The Terrain Tools Sample Asset Pack contains a collection of high quality, ready-to-use Assets to jump start your Unity Terrain development for your own project regardless which Render Pipeline you choose.

In this asset pack, you will find

- 42 Terrain stamps that cover features such as canyon, mountain, plateau, and rolling hills
- 16 Terrain Layers including grass, sand, soil, snow, rocky types
- 20 vegetation Prefabs including grass, fern, and bush to scatter on Terrain
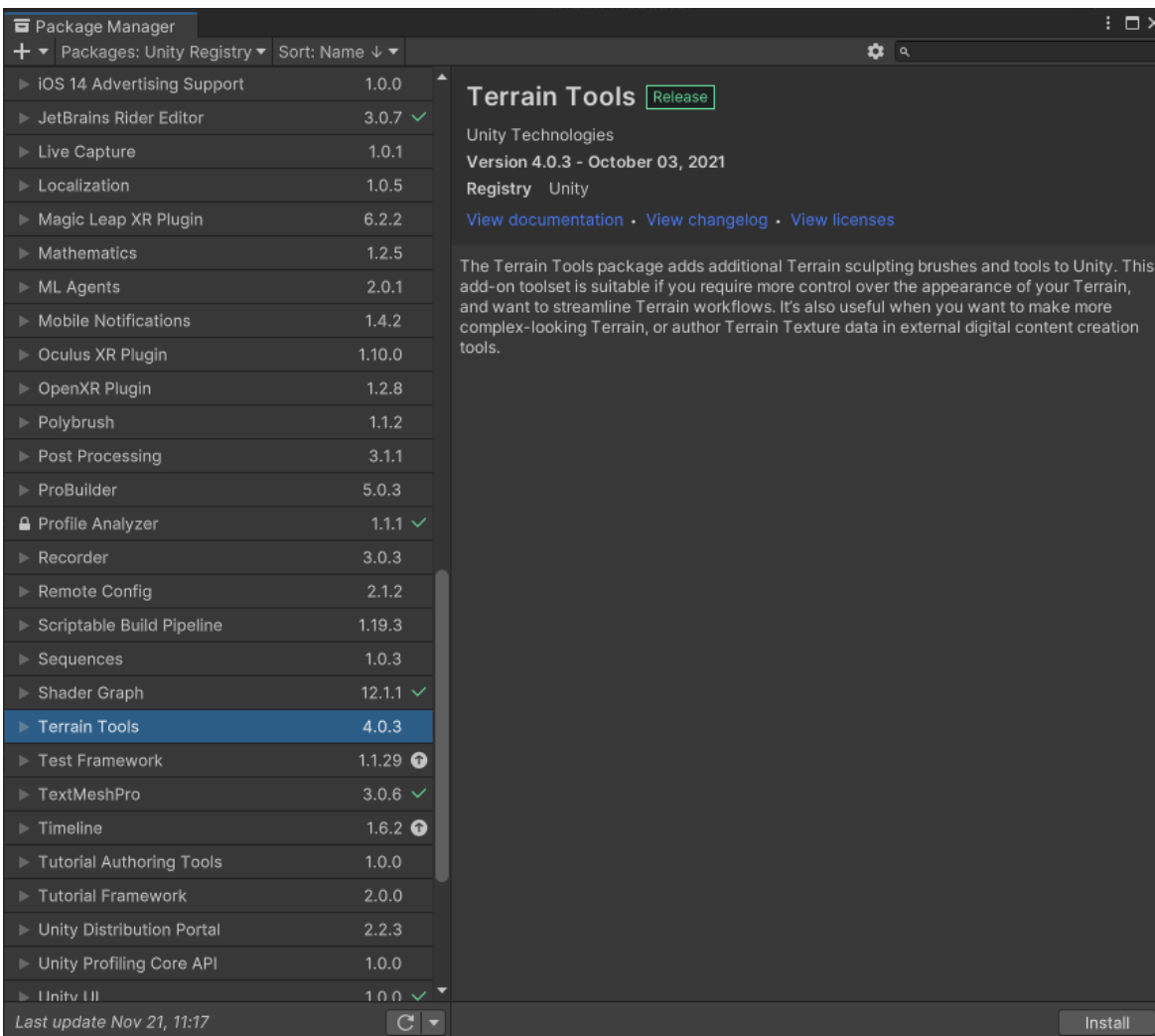
If you have Terrains in your project and would like to fast prototype in there as well as generate good visual results, this sample pack will be helpful.

In this README, you will find the setup instructions and a few tutorials about how to best utilize these sample assets on your Terrain.

