Terrain and Trees

Overview

This documentation is for using and editing the new terrain and tree assets. You can also view an overview video here: https://youtu.be/9vG4oRur2Zo

If you encounter any issues please contact me at:
Stoolfeathergames@gmail.com

Or

Post your questions and requests on the Unity Forums:
https://forum.unity3d.com/threads/released-low-poly-series-landscape.428572/#post-2913199

The Terrain

Unity's Terrain allows users to paint a terrain in the editor. This is a fast and efficient way to create large areas.

Pros

- Easy to paint and edit
- You can paint trees and detail meshes onto the terrain
- Built in optimization features
- Faster and easier than using my Modular Terrain assets. Less chances for error as well.

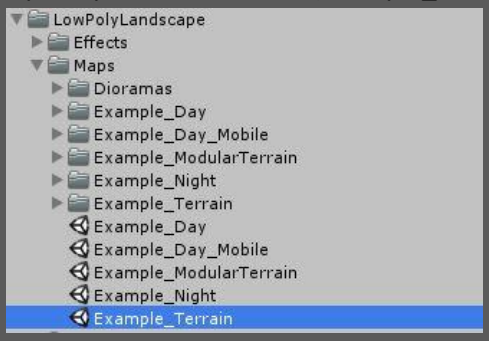
Cons

- Very smooth. Not the best for the low poly look. (That being said, there are a lot of create shaders and tools available on the asset store to get the terrain to display facets.)
- Not as stylized as the modular terrain assets
- Harder to get smaller details.

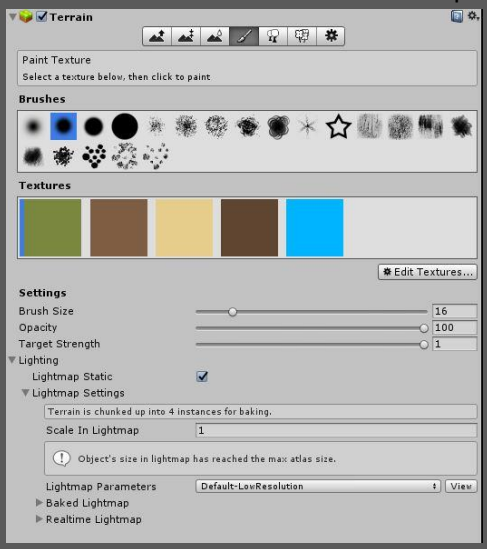
To fully understand how to use terrain and implement the new assets in this pack please read over the Unity Documentation on Terrain. https://docs.unity3d.com/Manual/script-Terrain.html

Painting Textures

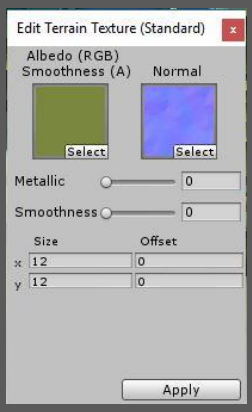
I included some basic color tiles to paint on the terrain. I also created a tillable normal map to help get that facet look. Open up the demo scene (Example_Terrain) to take a look at how it works.



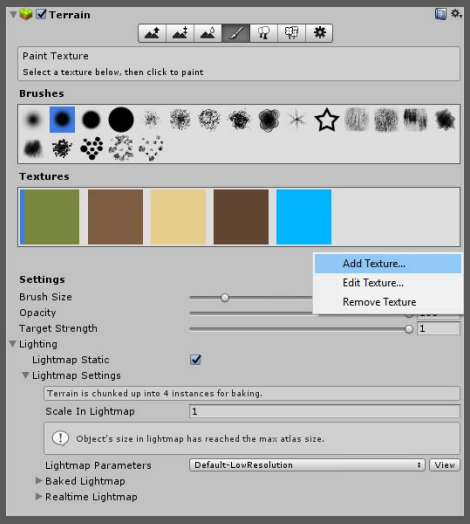
With the terrain selected click on the paint brush. Here you will see the textures I used to paint it.



