

Row Crop System Map Setup:

Tools Required:

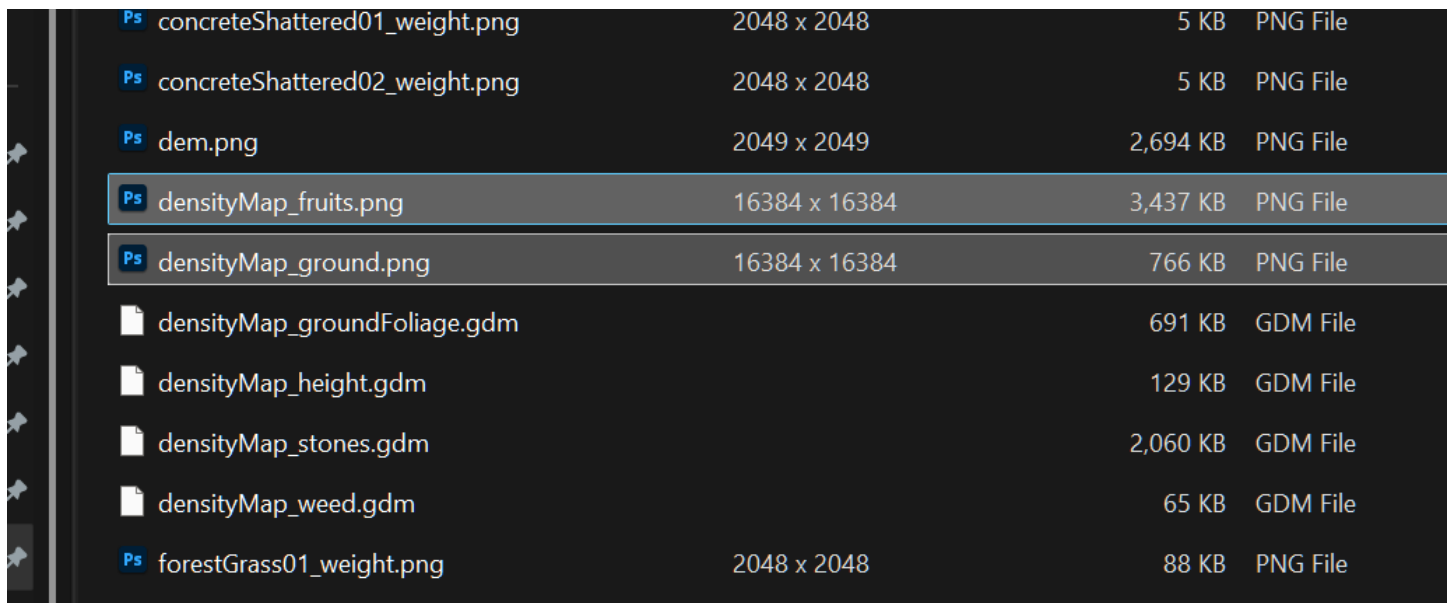
- Giants Editor
- Giants grleConverter

Disclaimer: If you are not familiar with Windows file structure, how to open and edit text files, Giants Editor, or how to open/edit zip files, then I would highly recommend brushing up on computer/modding basics before attempting to prep a map for the Row Crop System.

Note: When unzipping a map to edit, move the zip file away from the unzipped folder before doing anything with Giants Editor. Leaving the zip folder in the same folder as your unzipped map will cause GE to use files out of the zip file instead of your unzipped folder. This can cause problems creating gdm/grle files and/or GE to crash when trying to open the map.

Step 1:

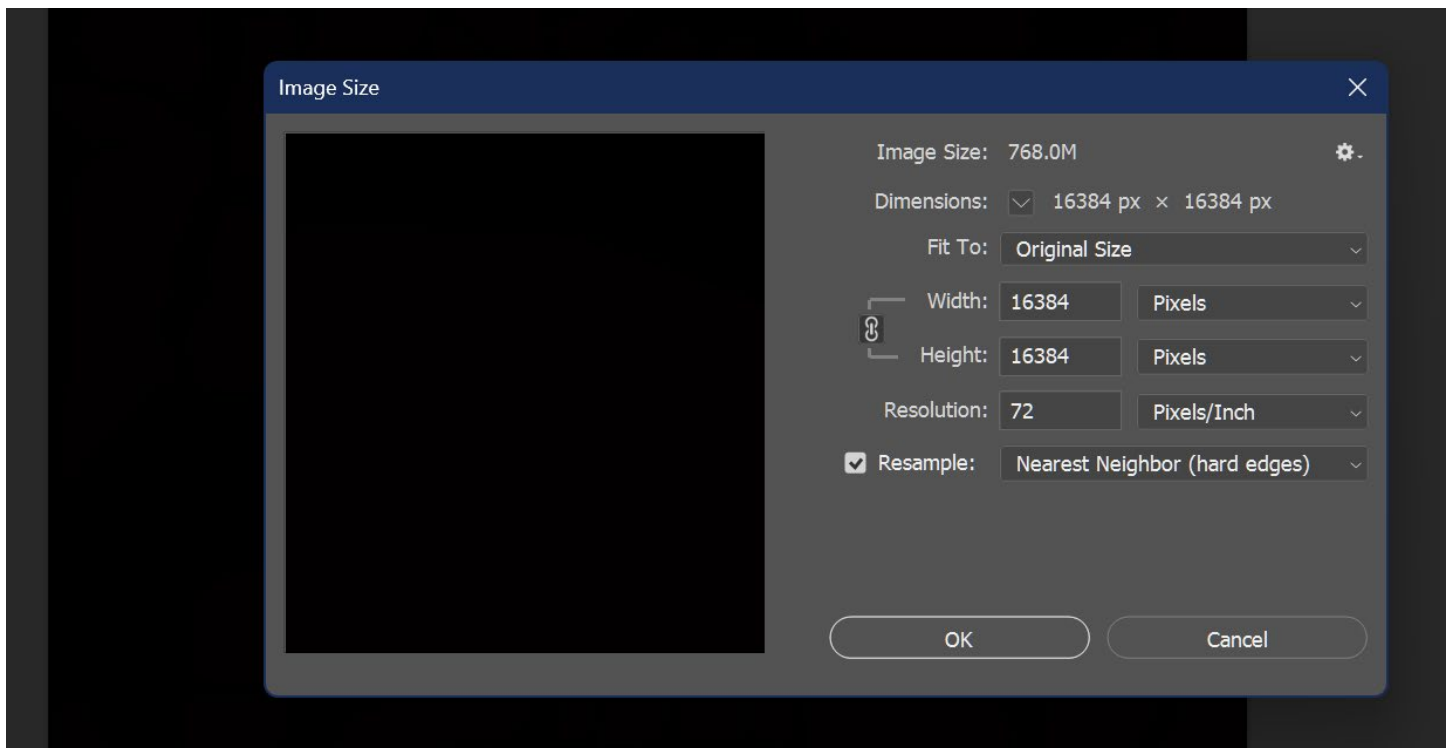
- Using grleConverter, convert the map densityMap_fruits.gdm to densityMap_fruits.png.
- Using grleConverter, convert the map densityMap_ground.gdm to densityMap_ground.png.
- Once both png files are created, delete both densityMap_fruits.gdm and densityMap_ground.gdm.



