Explanation												
Zip file does not include the following file(s): <fileList>	Each upload of a shapefile .zip must contain at least the following file types for each of the main shape layers: <code>woodlandarea_*</code> <code>woodlandlinear_*</code> <code>woodlandpoint_*</code> <code>.dbf</code> <code>.shp</code> <code>.shx</code> <code>.prj</code> <code>.cpg</code>												
The following PRJ file(s) do not match the format in the downloaded zip file: <fileList>	The projection must be kept the same as the downloaded Shapefile - <i>OSGB36 / British National Grid EPSG:27700</i>												
Shapefile does not include any planting areas.	There are no planting areas detected in the <i>woodlandArea</i> shape. Check that your planting polygons and attribute table data has saved correctly.												
The code <code> is not valid for a planting area	The Option Code assigned in the Attribute Table for a planting item in the <i>woodlandarea</i> shape is not among the acceptable codes. Acceptable codes are: <table border="1"> <thead> <tr> <th>Code</th><th>Option Name</th></tr> </thead> <tbody> <tr> <td>P001</td><td>Agro Forestry</td></tr> <tr> <td>P002</td><td>Biodiversity 1600</td></tr> <tr> <td>P003</td><td>Native Carbon</td></tr> <tr> <td>P004</td><td>Enhanced Mixed</td></tr> <tr> <td>P005</td><td>Biodiversity 1100</td></tr> </tbody> </table>	Code	Option Name	P001	Agro Forestry	P002	Biodiversity 1600	P003	Native Carbon	P004	Enhanced Mixed	P005	Biodiversity 1100
Code	Option Name												
P001	Agro Forestry												
P002	Biodiversity 1600												
P003	Native Carbon												
P004	Enhanced Mixed												
P005	Biodiversity 1100												
The code <code> is not valid for a fence item	The Option Code assigned in the Attribute Table for a fence item in the <i>woodlandlinear</i> shape is not among the acceptable codes. Acceptable codes are: <table border="1"> <thead> <tr> <th>Code</th><th>Option Name</th></tr> </thead> <tbody> <tr> <td>P595</td><td>Post & Wire Fencing</td></tr> <tr> <td>P518</td><td>Deer Fencing</td></tr> </tbody> </table>	Code	Option Name	P595	Post & Wire Fencing	P518	Deer Fencing						
Code	Option Name												
P595	Post & Wire Fencing												
P518	Deer Fencing												

Error Messages	Explanation																
The code <i><code></i> is not valid for a gate item	<p>The Option Code assigned in the attribute table for a gate item in the <i>woodlandpoint</i> shape is not among the acceptable codes. Acceptable codes are:</p> <table><tr><th>Code</th><th>Option Name</th></tr><tr><td>P590</td><td>Standard Gate (Metal)</td></tr><tr><td>P599</td><td>Standard Gate (Hardwood)</td></tr><tr><td>P600</td><td>Standard Gate (Softwood)</td></tr><tr><td>P516</td><td>Timber Bridle Gate</td></tr><tr><td>P517</td><td>Timber Kissing Gate</td></tr></table>	Code	Option Name	P590	Standard Gate (Metal)	P599	Standard Gate (Hardwood)	P600	Standard Gate (Softwood)	P516	Timber Bridle Gate	P517	Timber Kissing Gate				
Code	Option Name																
P590	Standard Gate (Metal)																
P599	Standard Gate (Hardwood)																
P600	Standard Gate (Softwood)																
P516	Timber Bridle Gate																
P517	Timber Kissing Gate																
The tree species code <i><code></i> is not valid	<p>A tree species code added into the attribute table for the planting item is not in the valid tree species code list. Please check and correct the invalid species code.</p> <p>A full list of Tree Species codes can be found at https://www.gov.wales/woodland-creation-plan-scheme</p>																
The tree species <i><code></i> cannot be defined more than once within a planting area.	A tree species code has been used more than once for the planting item referenced. Please check and remove the duplicate code.																
The percentage for tree species <i><code></i> must be greater than zero.	No tree species percentages have been entered for the planting item. Please check and add Tree Species Percentage(s) as appropriate.																
The tree species mix for the planting area must add up to 100%.	For each planting item in the <i>woodlandarea</i> attribute table, the total of each tree species percentage in the row must equal 100%																
This items reference is not unique within this Plan	All drawn items (planting areas, fencing and gates) must have a Unique ID (UID) allocated to it, which needs to be unique across the <i>woodlandarea</i> , <i>woodlandlinear</i> and <i>woodlandpoint</i> shapes. For example, if a fence item and a planting area have the same UID or a gate and a fence item have the same UID, this rule failure will be shown.																
This item does not have a valid item reference.	<p>Each drawn item (planting area, fence line or gate) must have a Unique ID (UID) set in the attribute table. The UID needs to be numeric, for example:</p> <table><tr><th>UID</th><th>CODE</th><th>SPECIES_1</th><th>PERCENT_1</th></tr><tr><td>1</td><td>P001</td><td>ASP</td><td>100</td></tr><tr><td>2</td><td>P003</td><td>ASP</td><td>100</td></tr><tr><td>3</td><td>P001</td><td>ASP</td><td>100</td></tr></table>	UID	CODE	SPECIES_1	PERCENT_1	1	P001	ASP	100	2	P003	ASP	100	3	P001	ASP	100
UID	CODE	SPECIES_1	PERCENT_1														
1	P001	ASP	100														
2	P003	ASP	100														
3	P001	ASP	100														

