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.

If you are encountering problems or are unable to access our website, please contact the RPW Online Helpdesk on 0300 062 5004.

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Woodland Plan Register (WPR) Shapefiles – Introduction

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.

- Planners will upload Shapefiles, Woodland Creation Plans and supporting documentation to the Woodland Plan Register.

- 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* will be derived from the new Shapefile Attribute Tables 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 streamlined process. The list of Tree Species codes is available on the WCPS area of the Welsh Government website. Tree species codes will be validated at the point of Shapefile upload.

- Water options can be added to Shapefiles, including Water Pipes (*woodlandLinear*), Water Gates (*woodlandPoint)*, Water Troughs (*woodlandPoint)*.

- As the WPR system derives areas and lengths geospatially upon upload of a Shapefile, each of the shape attribute tables only requires 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, which is used to draw fencing and water pipes, will require addition of the ParentUID of the planting area the item is linked to.

    - The *woodlandPoint* shape, which is used to draw gates and water gates/troughs, will require the addition of the ParentUID of the item it is linked to. Standard gates will need a fencing item as the ParentUID, whereas water gates/troughs will have a planting area as the ParentUID.

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 Plan Register | GOV.WALES]

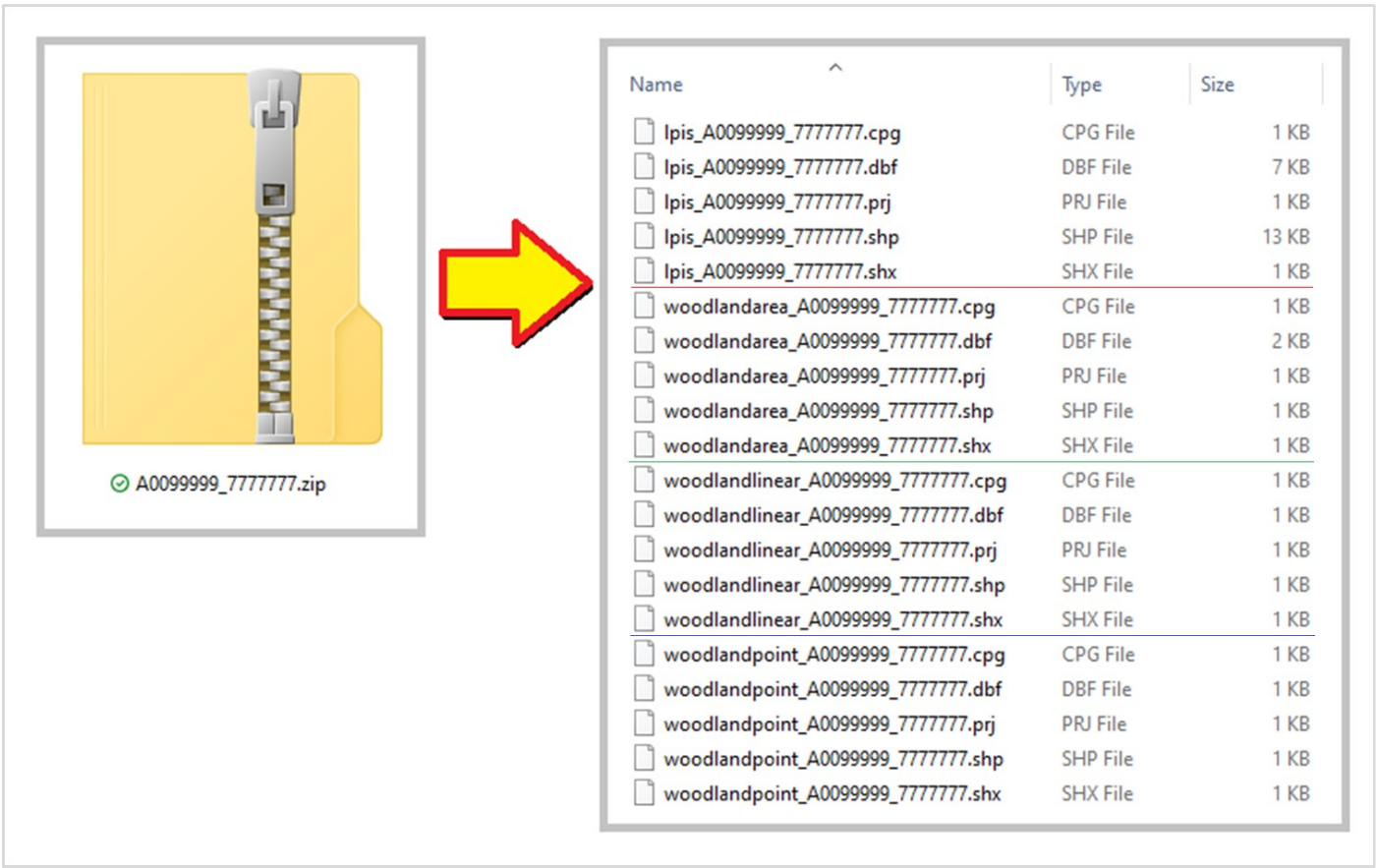
What software can be used to map a Shapefile?