Ps	concreteShattered01_weight.png	2048 x 2048	5 KB	PNG File
Ps	concreteShattered02_weight.png	2048 x 2048	5 KB	PNG File
Ps	dem.png	2049 x 2049	2,694 KB	PNG File
Ps	densityMap_fruits.png	16384 x 16384	3,437 KB	PNG File
Ps	densityMap_ground.png	16384 x 16384	766 KB	PNG File
	densityMap_groundFoliage.gdm		691 KB	GDM File
	densityMap_height.gdm		129 KB	GDM File
	densityMap_stones.gdm		2,060 KB	GDM File
	densityMap_weed.gdm		65 KB	GDM File
Ps	forestGrass01_weight.png	2048 x 2048	88 KB	PNG File

Step 2:

- Open densityMap_fruits.png in an image editor like Paint.net, Gimp, or Photoshop.
Resize densityMap_fruits.png to 16384 x 16384 pixels.
 - If you are using the **1X low resolution option**, resize instead to **8192 x 8192 pixels**.
 - If you have a resampling option, select **nearest neighbor** for this.
 - If you select a different resampling option, the resultant image will be blended which will mess up the crop placement on that map. You want the pixels to be resized only, not blended in any way.
 - Image mode should be **RGB 8 bits per channel**.
- Save (not save as or save copy) the resized png file.
- Repeat the above process for densityMap_ground.png.



Step 3:

- Open your map i3d with Notepad++
- Search for **.gdm**
- Change any fileId pointer ending with .gdm to .png
 - For example, change densityMap.fruits.gdm to densityMap_fruits.png
- Repeat for any other filename ending in .gdm

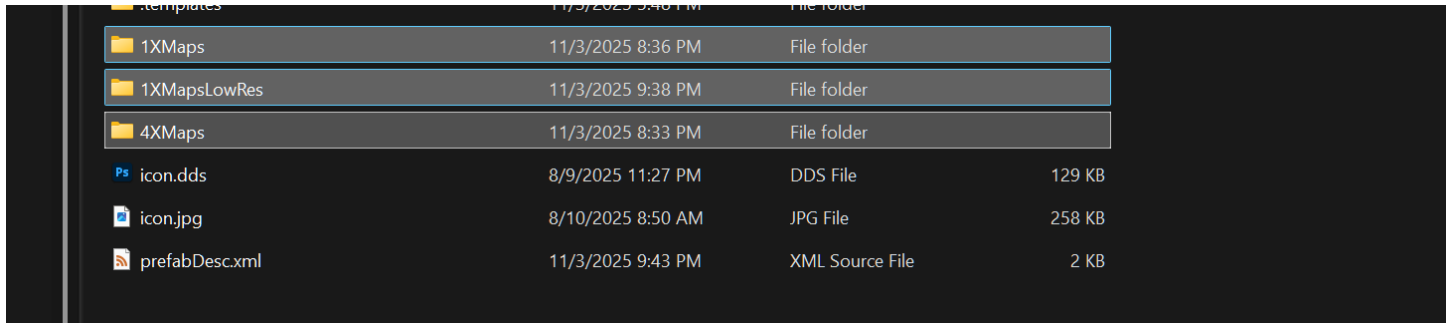
```
<File fileId="1" filename="data/dem.png"/>
<File fileId="658" filename="data/densityMap_fruits.png"/>
<File fileId="632" filename="data/densityMap_ground.png"/>
<File fileId="657" filename="data/densityMap_groundFoliage.png"/>
<File fileId="653" filename="data/densityMap_height.png"/>
<File fileId="660" filename="data/densityMap_stones.png"/>
<File fileId="659" filename="data/densityMap_weed.png"/>
<File fileId="4" filename="data/dirt01_weight.png"/>
```

- Search for **.grle**
- Change any fileId pointer ending with .grle to .png
 - For example, change infoLayer_limeLevel.grle to infoLayer_limeLevel.png

```
<File fileId="409" filename="data/gravelSmall02_weight.png"/>
<File fileId="588" filename="data/infoLayer_environment.png"/>
<File fileId="589" filename="data/infoLayer_farmlands.png"/>
<File fileId="597" filename="data/infoLayer_fieldType.png"/>
<File fileId="591" filename="data/infoLayer_indoorMask.png"/>
<File fileId="592" filename="data/infoLayer_navigationCollision.png"/>
<File fileId="595" filename="data/infoLayer_placementCollision.png"/>
<File fileId="596" filename="data/infoLayer_placementCollisionGenerated.png"/>
<File fileId="593" filename="data/infoLayer_tipCollision.png"/>
<File fileId="594" filename="data/infoLayer_tipCollisionGenerated.png"/>
```