Setup to use the Terrain Tools package

For the best editing experience and results, we recommend you to install the Terrain Tools package in your project. The Terrain Tools package comes with a set of additional brushes and advanced controls, as well as a Toolbox to streamline your Terrain editing workflows.
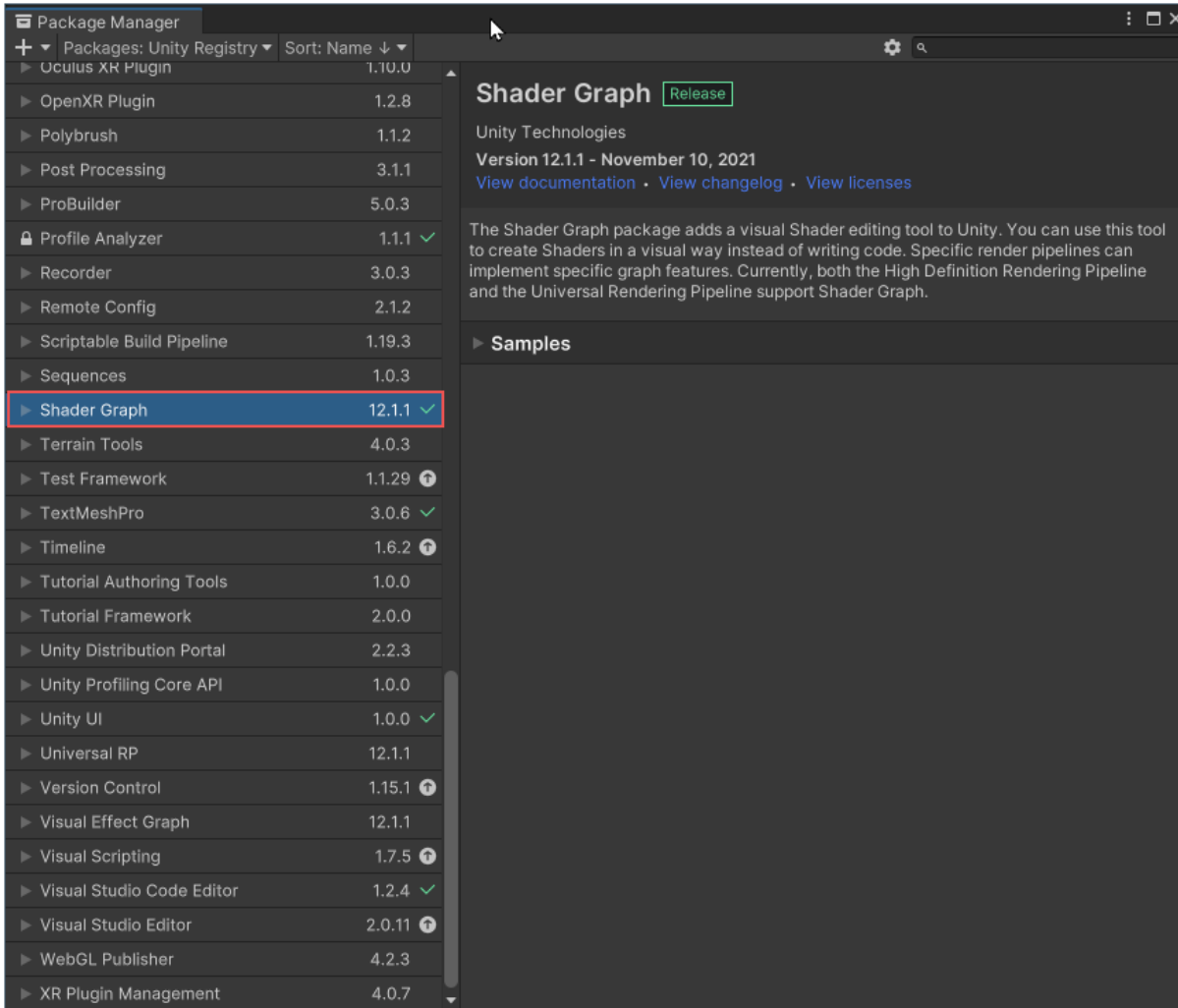
The Terrain Tools package can be found and installed from the Package Manager within the Editor.
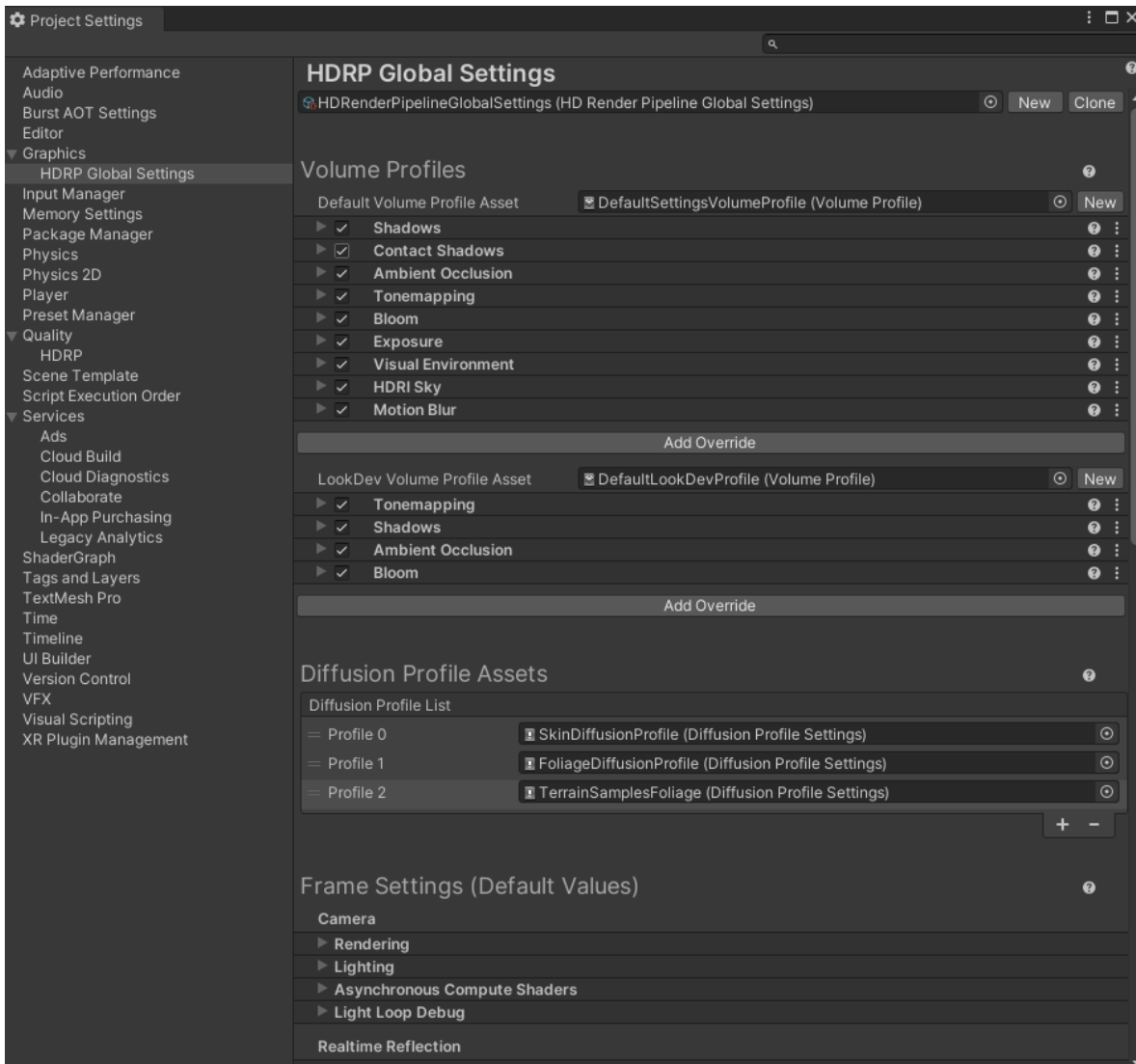
Please check out the [package documentation](#) for more information about Terrain Tools.

