

TERRAIN MIXER MANUAL

> THE MOST RECENT UPDATES AND OTHER IMPORTANT INFORMATION	3
> TERRAIN MIXER BASICS	3
> DOWNLOAD THE LATEST 'TERRAIN MIXER' VERSION (click here)	3
> ABOUT (see examples)	4
> CYCLES NOW, EEVEE LATER	4
> GRAPHIC CARDS	4
> AFTER YOU DOWNLOAD (watch the video)	4
> HOW TO UPDATE (watch the video)	6
> WHEN YOU OPEN THE FILE FOR THE FIRST TIME	7
> BEFORE YOU START BUILDING TERRAINS (watch the video)	8
> WORKING WITH 'PROPERTIES' MENU (watch the video)	8
> WORKING INSIDE THE VIEWPORT (watch the video) - abandoned	12
> WORKING WITH NODES AND NODE GROUPS (watch the video)	14
TERRAIN	14
Mixer (now available in Properties menu)	15
Grand Scaler	15
Grand Shifter	15
Scaler (now available in Properties menu)	15
Shifter (now available in Properties menu)	15
Rotator (now available in Properties menu)	15
Skewer (watch the video)	16
Cascader (watch the video)	16
Canyonizer (watch the video)	17
Image Mask (watch the video)	17
Elipse Mask (watch the video)	18
Waves	19
Texturing	20
Procedural Texturing (watch the video)	21
Fastshade	22
FAKE SKY (watch the video)	23
PLAIN TERRAIN	23
BLENDING	25

> FAST TERRAIN GENERATION (by animating sliders, watch the video)	25
> KNOWN ISSUES	26
Black screen	26
Flat Plane	26
Optix Issue (Blender 2.83 and above, works in 2.92 and above)	27
Banding (stripes/lines effect on terrain's surface)	28
Border Walls (stretched edges)	28
> BAKING	29
Heightmaps (watch the video)	29
Diffuse maps	31
> WATCH ALL THE VIDEOS	32