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, water pipe) data; and the fourth layer is a blank template for planners to map point object (gates, water gates/troughs) data.

The .zip file contents will appear as follows:



Mapping the WPR Shapefile

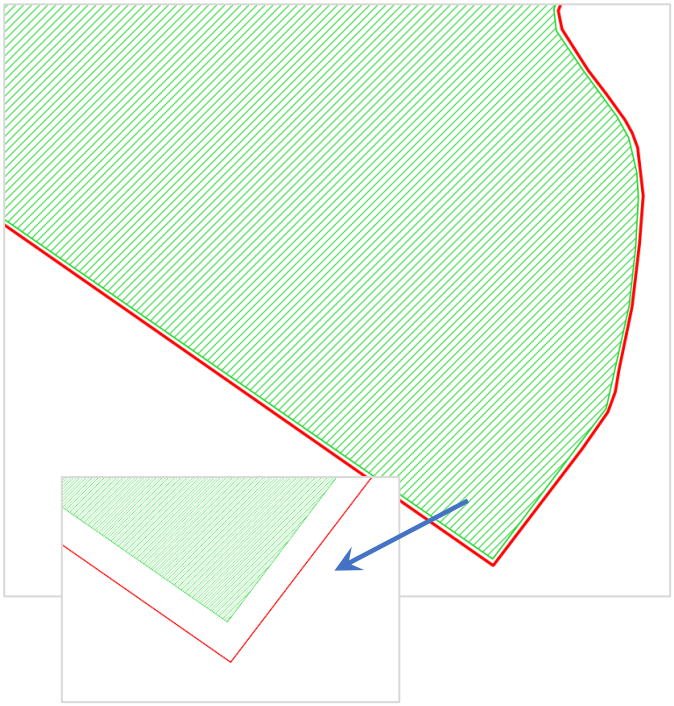
Planting areas, fencing and gates must be mapped **within** the LPIS Field Parcel boundaries selected on the WCPS EOI. Water pipes and water gates/troughs can be mapped outside selected LPIS Field Parcel boundaries where required, however the customer must still have management control of that land. 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**.

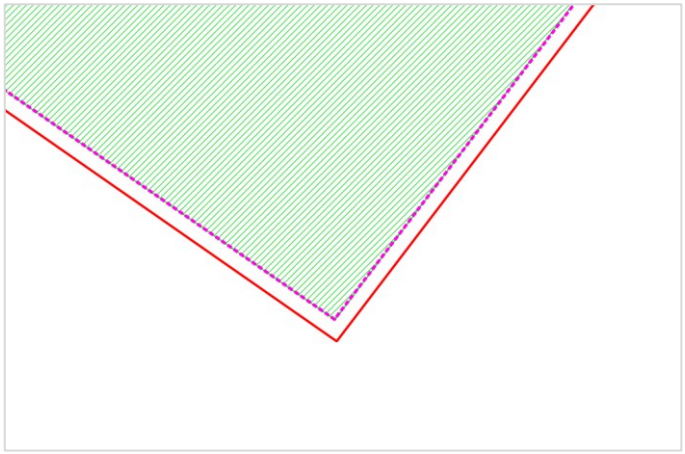
Drawing *woodlandarea* planting polygons

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.