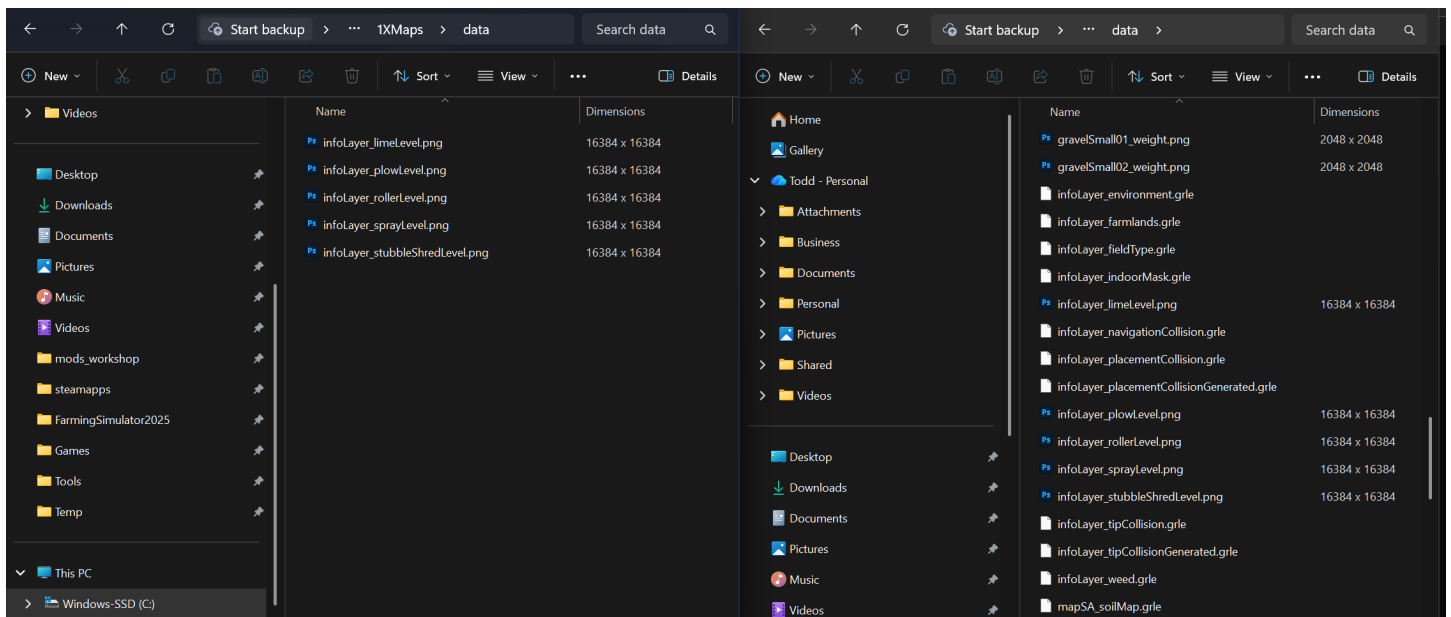
Step 4:

- Select the prefab folder for the type of map you are converting (1X, 1XLowRes, or 4X).
 - **1XMaps** is for 1X maps with **16384 x 16384 gdm/grle files**.
 - **1XMapsLowRes** is for 1X maps with **8192 x 8192 gdm/grle files** (more blocky, better performance).
 - **4XMaps** is for 4X maps with **16384 x 16384 gdm/grle files**.



1XMaps	11/3/2025 8:36 PM	File folder	
1XMapsLowRes	11/3/2025 9:38 PM	File folder	
4XMaps	11/3/2025 8:33 PM	File folder	
icon.dds	8/9/2025 11:27 PM	DDS File	129 KB
icon.jpg	8/10/2025 8:50 AM	JPG File	258 KB
prefabDesc.xml	11/3/2025 9:43 PM	XML Source File	2 KB

- Inside that folder, you will see a data folder. Copy its contents to your map's data folder (or the location of your map's gdm/grle files), overwriting all files.
- If your map has any grle file that **has the same name** as one of the png files copied over, delete those grle files.
 - For example, if your map's data folder has an infoLayer_limeLevel.png **and** an infoLayer_limeLevel.grle, **delete infoLayer_limeLevel.grle**.
- Repeat this for any other grle that also has a same named png file.