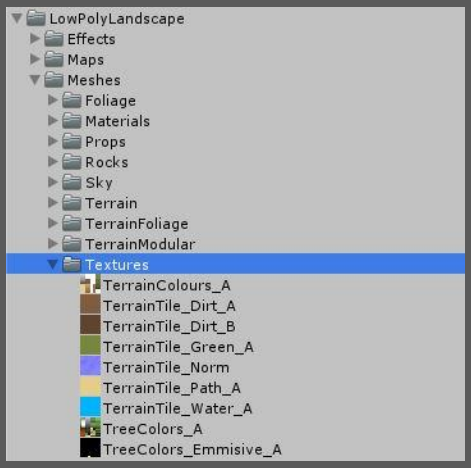
You can double click on a texture to see how it is set up. The albedo is a simple color and the normal map is a tillable faceted texture. You can also adjust the metalness and Smoothness here. You can also adjust the size, this determines how much the texture tiles across the terrain.



You can add your won texture by selecting “Edit Textures” and then selecting “Add Texture” As you can see below you can also edit and remove a texture in this menu. Once you texture is set up your ready to paint! Select a texture, pick a brush, adjust some settings and click and drag on the terrain!



The textures included in this set are located here:



Unity Trees

You can also paint Unity Trees on a terrain. Please read up on Unity Trees here: https://docs.unity3d.com/Manual/terrain-Trees.html and https://docs.unity3d.com/Manual/class-Tree.html

Trees have some pros and cons:

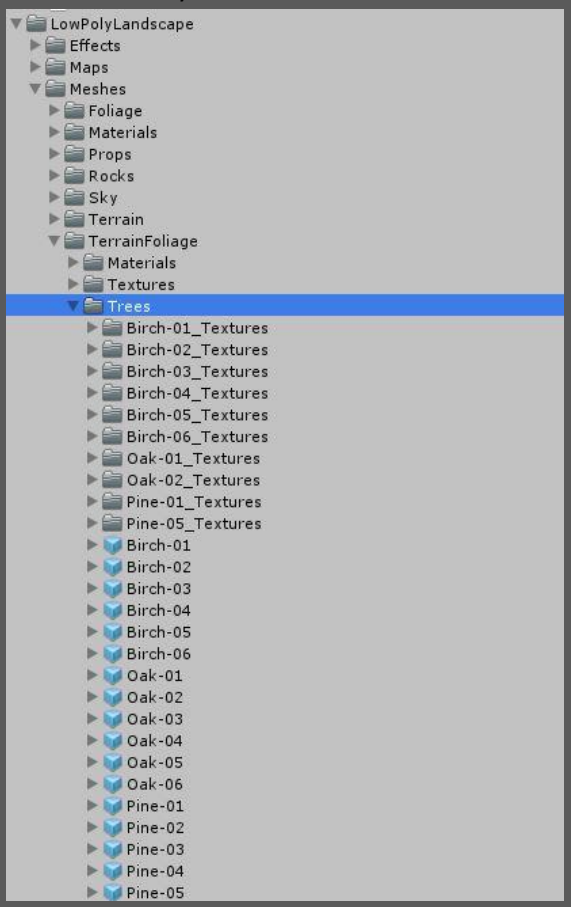
Pros:

- Unity Trees are very versatile, you can create lots of variety very easily
- You can paint trees just like textures! This is super-fast.
- The trees work with Wind Zones!!
- The trees auto adjusts if you repaint the height of the terrain.
- You can easily swap trees out

Cons:

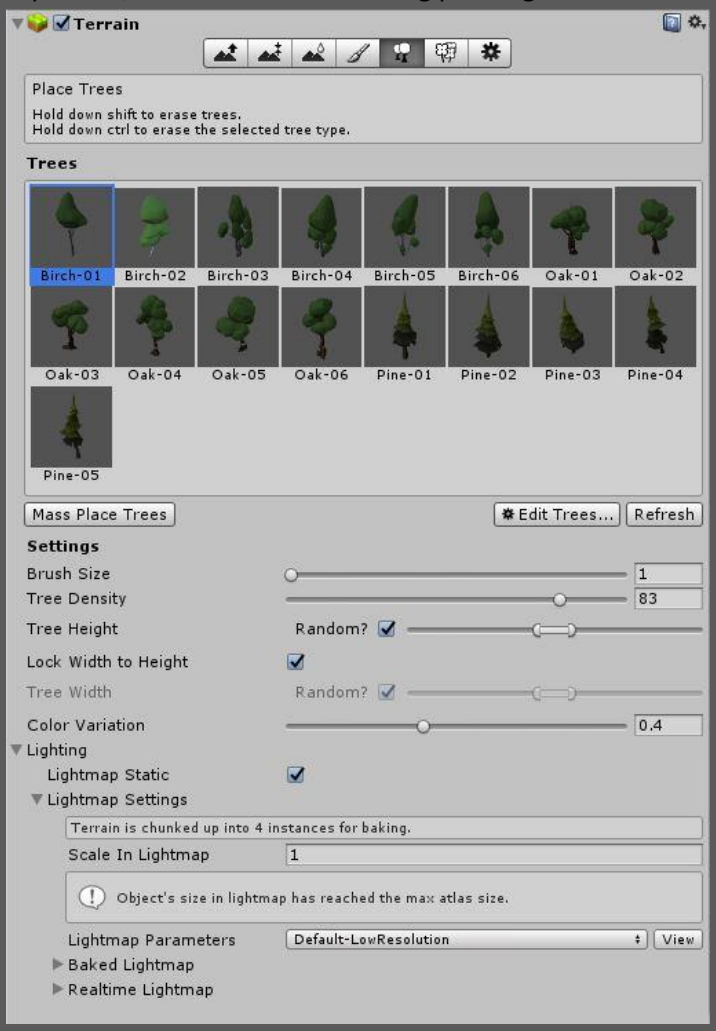
- You can't easily use custom trunk and branch meshes
- Painted trees don't randomly rotate as you place them…unless you make your trees a child in a prefab, but… then they don't work with wind. Hopefully this is just a bug that will get addressed.
- They're not quite as custom as a handmade tree.

The trees have their own folder; this is where the combined and optimized meshes/textures are stored. These are auto created when you make trees. All the Trees made in Unity's Tree Creator are located here:

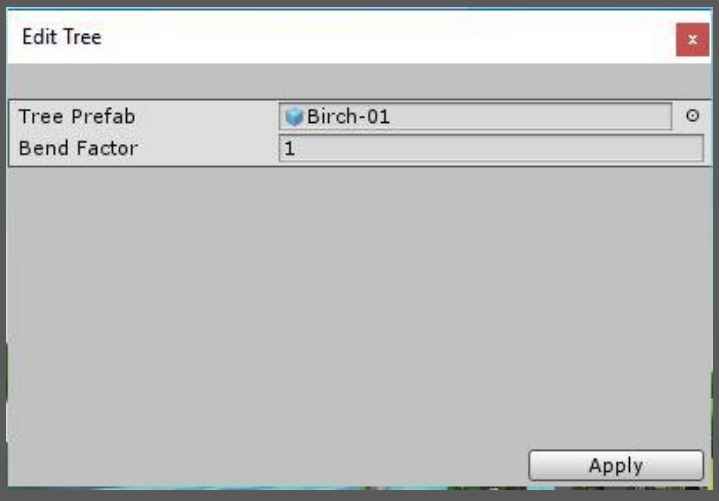


Painting Trees

Painting trees on the terrain is done the same way as painting textures. Select the terrain, click on the tree icon on the top menu, select a tree and starting painting on the terrain.



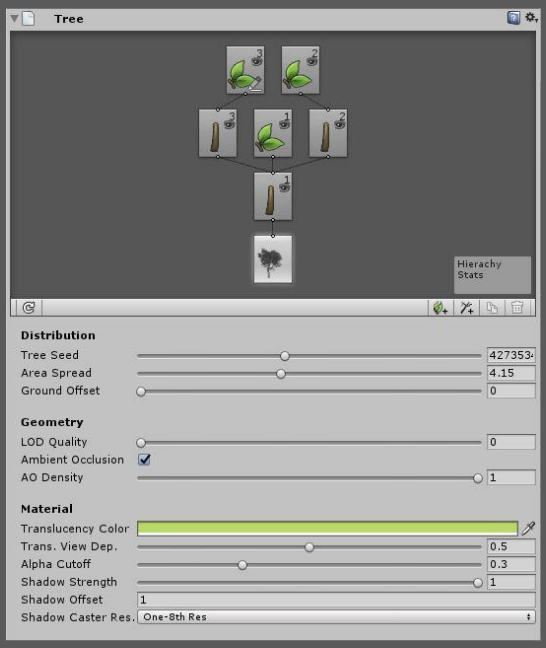
You can click on “Edit Trees…” to add, edit or remove a tree. If you make a new tree, select add tree and drag the tree asset into the empty slot. You can also use the “refresh” button to propagate updates if you edit a tree.