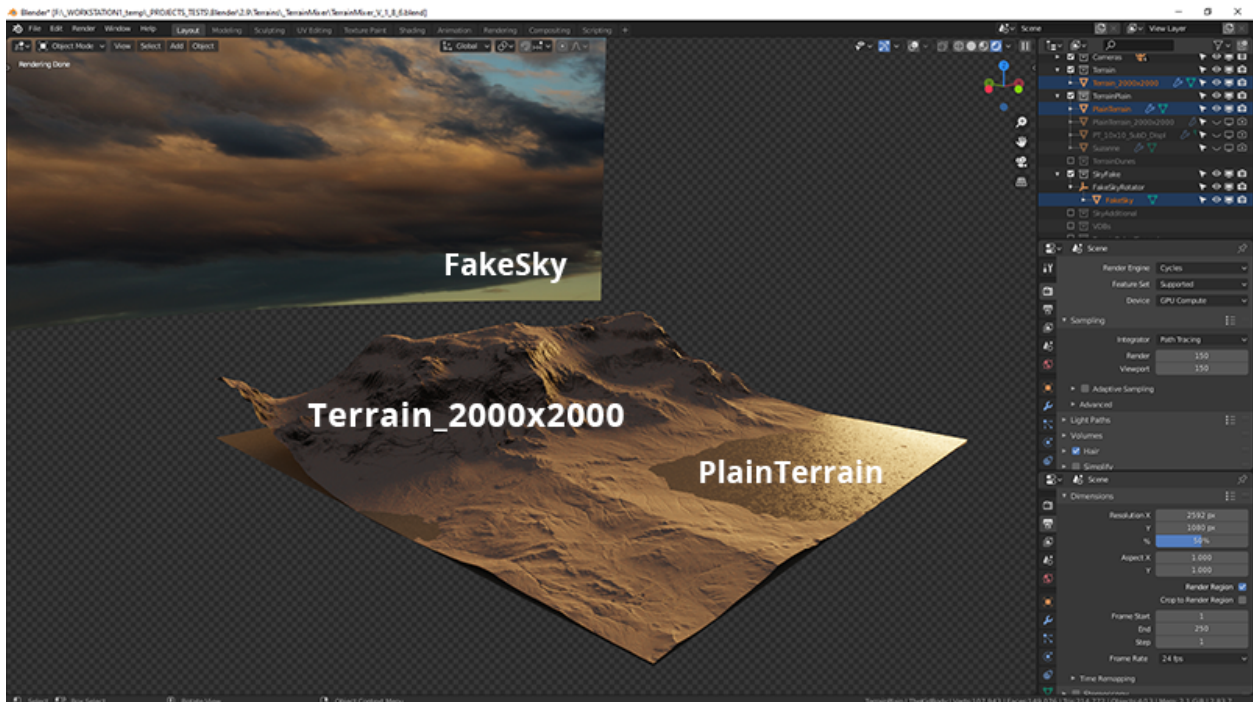
> THE MOST RECENT UPDATES AND OTHER IMPORTANT INFORMATION

- 1.9.7 - Procedural Texturing node group has been upgraded with new features
- 1.9.7 - an additional workspace has been added to allow easier procedural texturing
- 1.9.6 - two additional workspaces have been added
- 1.9.6 - Waves node group has been added
- 1.9.5 - new features have been added to Scatter Master, Ellipse Mask, and Image Mask
- 1.9.4 - Scatter Master has been added to the Properties menu
- 1.9.4 - if you're working in a Blender version prior to 2.92 you might get a black screen, so go to 'World' node editor and disconnect the 'Sky Texture' node
- 1.9.4 - Ellipse Mask has been added to the Terrain Mixer node tree

> TERRAIN MIXER BASICS

Before you do anything, please watch [THIS VIDEO](#) and also [THIS VIDEO](#). Since we're updating Terrain Mixer very often, the video links might change. If they do, we'll inform all of our customers about it. All the new videos will be uploaded to our [YouTube channel](#) (subscribe if you haven't already) and to our [Discord server](#) where you can also ask for technical support.

> DOWNLOAD THE LATEST 'TERRAIN MIXER' VERSION (click [here](#))



These are Terrain Mixer's main scene elements

..

> *ABOUT* ([see examples](#))

The Terrain Mixer is a very fast terrain generator. It is made of Cycles materials, 3D objects, and textures (image inputs). Terrain Mixer materials combine dozens of nodes and node groups. Although it is very easy to use, there isn't really 'the right way' of using it. You have to experiment and find your workflow. We suggest that you start by simply moving sliders left and right. You can also enter the node groups by selecting any of them and pressing TAB. The package already contains a lot of heightmaps and colour maps, but of course, you can use your own heightmaps and colour maps.

..

> *CYCLES NOW, EEVEE LATER*

At the moment Terrain Mixer works only in Cycles. We plan to make it compatible with Eevee, but that depends on the future development of the Blender. This doesn't mean that you can't use Eevee to render your terrains. When you're happy with the result simply bake the heightmap and apply it through the Displacement modifier. It is a two minute process.

..

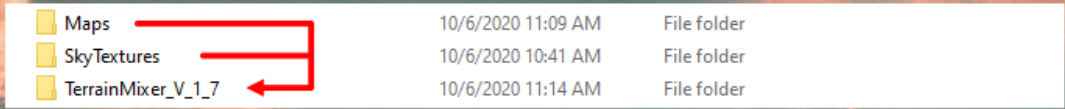
> *GRAPHIC CARDS*

NVIDIA is what we recommend at the moment. We are doing all of our terrain mixer tests with the 1080 TI (CUDA enabled, because OPTIX is 99.99% compatible) and we're very happy with the speed that it provides. If, for example, you have a 3090 built in your machine you'll be able to work super-fast in Cycles, probably without any lag.

..

> *AFTER YOU DOWNLOAD* ([watch the video](#))

After you download the Terrain Mixer, make sure to place the 'Maps' directory (additional package) inside the Terrain Mixer's current version directory (for example 'TerrainMixer_V_1_86'). Additionally, make sure that all the Image nodes are linking to the images (heightmaps and diffuse/color maps) that are placed inside the 'Maps' directory.