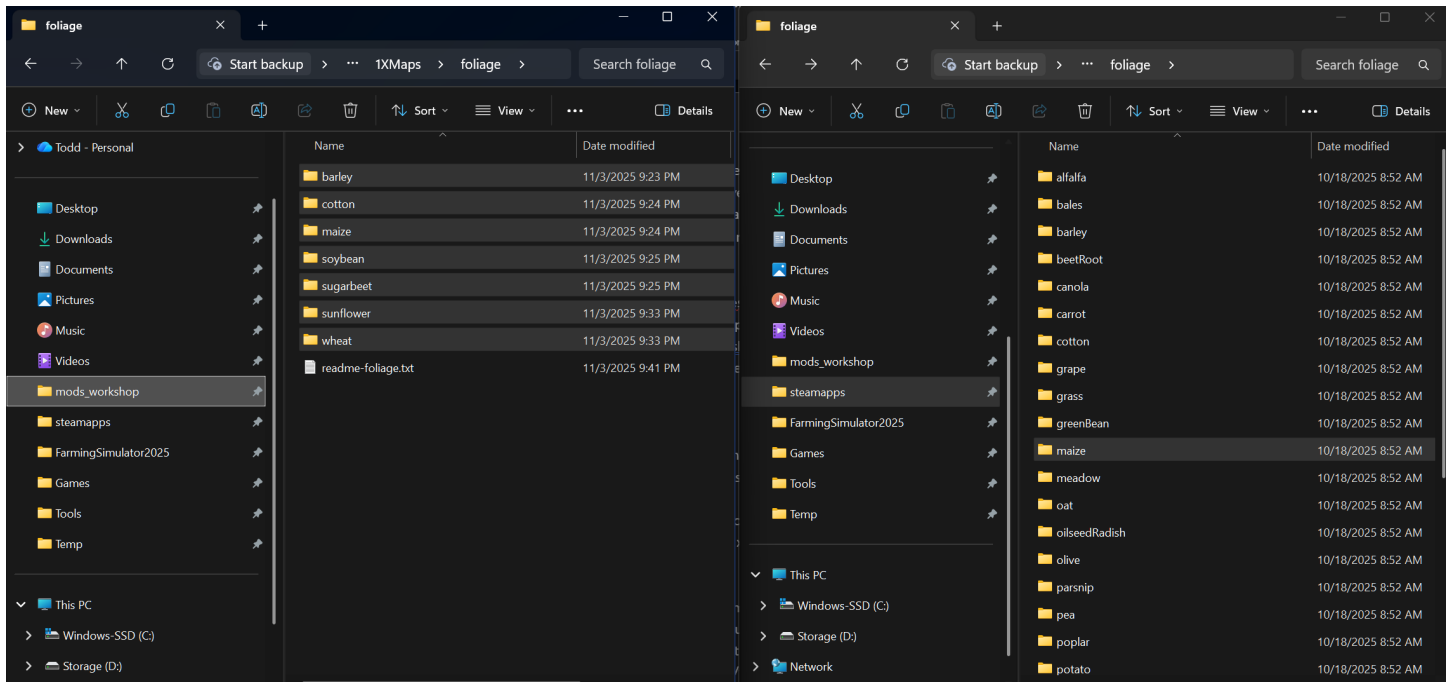


Name	Dimensions
infoLayer_limeLevel.png	16384 x 16384
infoLayer_plowLevel.png	16384 x 16384
infoLayer_rollerLevel.png	16384 x 16384
infoLayer_sprayLevel.png	16384 x 16384
infoLayer_stubbleShredLevel.png	16384 x 16384

Name	Dimensions
gravelSmall01_weight.png	2048 x 2048
gravelSmall02_weight.png	2048 x 2048
infoLayer_environment.grle	
infoLayer_farmlands.grle	
infoLayer_fieldType.grle	
infoLayer_indoorMask.grle	
infoLayer_limeLevel.png	16384 x 16384
infoLayer_navigationCollision.grle	
infoLayer_placementCollision.grle	
infoLayer_placementCollisionGenerated.grle	
infoLayer_plowLevel.png	16384 x 16384
infoLayer_rollerLevel.png	16384 x 16384
infoLayer_sprayLevel.png	16384 x 16384
infoLayer_stubbleShredLevel.png	16384 x 16384
infoLayer_tipCollision.grle	
infoLayer_tipCollisionGenerated.grle	
infoLayer_weed.grle	
mapSA_soilMap.grle	

Step 5:

- Look for a foliage folder inside of your map. If it does not have one, create one.
- Inside of prefab folder you have selected, you will find a foliage folder. Inside of that folder, select the crop folders you want to add to the Row Crop System. You can pick and choose; you do **not** need to copy them all.
- Copy these folders to your map's foliage folder, overwriting all files.



Step 6:

- Open your map's map.xml file, look for a <fruitTypes line.
- Fruit types can be set up one of two ways (or omitted). Your map may use either format.
 - If your fruitTypes line points to a filename, skip to **Step 7a**.
 - If your fruitTypes line does **not** point to a filename, skip to **Step 7b**.
 - If your fruitTypes line is missing or points to a \$data location, skip to **Step 7c**.
 - Choose only **ONE** of the three steps above, do **NOT** do all three!

Step 7a:

- If your fruitTypes section points to a filename, open the xml file listed (i.e. maps_fruitTypes.xml).
- Inside of that file, make sure all the RCS crops are listed. If any are not, make an entry for the missing fruitTypes.
 - Make sure the new entries are **above** any non-selectable crops in game. In other words, don't put cotton.xml after something like meadowUS.xml.
- Skip to **Step 8**

```
<bales filename="config/maps_bales.xml"/>  
<fruitTypes filename="config/maps_fruitTypes.xml"/>  
<fillTypes filename="config/maps_fillTypes.xml"/>  
<densityMapHeightTypes filename="config/maps_densityMapHeightTypes.xml"/>
```

```
<map xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:noNamespaceSchemaLocation="../../shared/xml/schema/fruitTypes.xsd">  
  <fruitTypes>  
    <fruitType filename="foliage/wheat/wheat.xml"/>  
    <fruitType filename="foliage/barley/barley.xml"/>  
    <fruitType filename="foliage/canola/canola.xml"/>  
    <fruitType filename="foliage/oat/oat.xml"/>  
    <fruitType filename="foliage/maize/maize.xml"/>  
    <fruitType filename="foliage/sunflower/sunflower.xml"/>  
    <fruitType filename="foliage/soybean/soybean.xml"/>  
    <fruitType filename="foliage/alfalfa/alfalfa.xml"/>  
    <fruitType filename="foliage/potato/potato.xml"/>  
    <fruitType filename="foliage/rice/rice.xml"/>  
    <fruitType filename="foliage/riceLongGrain/riceLongGrain.xml"/>  
    <fruitType filename="foliage/sugarbeet/sugarbeet.xml"/>  
    <fruitType filename="foliage/sugarcane/sugarcane.xml"/>  
    <fruitType filename="foliage/cotton/cotton.xml"/>  
    <fruitType filename="foliage/sorghum/sorghum.xml"/>  
    <fruitType filename="foliage/grape/grape.xml"/>  
    <fruitType filename="foliage/olive/olive.xml"/>  
    <fruitType filename="foliage/poplar/poplar.xml"/>  
    <fruitType filename="foliage/beetRoot/beetRoot.xml"/>  
    <fruitType filename="foliage/carrot/carrot.xml"/>  
    <fruitType filename="foliage/parsnip/parsnip.xml"/>  
    <fruitType filename="foliage/greenBean/greenBean.xml"/>  
    <fruitType filename="foliage/pea/pea.xml"/>  
    <fruitType filename="foliage/spinach/spinach.xml"/>  
    <fruitType filename="foliage/grass/grass.xml"/>  
    <fruitType filename="foliage/oilseedRadish/oilseedRadish.xml"/>  
    <fruitType filename="foliage/meadow/meadowUS/meadowUS.xml"/>  
  </fruitTypes>  
  
  <fruitTypeCategories>  
    <fruitTypeCategory name="GRAINHEADER">WHEAT BARLEY OAT CANOLA SOYBEAN SORGHUM RICE LONGGRAIN</fruitTypeCategory>  
    <fruitTypeCategory name="MAIZEHEADER">MAIZE SUNFLOWER</fruitTypeCategory>  
    <fruitTypeCategory name="MAIZECUTTER">MAIZE WHEAT BARLEY OAT CANOLA SORGHUM SOYBEAN SUNFLOWER</fruitTypeCategory>  
    <fruitTypeCategory name="DIRECTCUTTER">ALFALFA GRASS WHEAT BARLEY OAT CANOLA SORGHUM SOYBEAN SUNFLOWER</fruitTypeCategory>  
    <fruitTypeCategory name="SOWINGMACHINE">ALFALFA WHEAT BARLEY OAT CANOLA RICE LONGGRAIN OILSEEDRADISH GRASS PEA SPINACH</fruitTypeCategory>  
    <fruitTypeCategory name="SUGARCANE_PLANTER">SUGARCANE</fruitTypeCategory>  
    <fruitTypeCategory name="PLANTER">MAIZE SORGHUM SUNFLOWER SOYBEAN SUGARBEET COTTON GREENBEAN WHEAT BARLEY</fruitTypeCategory>  
    <fruitTypeCategory name="PLANTER_SMALL">CARROT PARSNIP BEETROOT SPINACH</fruitTypeCategory>  
    <fruitTypeCategory name="WEEDER">OILSEEDRADISH GRASS</fruitTypeCategory>  
    <fruitTypeCategory name="TOPLIFTINGHARVESTER">CARROT BEETROOT PARSNIP</fruitTypeCategory>  
    <!-- make sure MEADOW is listed here, required by the game itself -->  
    <fruitTypeCategory name="MOWER">ALFALFA GRASS WHEAT BARLEY OAT CANOLA SOYBEAN MEADOW</fruitTypeCategory>  
    <fruitTypeCategory name="COMBINE_MOWER">WHEAT BARLEY OAT CANOLA SOYBEAN</fruitTypeCategory>  
  </fruitTypeCategories>  
</map>
```