Setup to use this samples pack in different Render Pipelines

This sample pack can be used in any render pipeline within Unity, built-in, [URP](#) or [HDRP](#). The Shader Graph files in the pack require installing the [Shader Graph](#) package in your project. The Package Manager will install the Shader Graph package while importing the samples pack. However, if you are on a newer version of Unity than **2021.2.0f1**, you will need to manually upgrade the package to the latest version. Look for the Shader Graph package in the Package Manager, and click the **Update** button on the right bottom of the window.

Please **note** that, if you are installing the samples package in a **HDRP** project, the shaders used on the Details objects use a [Diffusion Profile asset](#) for Subsurface Scattering effects, which needs to be registered in the Render Pipeline Global Settings.

More information about the new Shader Graph features coming in 2021.2 and how we utilize them in these Terrain Samples is mentioned in the Paint Terrain using Details tutorial later in this document.
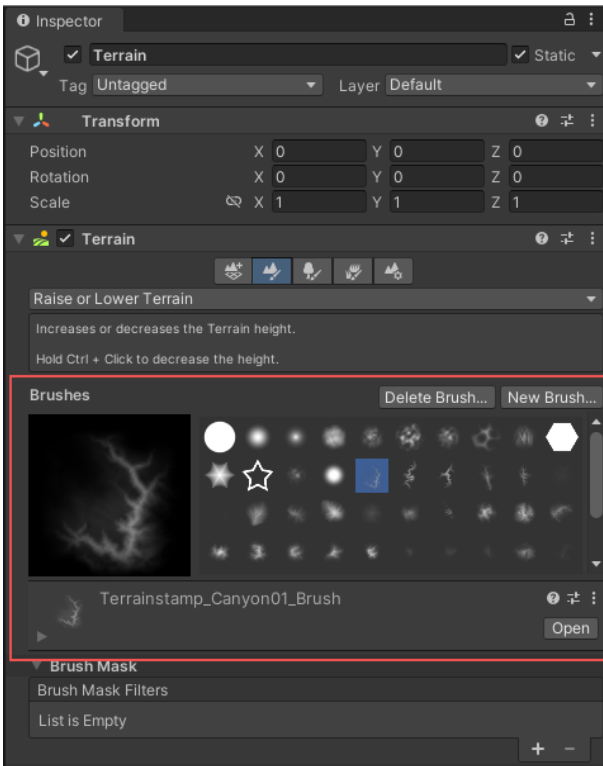
Tutorials