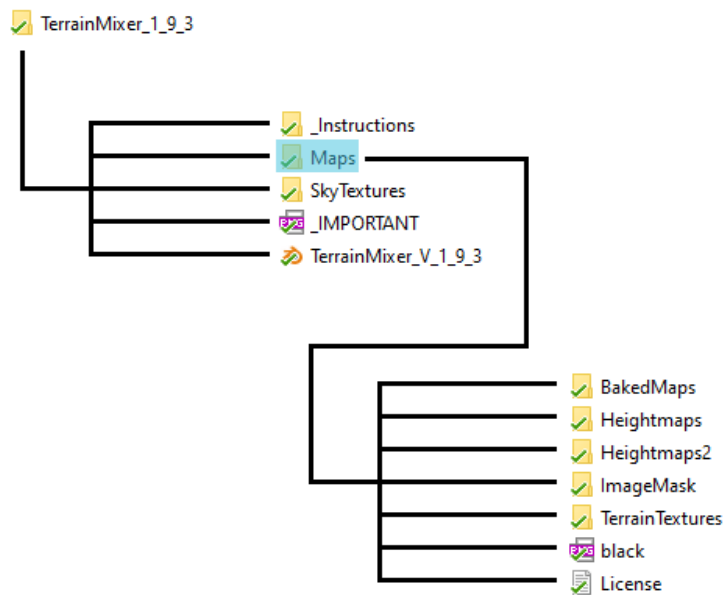


Maps	10/6/2020 11:09 AM	File folder
SkyTextures	10/6/2020 10:41 AM	File folder
TerrainMixer_V_1_7	10/6/2020 11:14 AM	File folder

**YOU MUST
DOWNLOAD
SUPPLEMENTARY
CONTENT
AND PLACE IT
INSIDE THE
MAIN FOLDER**

Terrain Mixer

FOLDER STRUCTURE



..

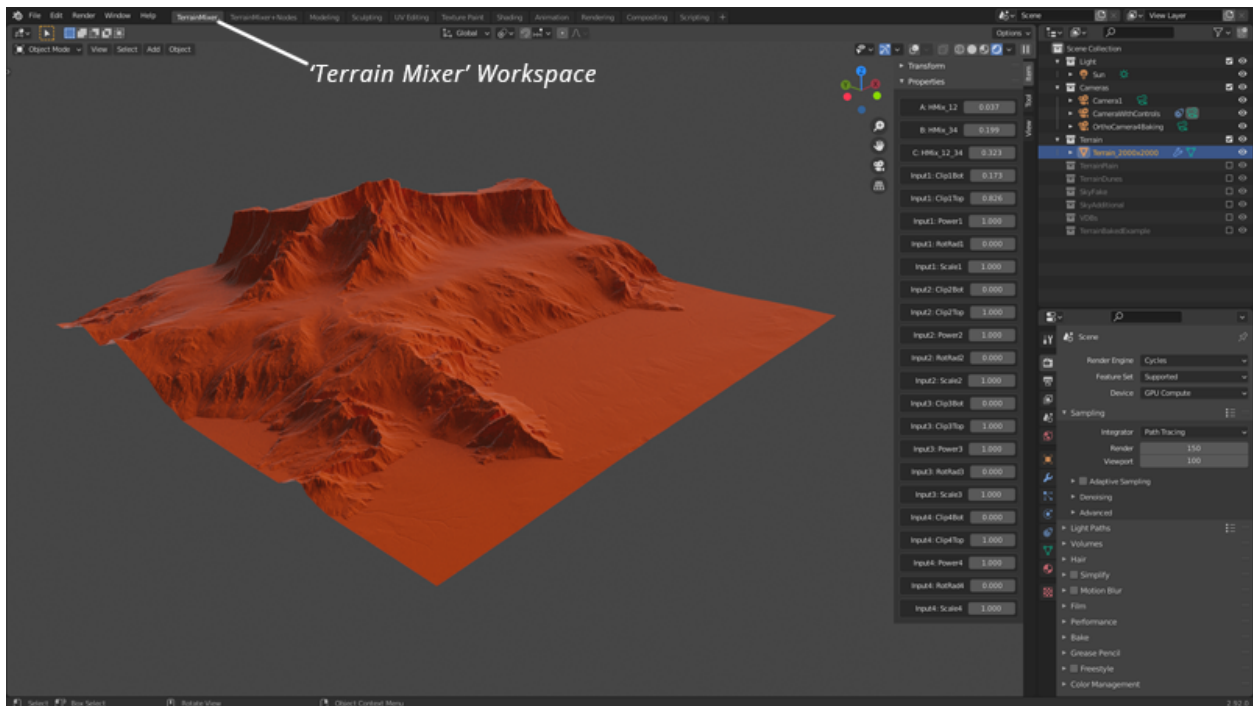
> *HOW TO UPDATE* ([watch the video](#))