Step 7b:

- If your fruitTypes section does not point to a filename, look inside of that section for file pointers to the RCS crops you chose. Add entries for any missing fruit type. Be sure to list crops that are selectable in game **before** non-selectable crops. In other words, do not put something like maize.xml after meadowUS.xml.
- The format is <fruitType filename="path/to/your/foilage/fruitName.xml"/>
- You can look at the other fruit types listed for examples.
- You can also look at the Riverbend RCS test map for examples.
- Skip to **Step 8**

```
<fruitTypes>
  <fruitType filename="foilage/wheat/wheat.xml"/>
  <fruitType filename="foilage/barley/barley.xml"/>
  <fruitType filename="foilage/maize/maize.xml"/>
  <fruitType filename="foilage/sunflower/sunflower.xml"/>
  <fruitType filename="foilage/soybean/soybean.xml"/>
  <fruitType filename="foilage/sugarbeet/sugarbeet.xml"/>
  <fruitType filename="foilage/cotton/cotton.xml"/>
  <fruitType filename="$data/foilage/meadow/meadowUS/meadowUS.xml"/>
</fruitTypes>

<fruitTypeCategories>
  <!-- this is optional to let planters plant these crops -->
  <fruitTypeCategory name="PLANTER">WHEAT BARLEY</fruitTypeCategory>
  <!-- this is needed for the meadow to work properly in game -->
  <fruitTypeCategory name="MOWER">MEADOW</fruitTypeCategory>
</fruitTypeCategories>
```

Step 7c:

- If your fruitTypes section does not exist, or it points to a data location, you will have to add the fruit type xml pointers manually. You can do this right inside of your map xml.
- For each crop, add a <fruitType filename="path/to/your/foilage/fruitName.xml"/> line.
- You can look at the Riverbend RCS test map for examples.
- Skip to **Step 8**

```
<fruitTypes>
  <fruitType filename="foilage/wheat/wheat.xml"/>
  <fruitType filename="foilage/barley/barley.xml"/>
  <fruitType filename="foilage/maize/maize.xml"/>
  <fruitType filename="foilage/sunflower/sunflower.xml"/>
  <fruitType filename="foilage/soybean/soybean.xml"/>
  <fruitType filename="foilage/sugarbeet/sugarbeet.xml"/>
  <fruitType filename="foilage/cotton/cotton.xml"/>
  <fruitType filename="$data/foilage/meadow/meadowUS/meadowUS.xml"/>
</fruitTypes>

<fruitTypeCategories>
  <!-- this is optional to let planters plant these crops -->
  <fruitTypeCategory name="PLANTER">WHEAT BARLEY</fruitTypeCategory>
  <!-- this is needed for the meadow to work properly in game -->
  <fruitTypeCategory name="MOWER">MEADOW</fruitTypeCategory>
</fruitTypeCategories>
```

Step 8:

- Re-open your map i3d in Notepad++
- Search for foliage/ This should take you to your i3d foliage file pointers.
- For all RCS crops you added, change the path from \$data to the location of the file in your map.
- File pathing for i3d files start at the location of the i3d, not in the map root folder like xml files.
 - For example, if your foliage folder is in the same folder as your map i3d, you would use "foliage/maize/maize.xml" for the file path of corn.
 - If your foliage folder is one level higher than the map i3d, you would use ../foliage/maize/maize.xml" for the path of corn.
- Repeat this process for each RCS enabled foliage.
- Save your map i3d when finished and continue to **step 9**.