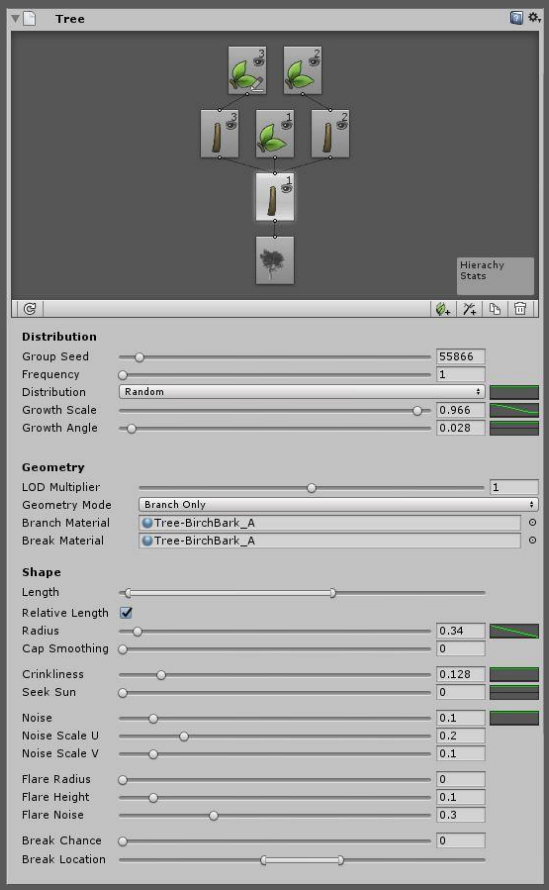
Unity Tree Creator

Unity has a built in tree creator. This allows you to construct trees out of modular assets. Let's take a look at how these are created. Select one of the trees in the project view (you cannot select individual trees painted on a terrain)

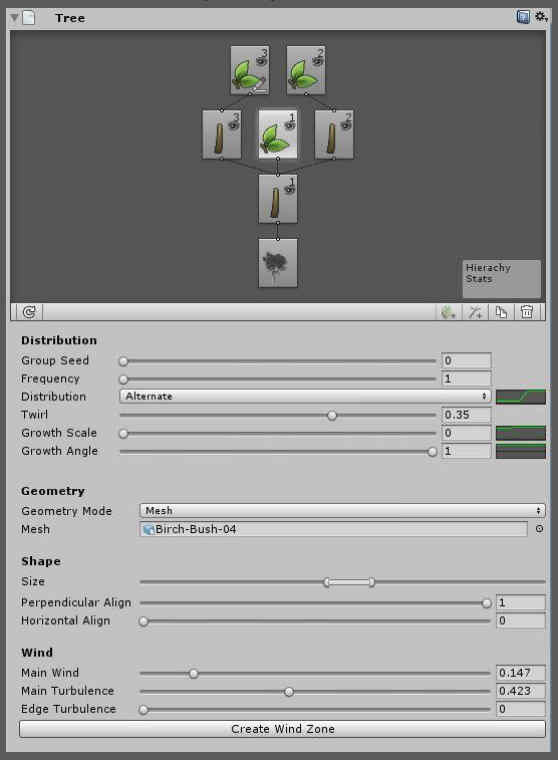
The Tree Creator looks like this. The base node controls some broad settings. We will cover these in the next section.



The selected icon is a trunk/branch. This is auto generated by Unity. These settings are adjusted to change the look and feel of the trunk and branches. The main thing to note here is that I assigned some custom materials. This is the bark material; I created bark textures to be used here.