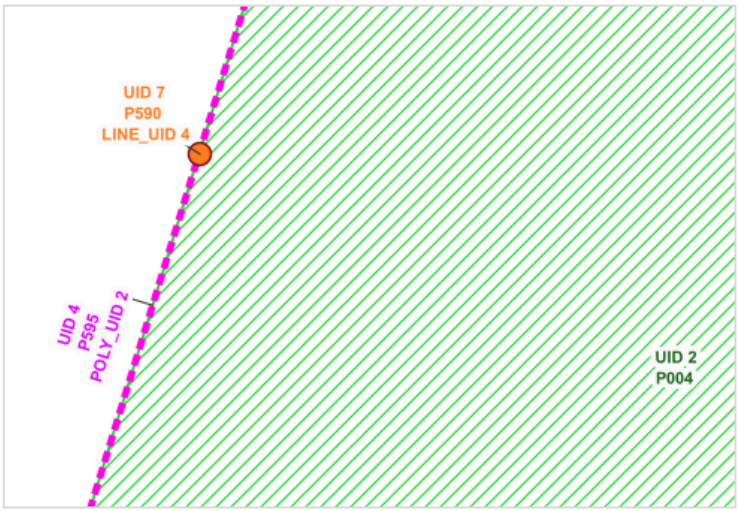
Drawing *woodlandlinear* fence lines

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

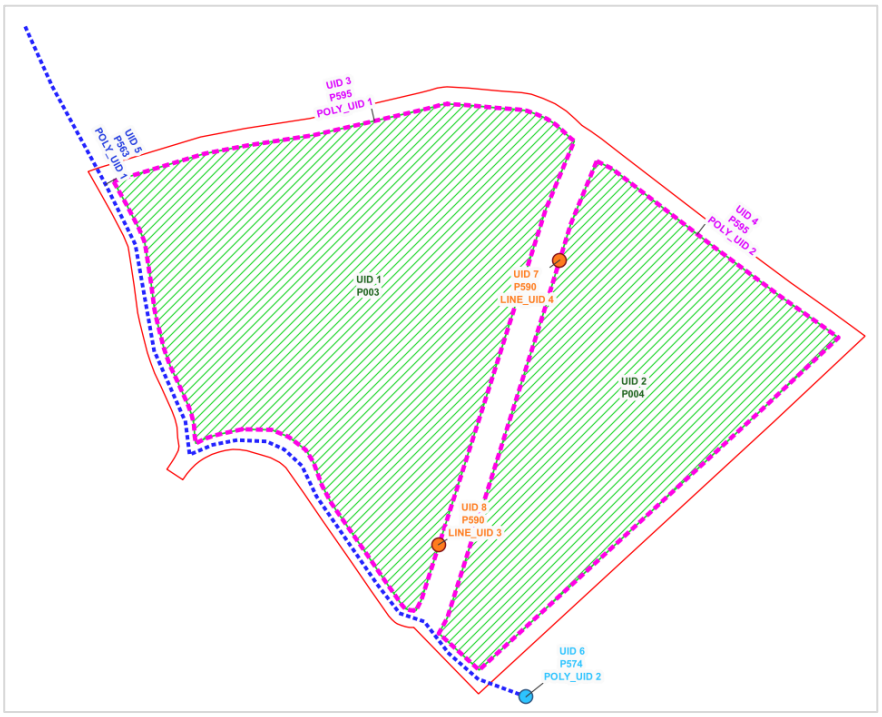
Gate points must be added within the near vicinity of the fence line it is associated with. Please be as accurate as possible when adding gate points (zoom in) to ensure the point is on top of the fence line as there is only a small tolerance in the WPR validation system.