If you are new to Unity Terrain, please also check out the [Terrain manual](#) that covers some basics about editing Terrains in the Editor. Here's a good entry level [Terrain presentation](#) from Unite Now 2020.
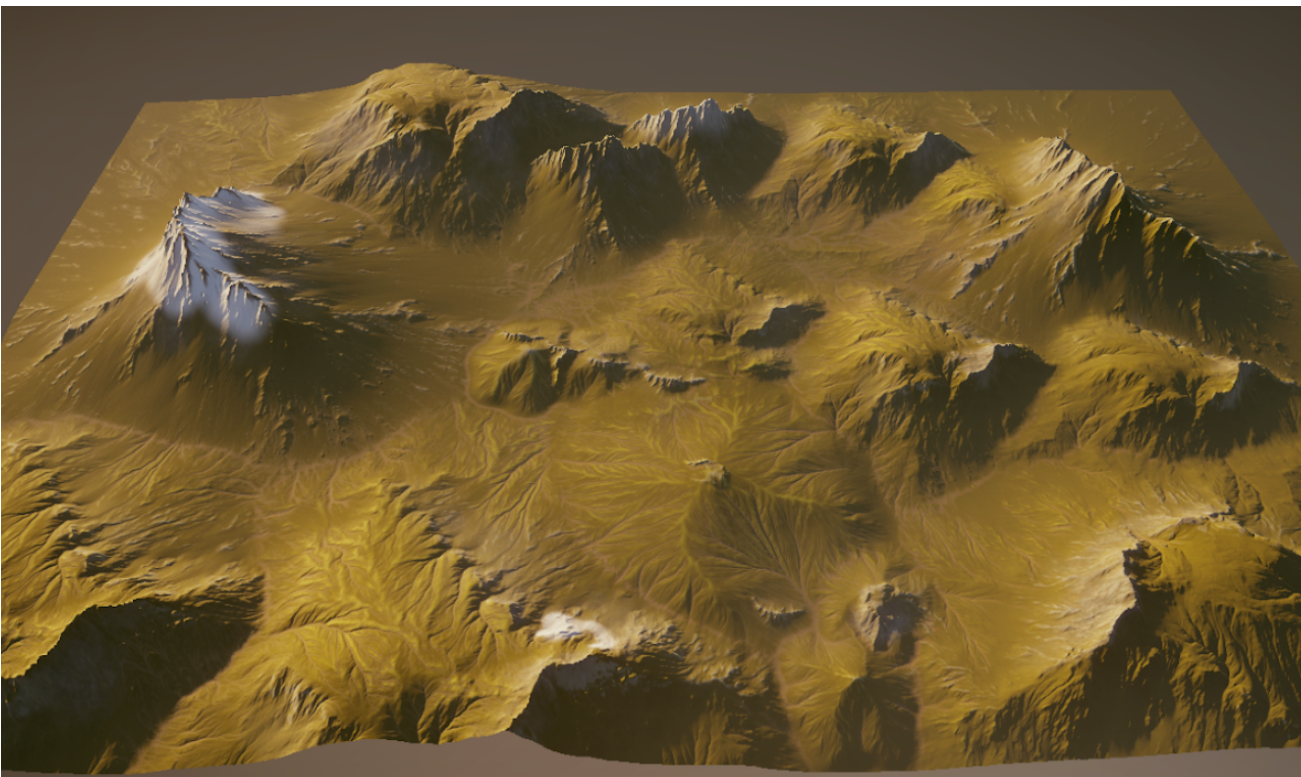
Please note that screenshots present in this document are taken from a project that has the Terrain Tools package installed.

1. Paint Terrain using heightmap stamps

Once you have the Sample Asset Pack installed, the new Terrain stamp brushes from the pack should show up in the Brush menu automatically.
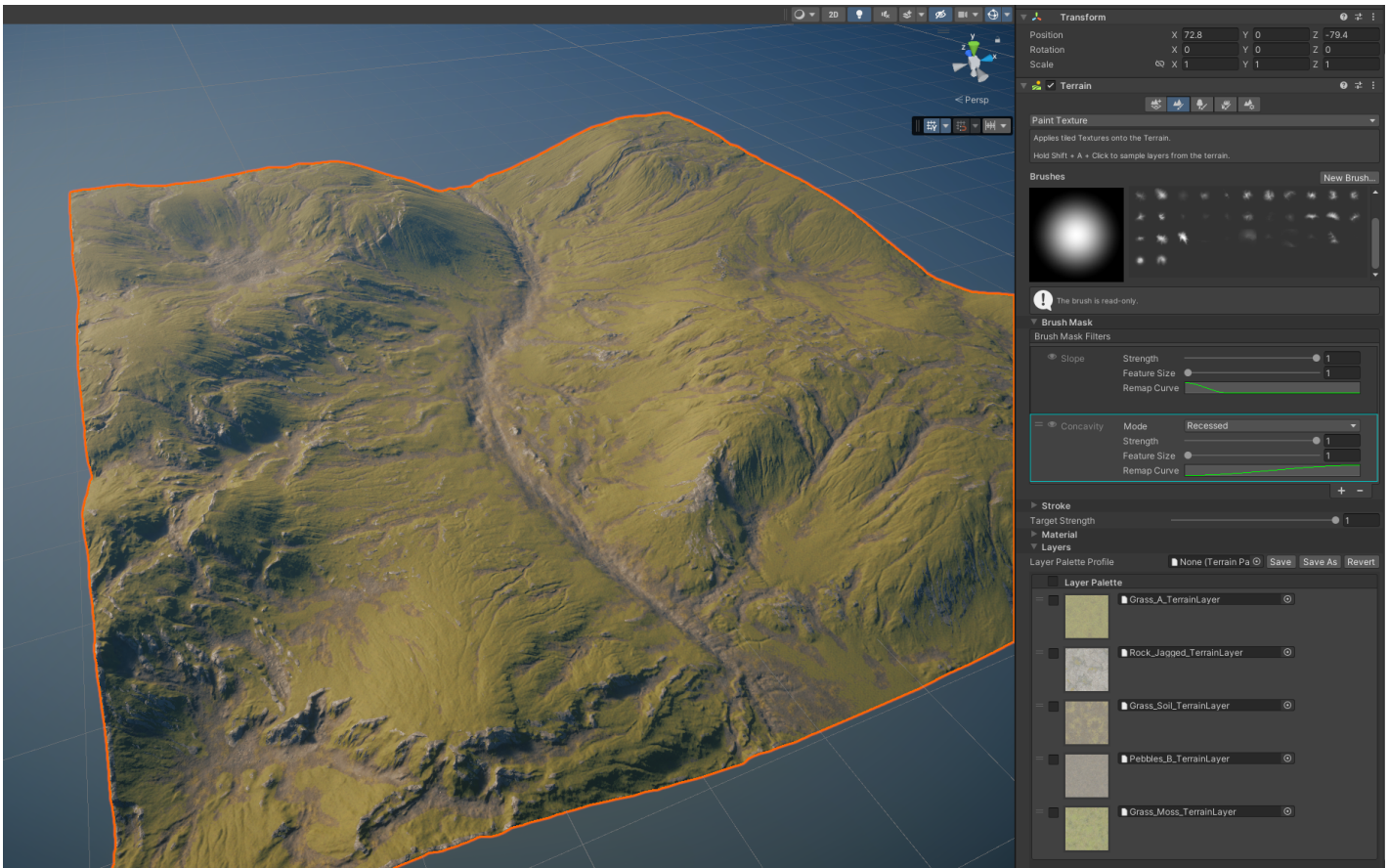