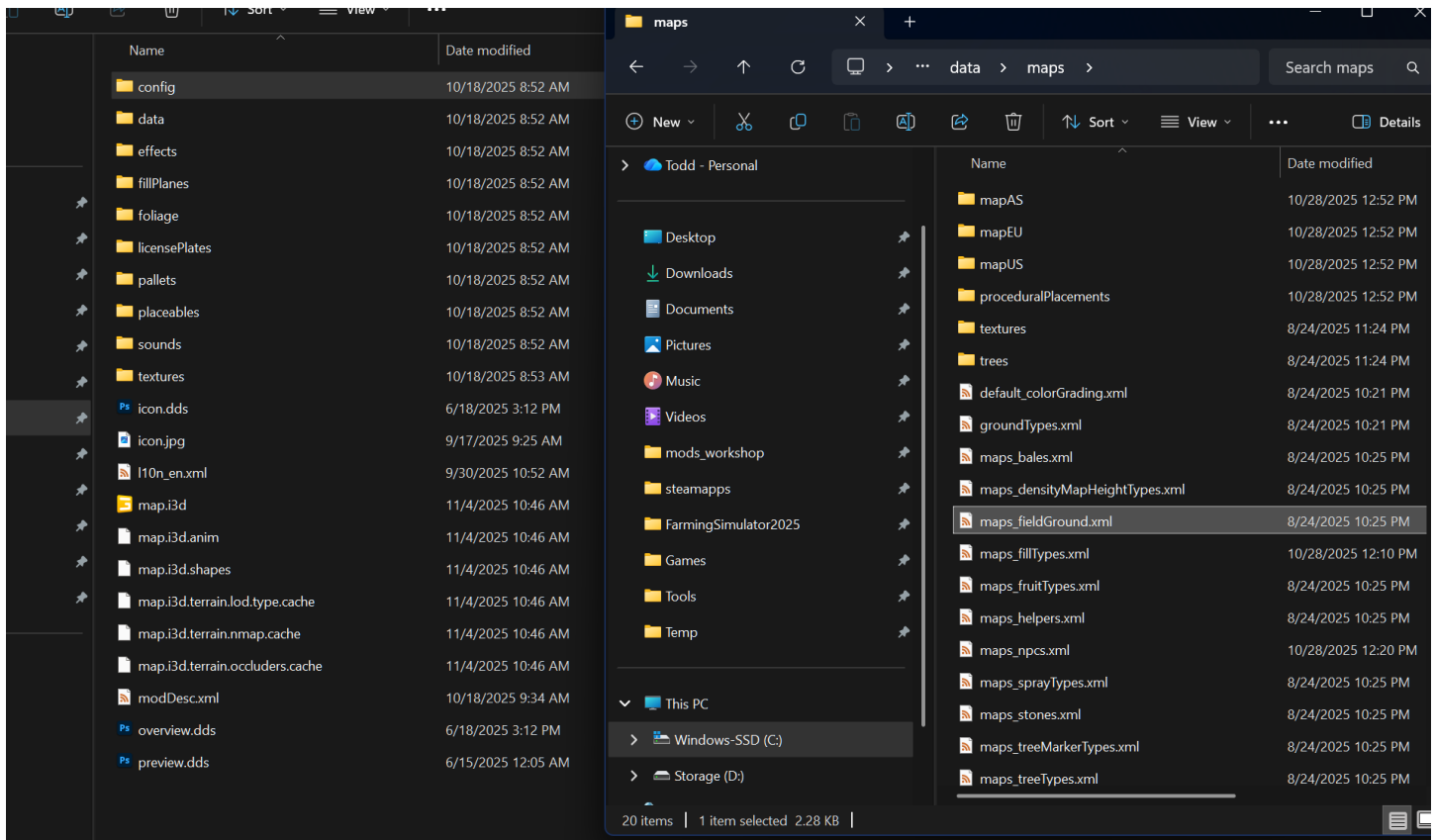
```
<!-- foliage -->
<File fileId="613" filename="data/sunflower/sunflower.xml"/>
<File fileId="608" filename="foliage/barley/barley.xml"/>
<File fileId="618" filename="foliage/cotton/cotton.xml"/>
<File fileId="606" filename="foliage/maize/maize.xml"/>
<File fileId="601" filename="foliage/meadow/meadowUS/meadowUS.xml"/>
<File fileId="619" filename="foliage/sorghum/sorghum.xml"/>
<File fileId="612" filename="foliage/soybean/soybean.xml"/>
<File fileId="631" filename="foliage/stone/stone.xml"/>
<File fileId="610" filename="foliage/sugarbeet/sugarbeet.xml"/>
<File fileId="611" filename="foliage/sunflower/sunflower.xml"/>
<File fileId="605" filename="foliage/wheat/wheat.xml"/>
```


Step 9:

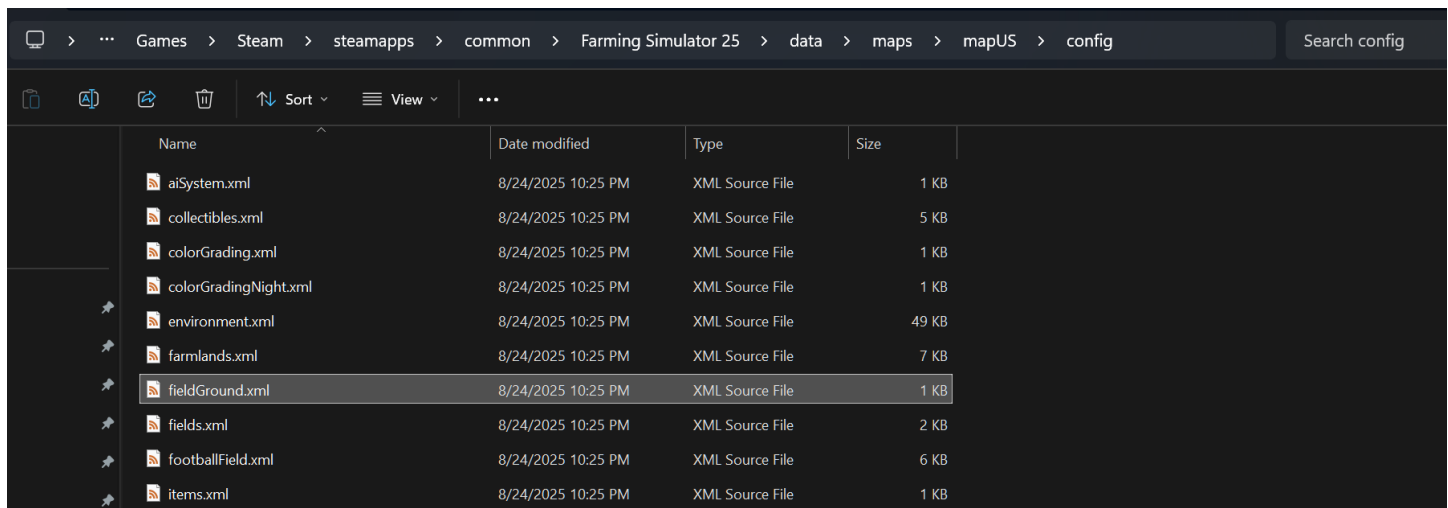
- Open your map xml file and search for the **<fieldGround** line.
- Take note of the filename pointer.
 - If the filename starts with \$data, **continue this step**.
 - If the filename does **not** start with \$data, skip to **Step 10**.
- Change the filename to your map's config location (i.e. maps/mapUS/config/maps_fieldGround.xml or wherever it is in your map).

```
<sounds filename="map/sounds/sounds.xml" />
<environment filename="map/config/environment.xml" />
<weed filename="map/config/weed.xml" />
<fieldGround filename="map/config/fieldGround.xml" />
<farmlands filename="map/config/farmlands.xml" />
<fields filename="map/config/fields.xml" />
<aiSystem filename="map/config/aiSystem.xml" />
```