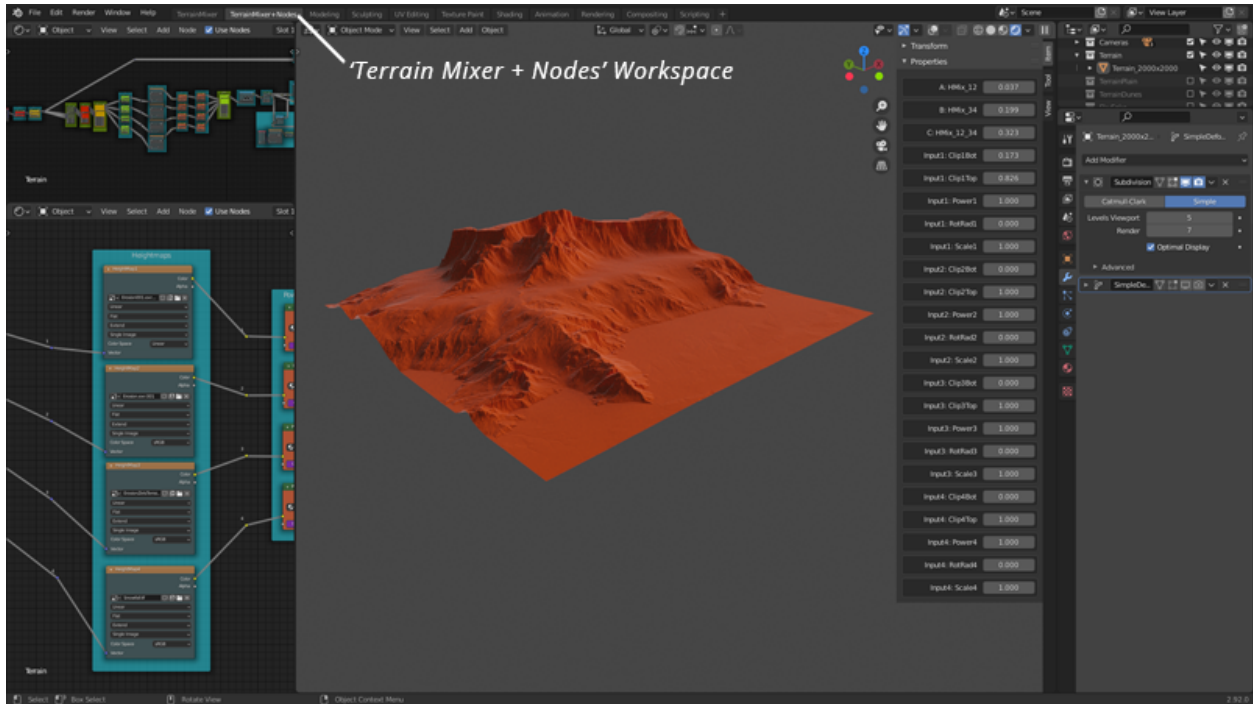
Folders with texture maps will always have an updated number at the end of their name. The number reflects the date when something was added or changed inside the folder (for example Heightmaps2_20210330.zip if the last change happened on 30th of March 2021). If the number hasn't changed, you don't need to download that folder again. Most of the time you will only need to download the main folder (for example, 'TerrainMixer_1_9_5'), copy the .blend file from inside, and paste it to the folder where you have stored the previous version. Image textures that are linked from inside the .blend should work out of the box.