Select the Stamp Terrain brush to stamp onto the Terrain, and you can use this brush to mix and match various stamps for desired results. Here's an example of a scene made from the latest 4K heightmap stamps.
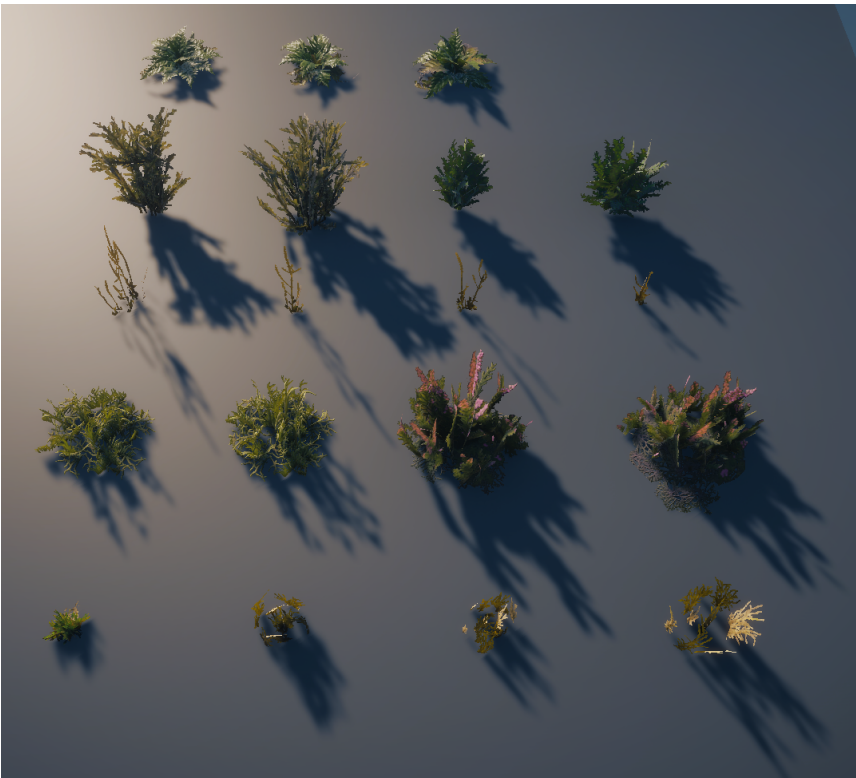
2. Paint Terrain using Terrain Layer materials