- Go to your game install location data/maps/ folder.
- Locate the maps_fieldGround.xml and copy that to the config folder of your map.
- If your map does not have a config folder, create one in the same folder as your map i3d file.



- Go back to your game install location data/maps/mapUS/config/ folder.
- Look for fieldGround.xml and open that file.



- Copy the following section to your map's maps_fieldGround.xml file.
- Change the file pointers for <sprayLevel, <limeLevel, <plowLevel, etc to the location of these files in your map.

```

1  <?xml version="1.0" encoding="utf-8" standalone="no" ?>
2  <fieldGround>
3      <densityMaps>
4          <sprayLevel filename="$data/maps/mapUS/data/infoLayer_sprayLevel.png" firstChannel="0" numChannels="2" maxValue="2"/>
5          <limeLevel filename="$data/maps/mapUS/data/infoLayer_limeLevel.png" firstChannel="0" numChannels="2"/>
6          <plowLevel filename="$data/maps/mapUS/data/infoLayer_plowLevel.png" firstChannel="0" numChannels="1"/>
7          <stubbleShredLevel filename="$data/maps/mapUS/data/infoLayer_stubbleShredLevel.png" firstChannel="0" numChannels="1"/>
8          <rollerLevel filename="$data/maps/mapUS/data/infoLayer_rollerLevel.png" firstChannel="0" numChannels="1"/>
9          <fieldType filename="$data/maps/mapUS/data/infoLayer_fieldType.png" firstChannel="0" numChannels="1"/>
10         <default value="0"/>
11         <rice value="1"/>
12     </fieldType>
13 </densityMaps>
14 </fieldGround>