Error Messages	Explanation												
This fence item is not associated with a planting area.	<p>Each drawn fence line must have an associated planting area UID added to the POLY_UID column within the <i>woodlandlinear</i> attribute table. For example, here the fence item UID 3 needs to be associated with planting area UID 1:</p> <div><table><thead><tr><th>UID</th><th>CODE</th><th>POLY_UID</th></tr></thead><tbody><tr><td>3</td><td>P518</td><td>1</td></tr><tr><td>4</td><td>P595</td><td>2</td></tr></tbody></table></div>	UID	CODE	POLY_UID	3	P518	1	4	P595	2			
UID	CODE	POLY_UID											
3	P518	1											
4	P595	2											
This gate item is not associated with a fence item.	<p>Each added gate must have an associated fence item UID added to the LINE_UID column within the <i>woodlandpoint</i> attribute table. For example, here the gate UID 11 needs to be associated with fence item UID 4:</p> <div><table><thead><tr><th>UID</th><th>CODE</th><th>LINE_UID</th></tr></thead><tbody><tr><td>9</td><td>P600</td><td>3</td></tr><tr><td>10</td><td>P516</td><td>6</td></tr><tr><td>11</td><td>P517</td><td>4</td></tr></tbody></table></div>	UID	CODE	LINE_UID	9	P600	3	10	P516	6	11	P517	4
UID	CODE	LINE_UID											
9	P600	3											
10	P516	6											
11	P517	4											

Error Messages	Explanation
<p><UNIQUE_ID> - The geometry of this item intersects itself</p> <p>The Geometry on the following items are invalid: <UNIQUE_ID></p>	<p>These errors usually mean the system has detected polygon or polyline nodes (also known as vertices) have been placed on top of one another, or that a drawn planting area or fence line 'intersects' itself. The latter means that the drawn item has crossed over itself when being mapped. To resolve, using your GI software zoom into each dropped node to identify where the item has intersected itself. In the example below the polygon looks normal when zoomed out, however on closer inspection you can see where the node has self intersected:</p>  <p>Note that using a 'snap tool' to draw polygons or fence lines is particularly susceptible to laying nodes on top of each other.</p>
<p>Overlaps with <UNIQUE_IDs>. Remove any overlaps.</p>	<p>The system has detected a planting area overlaps another planting area, a fence item overlaps another fence item or a gate overlaps another gate. Use your GI software to identify the overlap and adjusted nodes as necessary. You may need to zoom in to find overlaps.</p>

Error Messages	Explanation
<UNIQUE_ID> - Part or all of the geometry of this item lies outside your agreed plan extent.	The agreed plan extent is made up of all the field parcels validated at EOI stage. This extent is shown in the LPIS shape layer in the Shapefile. Mapping outside this extent is not allowed, therefore you will need to use your GI software to locate the area(s) / fence line(s) that have gone outside the extent and adjust as required
<UNIQUE_ID> (polygon) - Total Fencing linked to a planting polygon must be no longer than the perimeter of the polygon	A requirement of the WCPS rules is that the location of fencing does not have to mirror the perimeter of a planting polygon but must be no longer than the perimeter of the planting polygon it relates to.
The gate is too far away from the related fencing.	Gate points must be placed within a tolerance of 10m from the associated Fencing line.
The gate is too close to another gate	Gate points cannot be placed closer than 1m away from another gate point.
The fence is too far away from the planting area	Any part of a fence line cannot be more than 10m away from the associated planting.
The minimum total area of new planting to be eligible for support is 0.25 hectares.	During shapefile upload, the system has detected that there is less than the required 0.25ha of planting area mapped. Plans with a total planting area of less than 0.25ha are not eligible for the WCPS scheme.
The minimum individual area of new planting to be eligible for support is 0.01 hectares.	During shapefile upload, the system has detected that a drawn planting area is less than the required minimum of 0.01ha for an individual planting area item. Areas lower than 0.01ha are not eligible for the WCPS scheme.
This item shares attributes with multiple features. Each feature should have unique attributes.	<p>This situation can occur when more than one planting area or fence line is associated with a single row in the attribute table. This can happen for example, when a planting polygon or fence line is split into two using the <i>split part</i> tool in your GI software, but both polygons remain associated to one row in the attribute table.</p> <p>Each physically separate planting polygon or fence line MUST have its own row in the attribute table.</p>
The following items do not have any associated geometries: <UNIQUE_IDs>	<p>This situation can occur when all nodes of a planting polygon or fence item are manually deleted, leaving the associated attribute table row in place.</p> <p>In general, if you wish to delete a planting or fence item it is best to delete the row from the attribute table view, which will remove any associated geometry drawn.</p>