Adding Water Pipes, Water Gates, Water Troughs

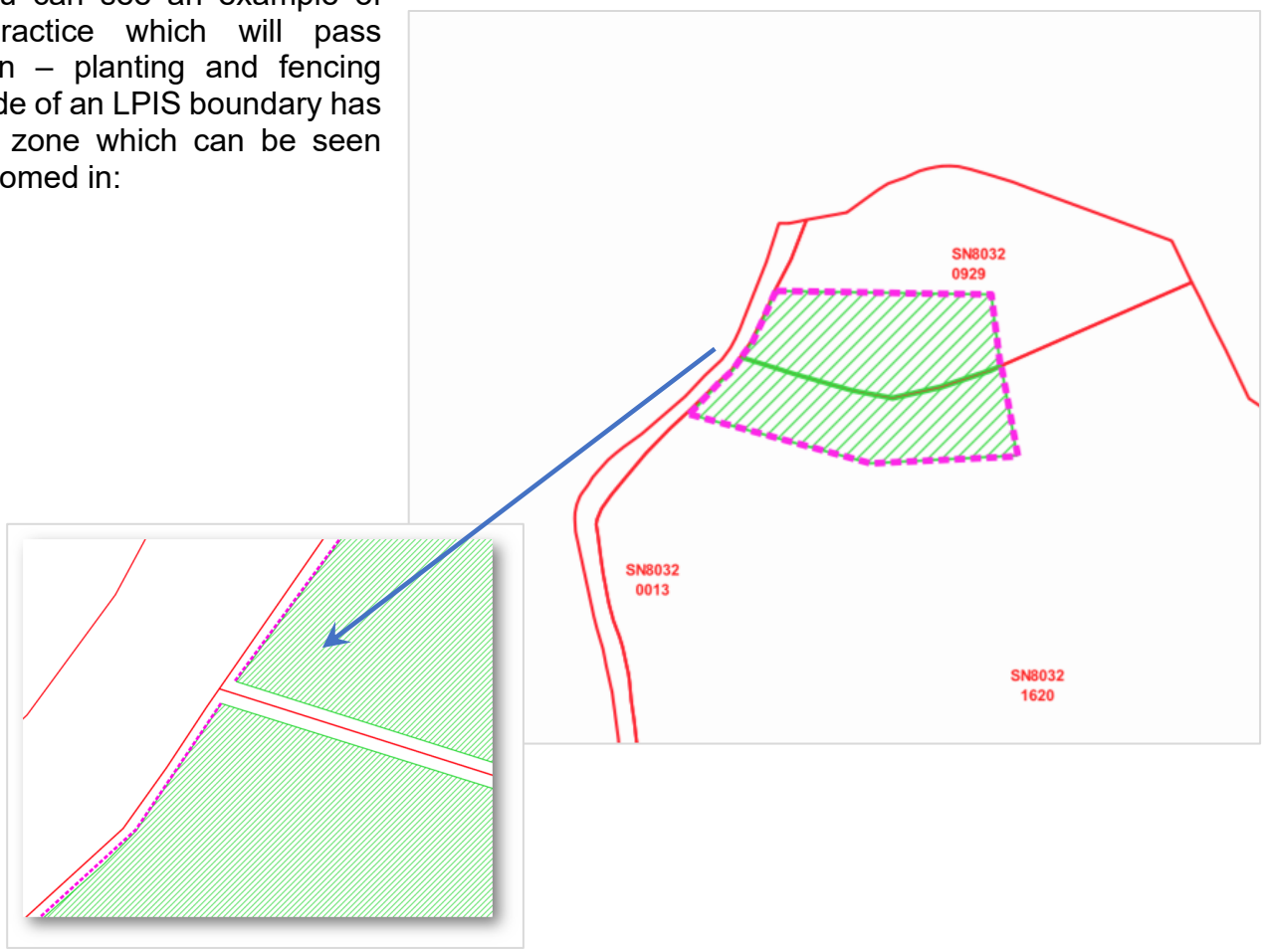
Water Pipes (*woodlandLinear*), Water Gates (*woodlandPoint*) and Water Troughs (*woodlandPoint*) can traverse planting areas and other mapped features.

Water options can be used to enable water transit to areas made inaccessible to grazing animals because of stock exclusion.