```

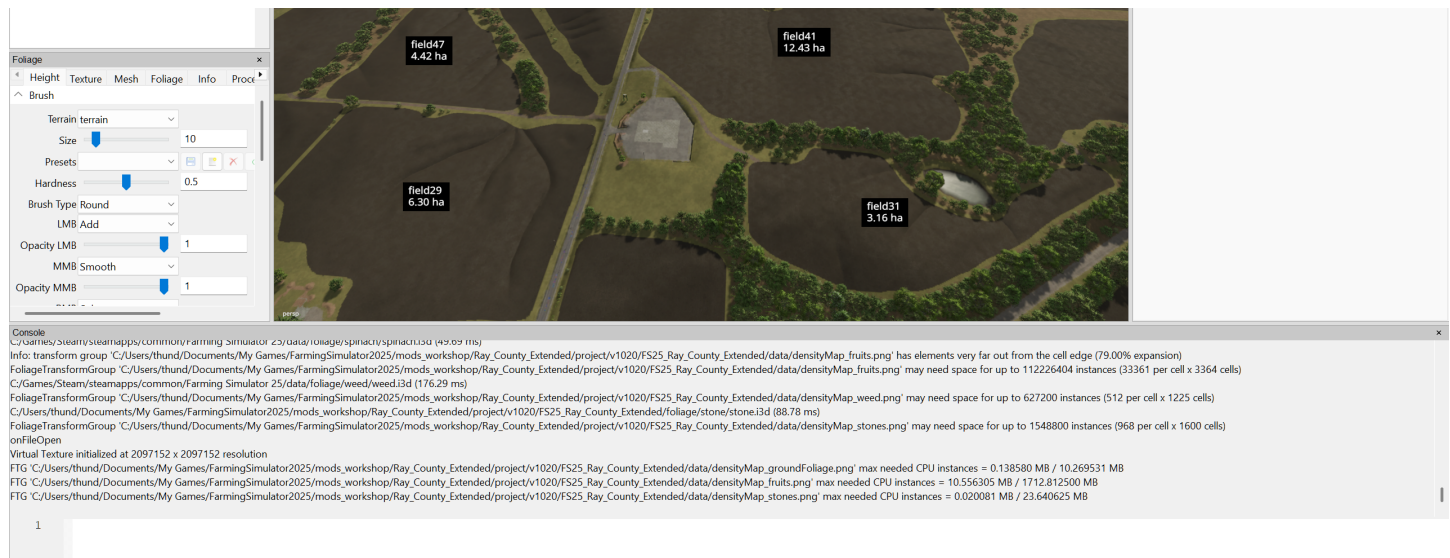
```

21     <ranges>
22         <sowable firstValue="1" lastValue="6" />
23         <sowing firstValue="6" lastValue="9" />
24     </ranges>
25 </groundTypes>
26
27 <groundAngle useDefaultTerrainDetail="true" firstChannel="4" numChannels="5" />
28
29 <sprayTypes useDefaultTerrainDetail="true" firstChannel="9" numChannels="3">
30     <fertilizer values="1" tireTrackColor="0.0529 0.0382 0.0242 1"/>
31     <manure value="2" tireTrackColor="0.0865 0.0630 0.0356 1"/>
32     <liquidManure values="3" tireTrackColor="0.0844 0.0648 0.0272 1"/>
33     <lime value="4" tireTrackColor="0.2582 0.2270 0.1683 1"/>
34     <straw value="5" tireTrackColor="0.0865 0.0630 0.0356 1"/>
35     <maize value="6" tireTrackColor="0.0865 0.0630 0.0356 1"/>
36 </sprayTypes>
37
38 <water useDefaultTerrainDetail="true" firstChannel="12" numChannels="1">
39     <watered value="1"/>
40 </water>
41
42 <!-- make these filename pointers point to the location of these files in your map -->
43 <sprayLevel filename="data/infoLayer_sprayLevel.png" firstChannel="0" numChannels="2" maxValue="2"/>
44 <limeLevel filename="data/infoLayer_limeLevel.png" firstChannel="0" numChannels="2"/>
45 <plowLevel filename="data/infoLayer_plowLevel.png" firstChannel="0" numChannels="1"/>
46 <stubbleShredLevel filename="data/infoLayer_stubbleShredLevel.png" firstChannel="0" numChannels="1"/>
47 <rollerLevel filename="data/infoLayer_rollerLevel.png" firstChannel="0" numChannels="1"/>
48
49 <fieldType filenames="data/infoLayer_fieldType.png" firstChannel="0" numChannels="1">
50     <default value="0"/>
51     <rice value="1"/>
52 </fieldType>
53 </densityMaps>
54 </fieldGround>

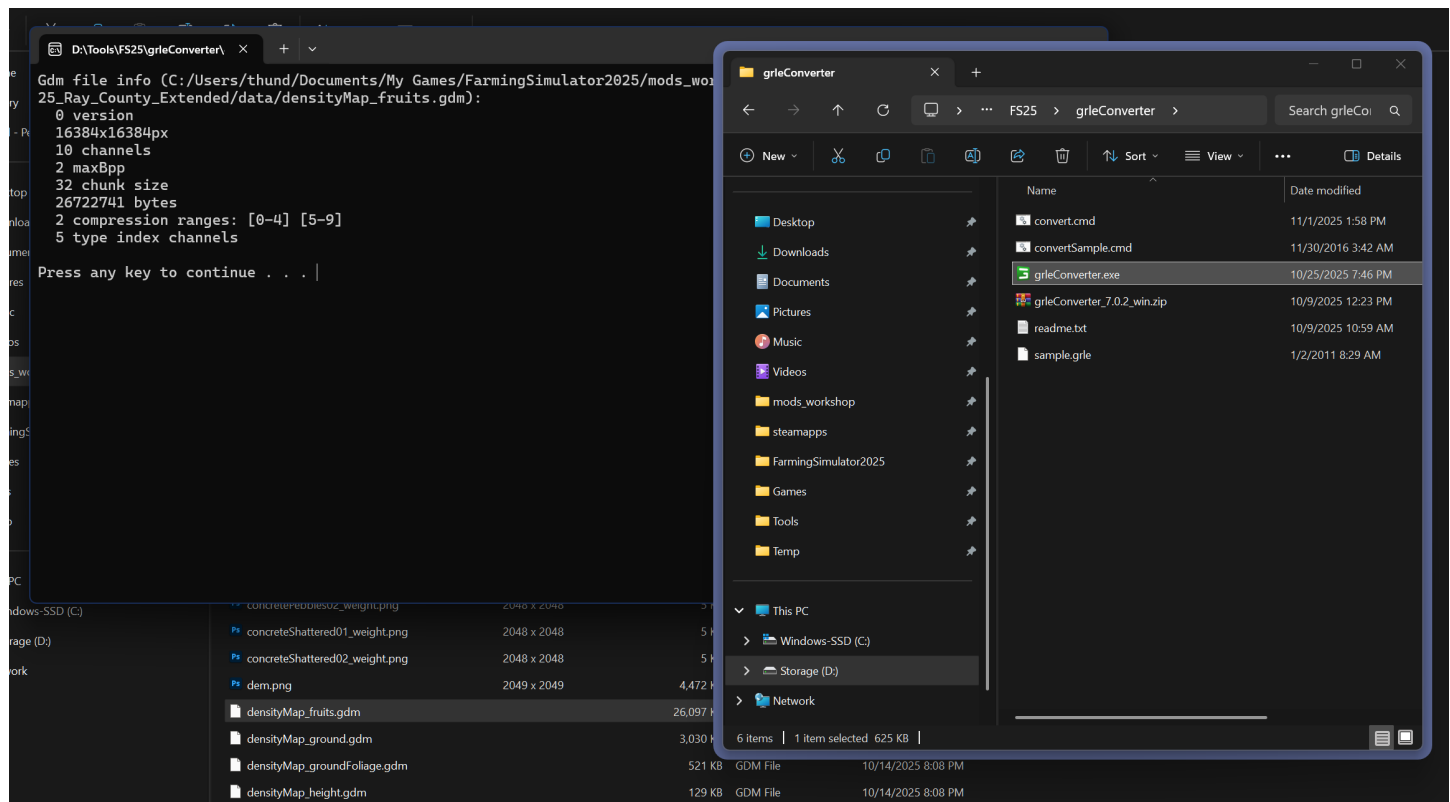
```

Step 10:

- Open the map in Giants editor (10.0.0.10 at the time of this writing).
- Check the bottom grey console area for errors (red text, don't worry so much about orange).



- If there are no errors relating to the crops or ground, save the map to create new gdm files.
 - This should re-create densityMap_fruits.gdm.
 - This should re-create densityMap_ground.gdm.
- **If there are errors, do not save!** Close GE and contact the map author or myself for advice.
- Verify that the new gdm files are created and use grlcConverter to check the sizes



From here you should be able to zip up your map, place it in your mods folder and give it a try. **Until you can verify that your install was successful, you only run the map and RCS mod (and optionally EasyDev). Also, keep an eye on your game log for any issues.** If everything looks ok in-game, you can go ahead and start a normal game with your normally installed mods.