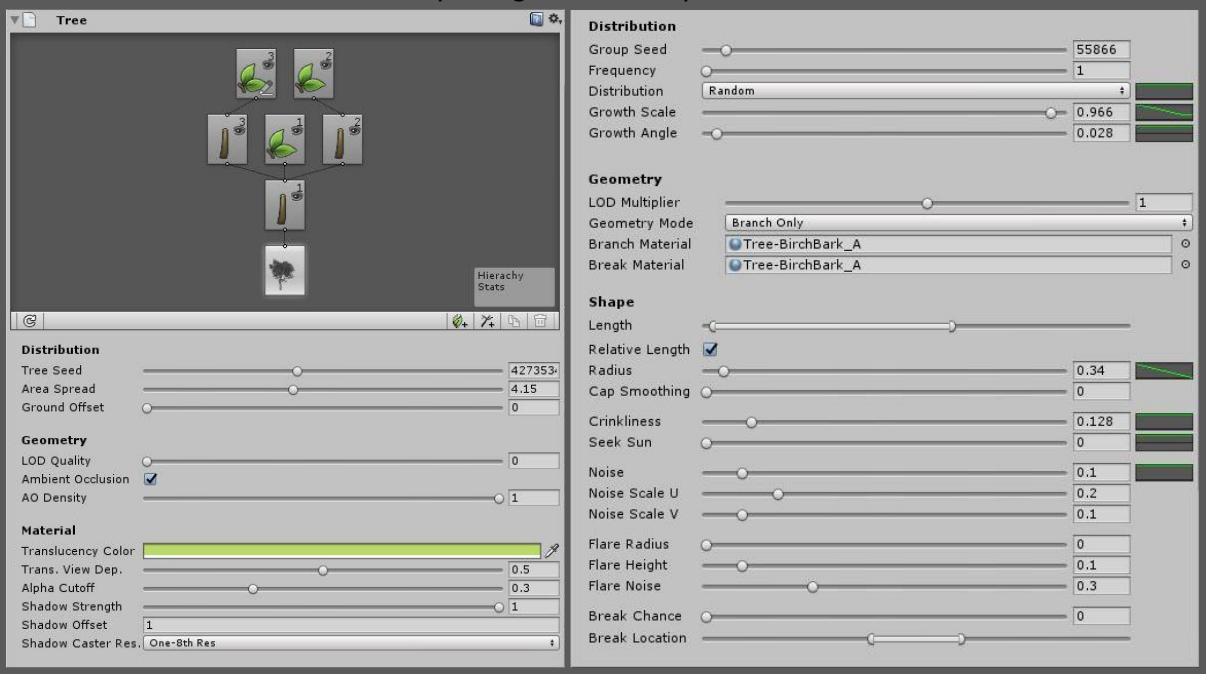
The leaves are where the magic happens. Here the geometry mode has been set to Mesh and one of the bush meshes has been added. The tree creator spawns these meshes along the branch they are attached too. You can adjust the size, location and frequency here.



Making New Trees or Editing Existing Ones

This is where the true power of using Unity Trees comes into play. You can make as many variations of the trees as you wish. Select a tree in the project view; duplicate it by hitting “Ctrl-D” Select the new tree.

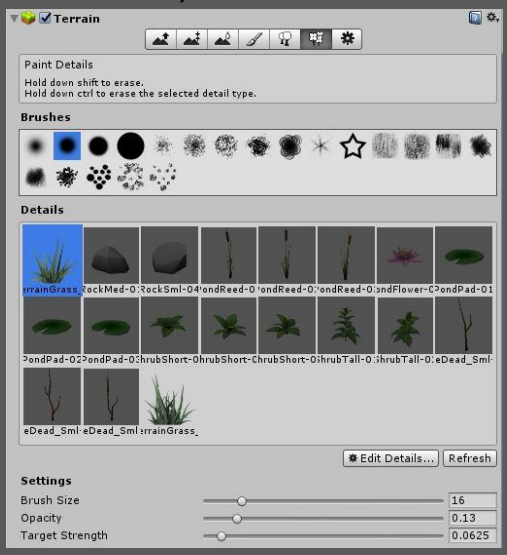
Adjust the “Tree Seed” to quickly get a new look. To further adjust the look select a branch and play around with the settings. The easiest ones to adjust are the “Seed”, “Length” and “Crinkliness” You can also select the leaves and adjust the “Size” and “Distribution” for easy changes. With this you can make countless tree variations!