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

Example:

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

***woodlandLinear* – Fence Lines and Water Pipes**

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

Field Name in Shapefile	Description	Example of format required
UID	*Unique ID which you have allocated – this needs to be unique across woodlandArea, woodlandLinear and woodlandPoint shapes*	1
CODE	*Option Type, e.g. P595 Fencing or P563 Water Pipe*	P595 / P563
PARENT_UID	*Each line must be associated with a Planting Area – enter the UID of the planting area the fence is linked to*	2

Example – Fence item UID 3 with Code P595 is associated with Planting Area UID 1. Water Pipe item UID 5 is also linked to Planting Area UID 1:

	UID	CODE	PARENT_UID
1	3	P595	1
2	5	P563	1

***woodlandPoint* – Gates / Water Gates / Water Troughs**

For each point item created, add a *UniqueID*, *Option Code* and the associated parent *UniqueID*. Each point item MUST have the associated parent UniqueID (UID) set.

Field Name in Shapefile	Description	Example of format required
UID	*Unique ID which you have allocated – this needs to be unique across woodlandArea, woodlandLinear and woodlandPoint shapes*	1
CODE	*Option Type, e.g. P590 Standard Gate or P574 Water Trough*	P590 / P574
PARENT_UID	*Each point item must be associated with a parent item – enter the UID of the parent the item is linked to (Gates must have a Fence item set as the parent, while Water Gates/Troughs must have a Planting item set as the parent).*	2

Example – Water Trough UID 6 with Code P574 is associated with Planting Item UID 2, and Gate UID 7 with code P590 is associated with Fence Item 4:

	UID	CODE	PARENT_UID
1	6	P574	2
2	7	P590	4

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.

<table>
<tr><th>Error Messages</th><th>Explanation</th></tr>
<tr><td>Zip file does not include the following file(s): <fileList></td><td>Each upload of a shapefile .zip must contain at least the following file types for each of the main shape layers:

woodlandarea_*
woodlandlinear_*
woodlandpoint_*

.dbf
.shp
.shx
.prj
.cpg</td></tr>
<tr><td>The following PRJ file(s) do not match the format in the downloaded zip file: <fileList></td><td>The projection must be kept the same as the downloaded Shapefile - OSGB36 / British National Grid EPSG:27700</td></tr>
<tr><td>Shapefile does not include any planting areas.</td><td>There are no planting areas detected in the woodlandArea shape. Check that your planting polygons and attribute table data has saved correctly.</td></tr>
<tr><td>The code <code> is not valid for a planting area</td><td>The Option Code assigned in the Attribute Table for a planting item in the woodlandarea shape is not among the acceptable codes. Acceptable codes are:

<table><tr><th>Code</th><th>Option Name</th></tr><tr><td>P002</td><td>Biodiversity (1600)</td></tr><tr><td>P003</td><td>Carbon</td></tr><tr><td>P004</td><td>Mixed Woodland</td></tr><tr><td>P005</td><td>Biodiversity (1100)</td></tr><tr><td>P006</td><td>Upland Agro-Forestry</td></tr><tr><td>P007</td><td>Lowland Agro-Forestry</td></tr><tr><td>P008</td><td>Mixed - Fruit and Nut</td></tr></table></td></tr>
<tr><td>The code <code> is not valid for a fence item</td><td>The Option Code assigned in the Attribute Table for a fence item in the woodlandlinear shape is not among the acceptable codes. Acceptable codes are:

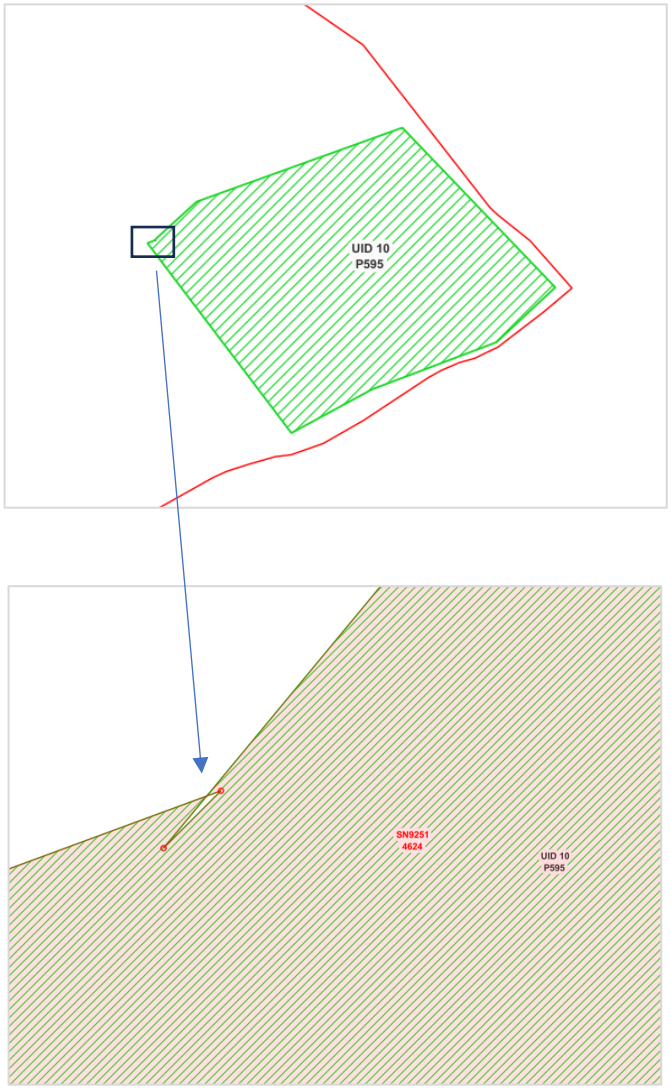
<table><tr><th>Code</th><th>Option Name</th></tr><tr><td>P595</td><td>Post & Wire Fencing</td></tr><tr><td>P518</td><td>Deer Fencing</td></tr></table></td></tr>
</table>

<table>
<tr><th>Error Messages</th><th>Explanation</th></tr>
<tr><td>The code <<i>code</i>> is not valid for a gate item</td><td>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:

<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></td></tr>
<tr><td>The tree species code <<i>code</i>> is not valid</td><td>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.

A full list of Tree Species codes can be found at https://www.gov.wales/woodland-creation-plan-scheme</td></tr>
<tr><td>The tree species <<i>code</i>> cannot be defined more than once within a planting area.</td><td>A tree species code has been used more than once for the planting item referenced. Please check and remove the duplicate code.</td></tr>
<tr><td>The percentage for tree species <<i>code</i>> must be greater than zero.</td><td>No tree species percentages have been entered for the planting item. Please check and add Tree Species Percentage(s) as appropriate.</td></tr>
<tr><td>The tree species mix for the planting area must add up to 100%.</td><td>For each planting item in the woodlandarea attribute table, the total of each tree species percentage in the row must equal 100%</td></tr>
<tr><td>This item does not have a valid item reference.</td><td>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.</td></tr>
<tr><td>This items reference is not unique within this Plan</td><td>All drawn items (planting areas, fencing and gates) must have a Unique ID (UID) allocated to it, which needs to be unique across the woodlandarea, woodlandlinear and woodlandpoint 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.</td></tr>
</table>

Error Messages	Explanation
Item <*Code*> should be linked with a planting area.	Each drawn fence line, water pipe or water gate/trough must have an associated planting area UID added to the PARENT_UID column within its respective attribute table. Note that this error is also used if you try to associated Fencing with an Agroforestry planting item (Agroforestry options are not eligible for fencing).
Item <*Code*> should be linked with a Fence.	Each added gate must have an associated fence item UID added to the PARENT_UID column within the *woodlandpoint* attribute table.
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.
Overlaps with <*UNIQUE_IDs*>. Remove any overlaps.	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.
<*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.

Error Messages	Explanation
<UNIQUE_ID> - The geometry of this item intersects itself The Geometry on the following items are invalid: *<UNIQUE_ID>*	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:  Note that using a 'snap tool' to draw polygons or fence lines is particularly susceptible to laying nodes on top of each other.

Error Messages	Explanation
The following items do not have any associated geometries: <*UNIQUE_IDs*>	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. 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.
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.
The minimum total area of new Agroforestry planting to be eligible for support is 0.5 hectares.	If you chose to add Agroforestry item(s) to your plan, there must be a minimum of 0.50ha of Agroforestry within the shapefile.