The Paint Texture brush is meant for painting materials onto the Terrain tiles. With the Brush Mask Filters addition from Terrain Tools, you can easily generate nice looking results like this example.
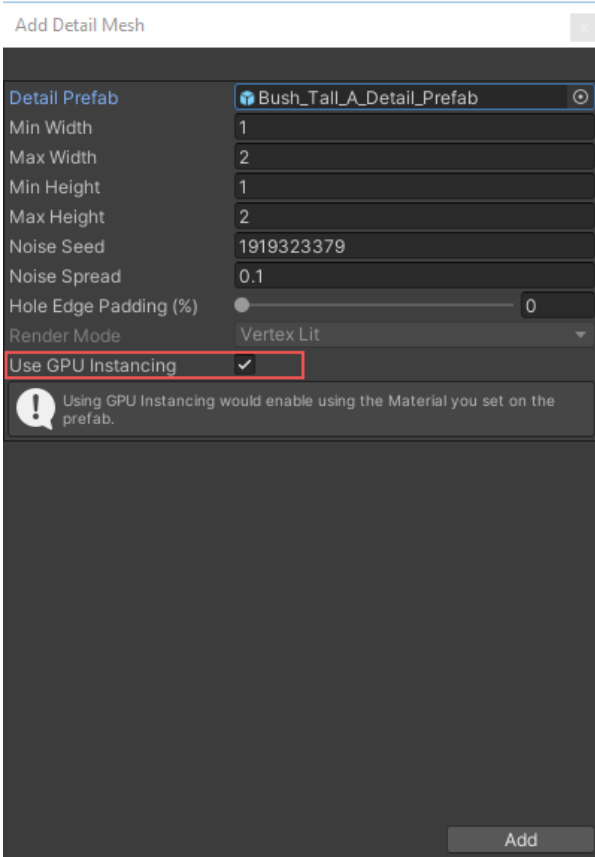

For example, you can constrain the brush painting area by adding a Slope Filter to only paint grassy layers onto the side surface of the Terrain. Then use a Concavity filter to constrain the soil layer to the curvatures. You can isolate one filter by disabling other filters or combine them when needed.