Terrain Details

You can also paint grass and meshes onto the terrain to further customize your scene. You can read about this system here: https://docs.unity3d.com/Manual/terrain-Grass.html

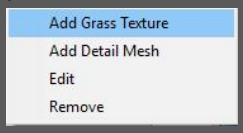
First navigate to the detail menu. Select your terrain and click on the flowers icon on the top right. This menu should look familiar by now.



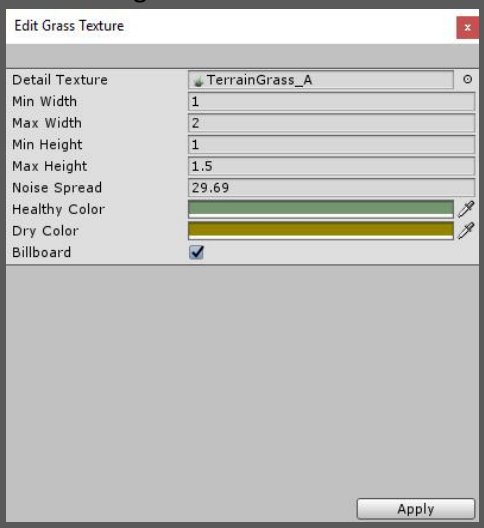
I have created two grass textures for this scene and added a few meshes for painting. Let's go over each one.

Grass:

Grass is a bit different. You only need to provide the terrain with a grass texture; it creates a plane or billboard when you paint. Click on the "Edit Details…" button and select "Add Grass Texture" or double click on an existing grass texture.



You can add your texture under "Detail Texture" … Make sure it has an alpha channel. You can also select the size of the grad and some color variety. Unity will randomly change the size and color of your grass to add variety. Finally you can select if the grass should be a Billboard (Always face the camera) or not. This is a personal preference so play around with settings.

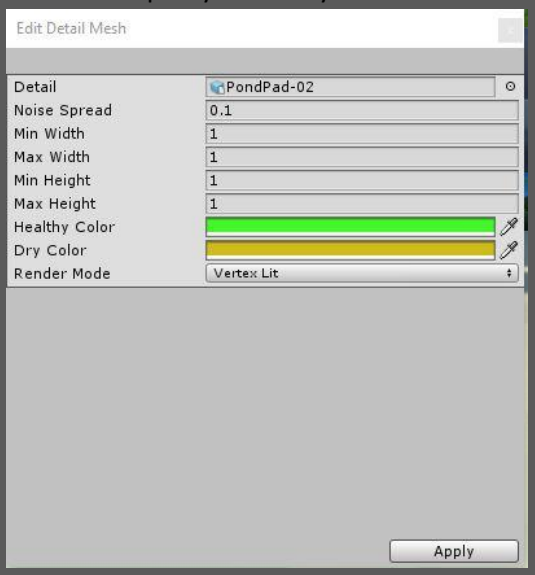


You can now paint grass just like any other mesh. Unity will add grass as you paint. I recommend you alternate between grass textures to break up repetition. Be careful, grass and detail meshes can really impact performance.
Unity grass works will update if you change the height of the terrain and is also works with wind zones!

Other Details

You can also paint meshes onto the terrain. This is much faster and more optimal than hand placing small assets. Again this is done the same way as the other assets with a few exceptions.

Add a mesh you want to use under “Detail” The meshes need to be exported with Y up, that is why I needed to re-export assets. The Width, height and Color works the same way as it did in grass.
The render mode is where things get tricky with the low poly style. “Vertex Lit” will allow the meshes to look faced so this is what we use. The “Grass” option doesn’t look how we want to but it will allow our meshes to work with wind zones. It’s up to you what you want to use.



Some Other Notes

- Detail meshes should be quite small since larger meshes may not sit well on sculpted terrain, but feel free to explore this.
- Again be careful with the amount of details used as they do impact performance.
- You also adjust the density of detail on the terrain; this can be an easy way to optimize.

Wind Zones

The demo scene has a Wind Zone, this affects grass and trees. Play around with settings to get a look you enjoy.
Note: Tree Leaves have an option called “Edge Turbulence” This is a vertex based displacement; it does not work with these low poly assets due to how the smoothing groups are set up.

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