Documentation v.1.0

Introduction

Thank you for purchasing MEGA Mountain Pack (short MMP). It offers a vast collection of mountain models with a high level of customizability. The streamlined custom inspectors with explanatory tooltips will keep the learning curve to a minimum.

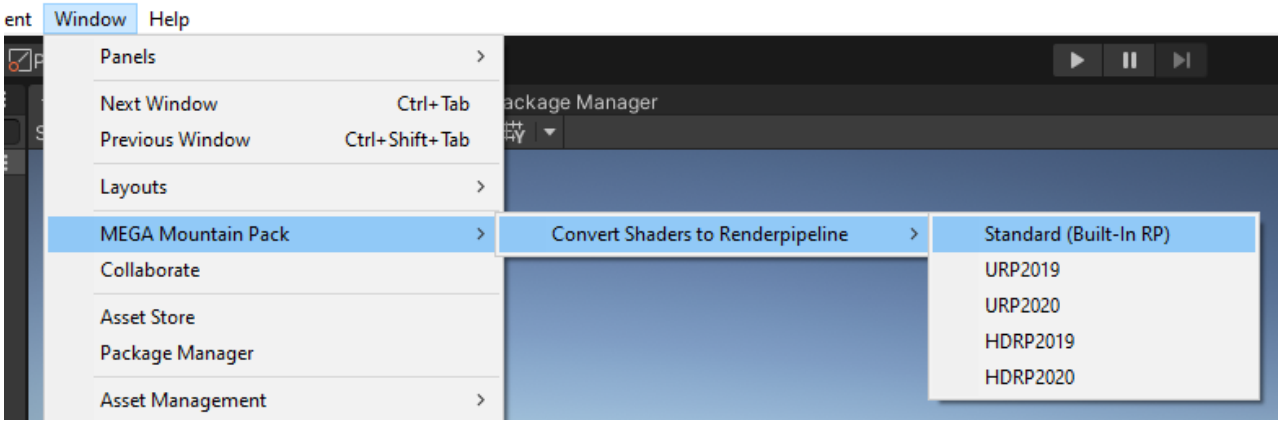
Package contents:

1. Mountain models

Included are 50 mountain models with 8 LODs each. They are in 5 mountain categories: Crumbled, Plateau, Pyramidal, Smooth, Stepped
Each of these categories hold 10 models which are using the same texture atlases.

2. Render pipeline selector

To ensure compatibility with Unity's render pipelines (Standard, URP, HDRP) a little helper tool is included that converts the included shaders to match the render pipeline requirements.



After importing the asset please go to:
Window/MEGA Mountain Pack/Convert Shaders to Render Pipeline/… and select the one you are using. The default is Standard (Built-In RP).

3. Materials/Shaders

There are 6 shaders included:

- **Complete** This shader features full control
- **Complete Detail** Same as above but adds a detail layer
- **Colormap** This is the most simple shader
- **Colormap Detail** Same as above but adds a detail layer
- **Colormap Snow** This adds a dynamic snow layer for changing seasons
- **Colormap Detail Snow** Same as above but adds a detail layer

4. Prefabs

Under MEGA Mountain Pack/Prefabs you can find 50 prefabs that you can use as they are or as a template for your adjustments (e.g. you may not need all 8 LODs so you can create prefab variations to perfectly fit your needs).

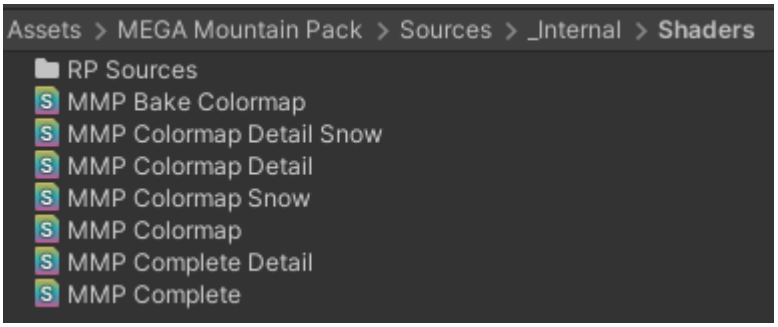
5. Colormap Baker (Scene)

This scene holds the tool that is used to create the colormaps which are required for the colormap shaders/materials. There is also a folder to store presets and a folder to hold your colormap creations.

6. Demo Scenes

You can choose if you want to import the demo scene folder or not. The demo scenes are just a way to take a look at what you purchased and get familiar with the pack. If you have done so and are importing the asset to a production project I recommend omitting importing the demo folder to not clutter your project.

Materials and Shaders



Note: The RP Sources folder should not be touched by you as it is used by the render pipeline selection tool. Please don't rename or move any of the files in the "Shaders" folder (you may move the whole MEGA Mountain Pack in your project though as the tool just uses relative paths).

The MMP Bake Colormap shader is used internally and is hidden in the material inspector.
The rest of the shaders you can use freely to create materials.

MMP/Complete Detail Shader

This is the most complex shader in this pack. It gives you a lot of control. All the material properties have tooltips so I wont go into detail here. Instead I will highlight some things that don't fit into tooltips.

Copy Values from: All materials of MMP have this option. It allows you to copy settings from other materials (without changing the textures).

Slope Range Sliders: With these sliders you can adjust at which steepness a layer will be visible. It defines a minimum and maximum of steepness, all the way to the left means 90° slopes and all the way to the right means completely flat slopes. The distance between the slider handles defines the smoothness of the transition.