3. Paint Terrain using Details

GPU instancing on the Terrain Details (grass and vegetation) is added in Unity's 2021.2. With this new feature you can use a regular mesh prefab for Terrain Details. It also means you can then use Shader Graph to author material shaders for Details regardless which Render Pipeline you choose. Vegetation prefabs in this Sample Pack demonstrate what you can achieve from the instancing mode and Shader Graph materials.
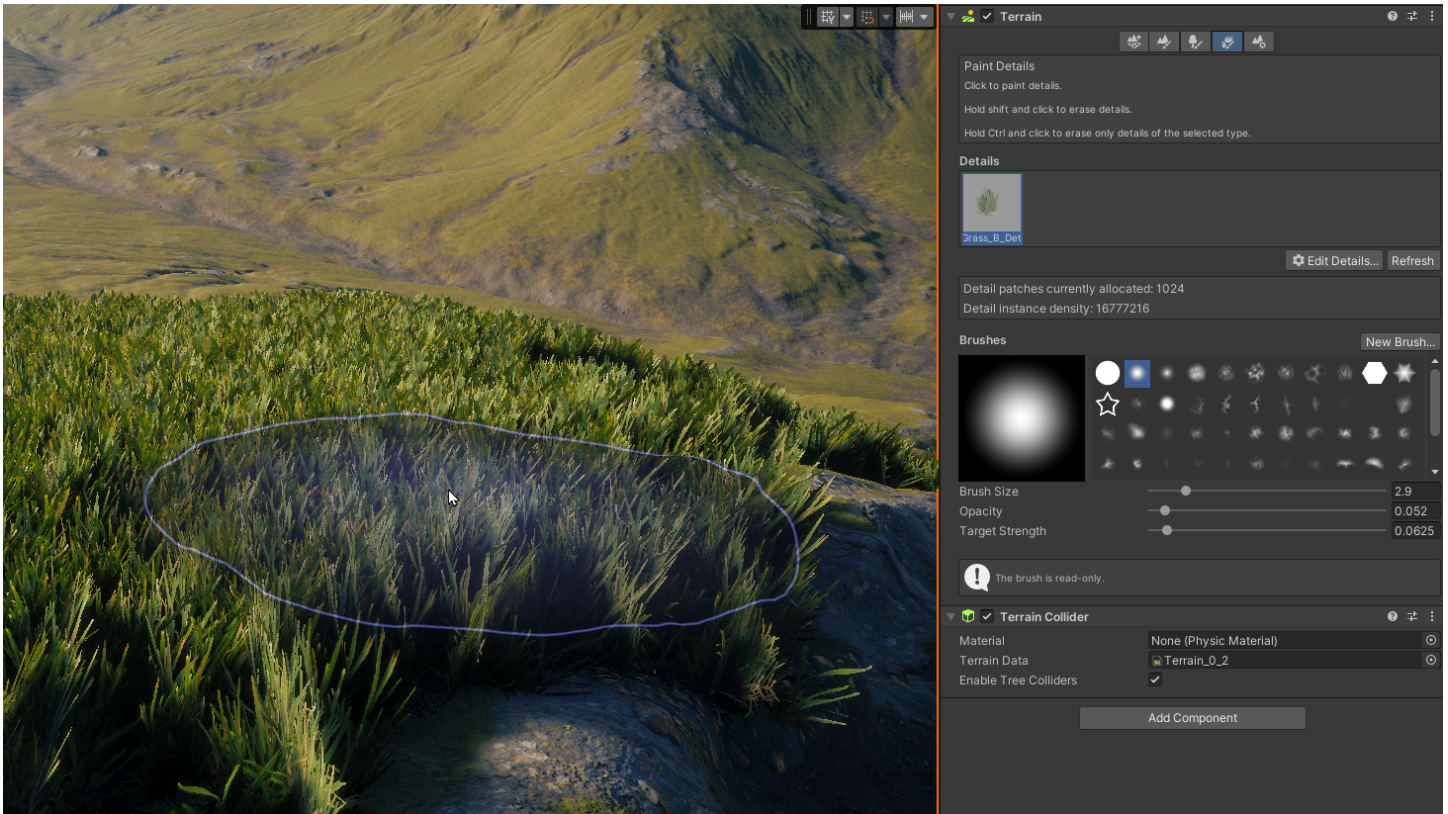
First, select the [Paint Details](#) brush in the Terrain Toolbar, and open up the Edit Details menu and select Add Detail Mesh. In the popup window, select one Detail Prefab and set desired size and make sure the Use GPU Instancing option is enabled.
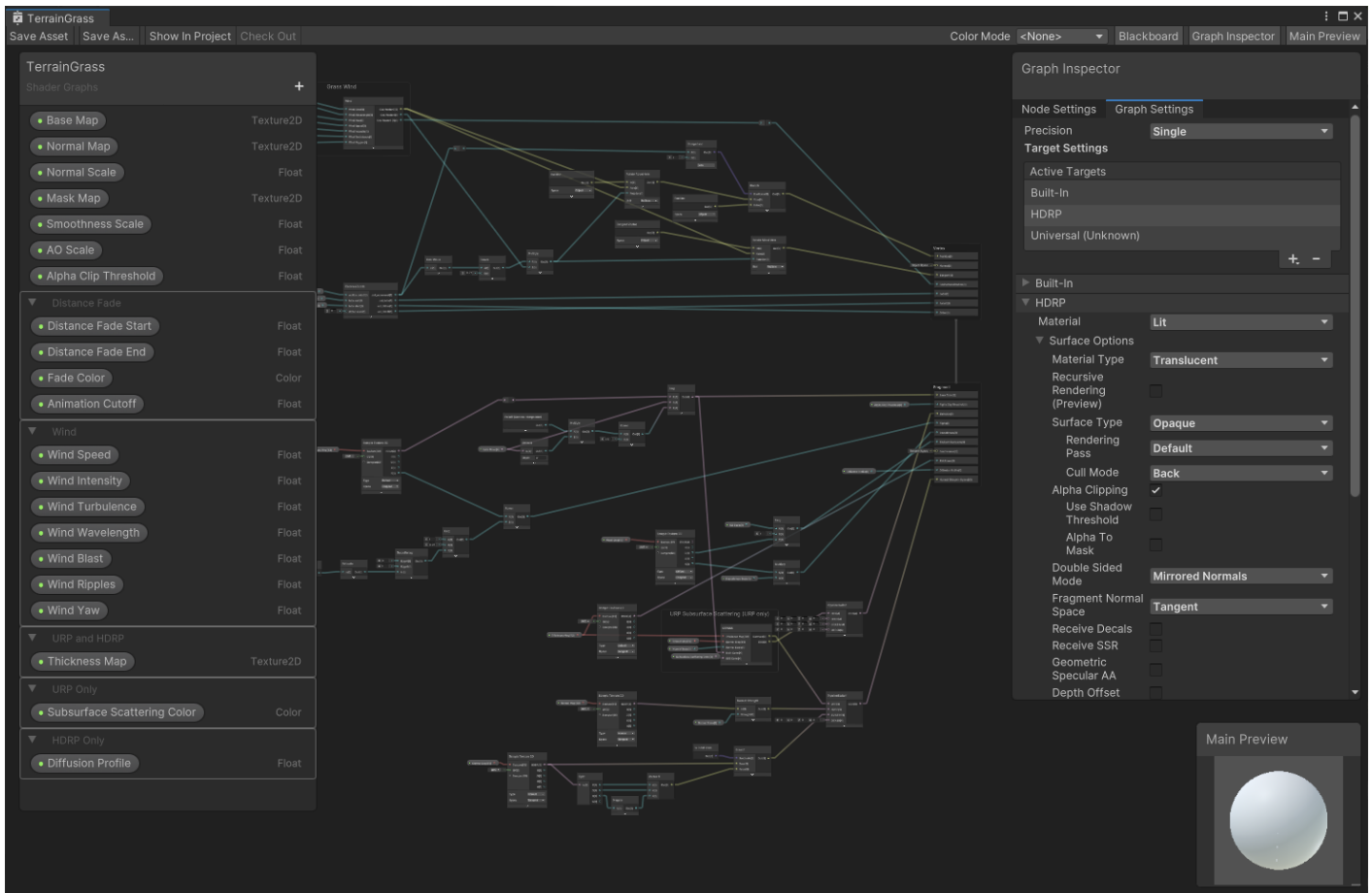

Next you can start painting this detail onto the Terrain.

You may consider setting the Brush Size and Opacity low to avoid generating too many instances that will cause performance problems. One trick here is to also set a low Target Strength to constrain the grass density from overdraw.

So next, let's take a closer look at the shader used on the grass.

In this sample pack, we are showing you an example of a multi-target [Shader Graph](#). Because of the addition of the built-in target support coming to Shader Graph in 2021.2, you will be able to create a render pipeline agnostic shader that works for Built-in, URP and HDRP all together. Not to mention that you are able to install the Shader Graph package in any built-in project directly and start building your shaders in there!
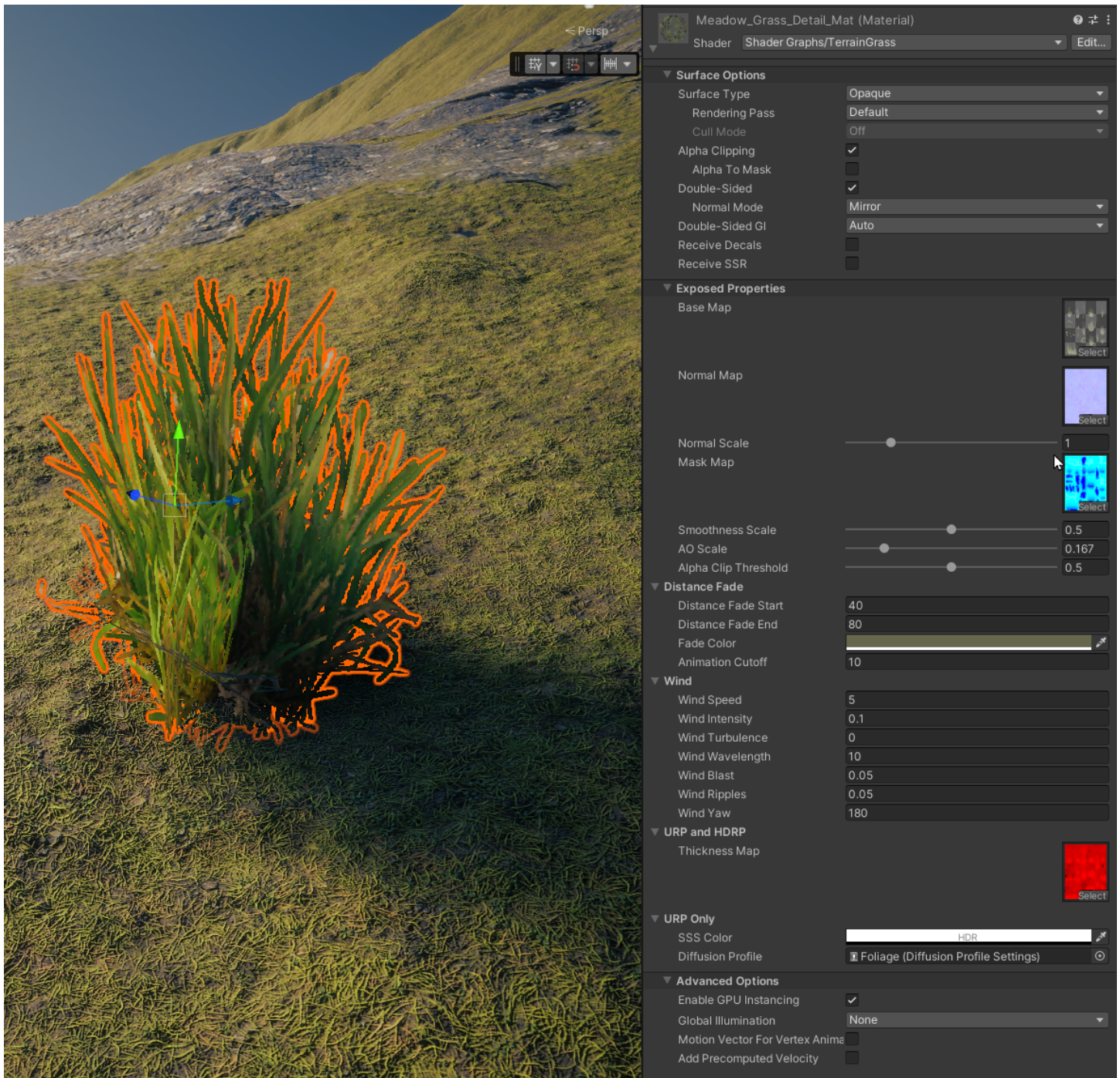
If using the Meadow_Grass_A_Detail_Prefab as an example to look at what controls available to tweak here, you will find the texture samples to plug in the BaseColor texture, Normal texture, Mask texture and a Thickness texture if you would like to enable Subsurface Scattering in URP or HDRP.

There's a Distance Fade group with controls you can set a start and end fade distance in units to fade grass into a solid color for better blending far from the camera. And a control to stop doing the wind animation.

Another group called Wind here contains all the controls grass wind related, all done from manipulating vertices during the Vertex stage from the Shader Graph.

It is also worth mentioning that the Subsurface Scattering is done differently in URP compared to HDRP. In URP, we are mimicking the effect of SSS by sending the calculations to the Emission output, as opposed to in HDRP we are using the Translucency Surface Type and rely on the default SSS behavior in the Lit shader.

Look for the TerrainGrass.shadergraph in the samples pack or open it directly from the Material Inspector in the Shader Graph editor if you are curious to see how the setup is done in there.

Some features we would like to demonstrate such as using very high instance count on generated Terrain details, vertex animation for the grass wind, distance fade based on camera have been built in Subgraphs, so that they can be easily reused or modified in your project.

To conclude, I hope this sample pack is useful to speed up your Terrain project. We would also love to hear what you think. Simply report issues, leave your comment in the Asset Store or join us in Unity's World Building forum.