Height Range Fields: With these float fields you can adjust at which height a layer will be shown. The left field defines at which height the layer starts and the right field defines at which height the layer will be fully shown.

Height Modulation Fields: This acts as a texture based offset to the height ranges. Basically it takes the mountain shape into account and offset the height up or down.

Note - Layers are drawn on top of each other: Rock is the base, the layers dirt, grass, snow are drawn on top of each other. Consider that when you think a slider is not changing anything visually!

Detail Settings: These settings are only available in materials that use shaders that are marked with the word “Detail” in the name. The purpose is to add some detail to give the impression of a higher texture resolution.

Textures: The “Complete” shaders use more textures than the “Colormap” shaders. The Splat, Rock, Dirt, Grass, Sediment textures are replaced by a colormap texture in the “Colormap” shaders.

MMP/Other Shaders

The Inspector of the other shaders are very similar with the only difference that some elements are omitted. The most important thing to consider is that the shaders that are named “Colormap” must use a colormap texture that is created with the colormap baker tool and that shaders that are named “Complete” use one of the included splat textures and the layer textures for rock, dirt, grass, sediment.

Workflow Considerations

Depending on your use case you might want to create your own prefabs that fit your needs. Here is a list of things for you to consider.

Automatic LODs: While automatic LODs are fine, they come with some overhead and can prevent efficient combining/batching. It might be beneficial to use only the LODs that are required for your view distances. This would allow you to use mesh combine assets to maximize performance.

Static/Non-Static: You probably want your prefabs to be set to static. While this pack allows you to “move mountains” it probably is not required to do that in runtime, setting the models to static can improve performance. If you want to bake lightmaps it might be a good idea to set the models to Lightmap-Static and set the Scale in lightmap to 0. This allows for mountains to cast shadows in your lighmaps without taking up valuable lightmap space.

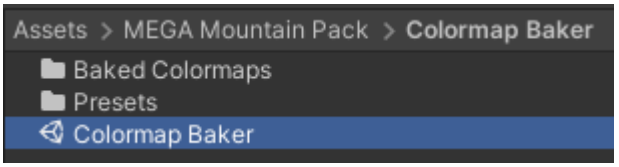
Biomes: It is recommended to stick to 1 mountain category per scene as each category uses its own material and texture atlases. That means only mountains of the same category can be combined/batched together.

Working on Mobile: Since mobiles are far more restrictive with shader complexity and memory it is recommended to use the included colormap shaders. These shaders are very simple and utilize very few textures. On desktop you might consider this as well to get the maximum performance possible. The included colormap baker tool allows you to create colormaps by rendering the settings of the complex shader into colormaps. More on this in the next section.

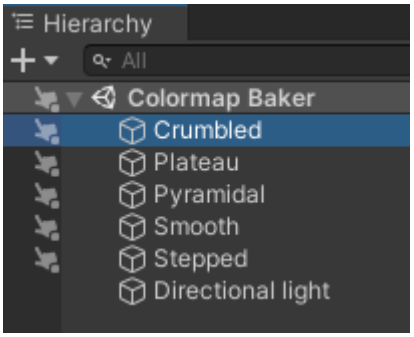
Colormap Backer

A simple but powerful concept. Take the results of your complex material and bake it into a colormap in order to use it with a greatly simplified shader. Of course, as with most performance optimizations this comes with some visual degradation, however, depending on your view distances the difference is probably not visible.

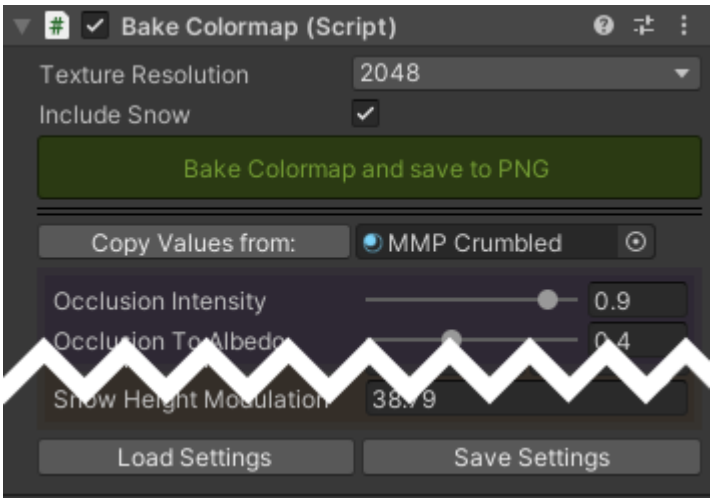
To use the tool open the Colormap Baker scene:



Within the scene you find the following hierarchy:



If you select one of these objects you will see the inspector that allows you to modify the look and bake your colormap:



(The material settings part is cropped in this screenshot)

- **Texture Resolution:** Allows you to choose the resolution of your bake
- **Include Snow:** If you intend to use the Colormap Snow shader or if you don't want snow uncheck this.
- **Copy Values from:** This allows you to copy settings from any MMP material.
- **Load/Save Settings:** This allows you to backup/retrieve settings.

The rest of the inspector looks like a material that is using the "MMP/Complete" shader and is used to create the look that you are after. Refer to the "Materials and Shaders" section.

If you click on "Bake Colormap and save to PNG" you will be prompted with a save file dialog to choose a filename and a save location.

Support Requests

If you run into any issues using this pack please send an e-mail to becoming.at@gmail.com describing your issue.