..

> WHEN YOU OPEN THE FILE FOR THE FIRST TIME

The terrain object has the Subdivision modifier applied to it. If you want to work faster in the Viewport, make sure to set it to a lower Subdivision level. For example '4'. For an even faster workflow, we suggest you to use the 'Fast Shading' which you can set inside the Terrain Mixer's material node setup.





The changes introduced in versions 1.9 and 1.9.1 allow you to work with less of Blender's UI Areas
 ..

> *BEFORE YOU START BUILDING TERRAINS* ([watch the video](#))

You must enable Viewport Shading, otherwise you won't be able to preview the changes you make inside the Terrain Mixer. Also, make sure that the Cycles render is the active render engine, because, at the moment, Terrain Mixer doesn't support other render engines (Eevee, etc.). If your terrain is displayed as a flat plane, double-check that your Image source nodes are actually linked to the image files inside the 'Maps' directory.

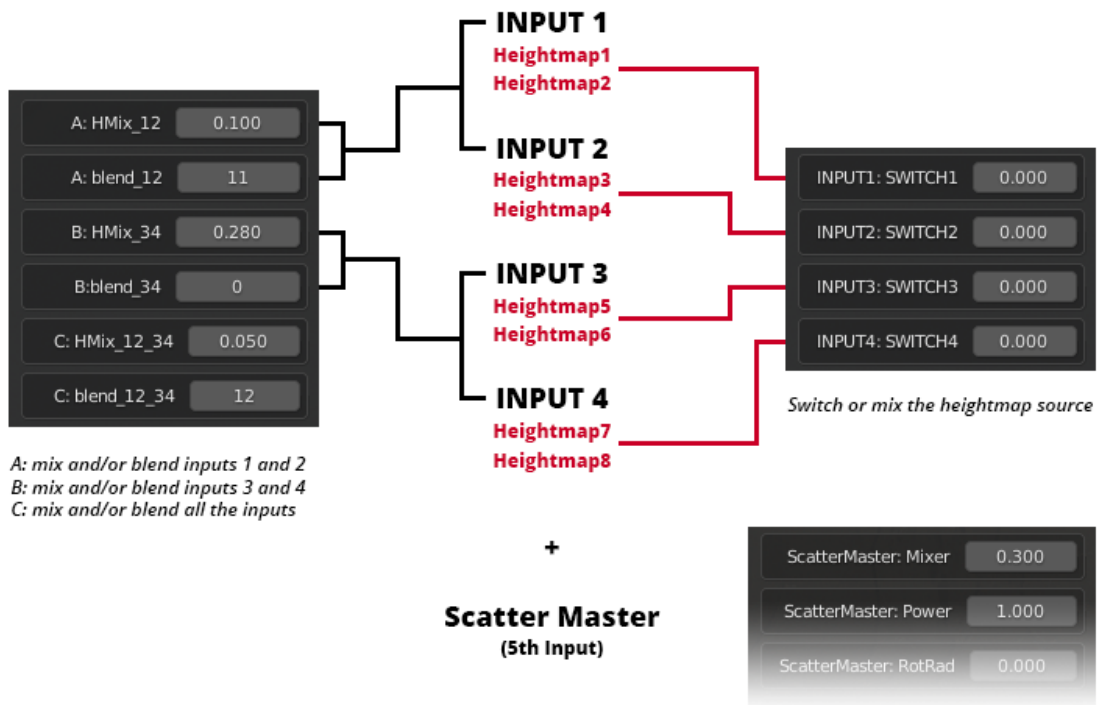
..

> *WORKING WITH 'PROPERTIES' MENU* ([watch the video](#))

'Properties' menu was first added in 'TerrainMixer_V_1_9' and it's by far the best and easiest way to start experimenting with Terrain Mixer.

Terrain Mixer

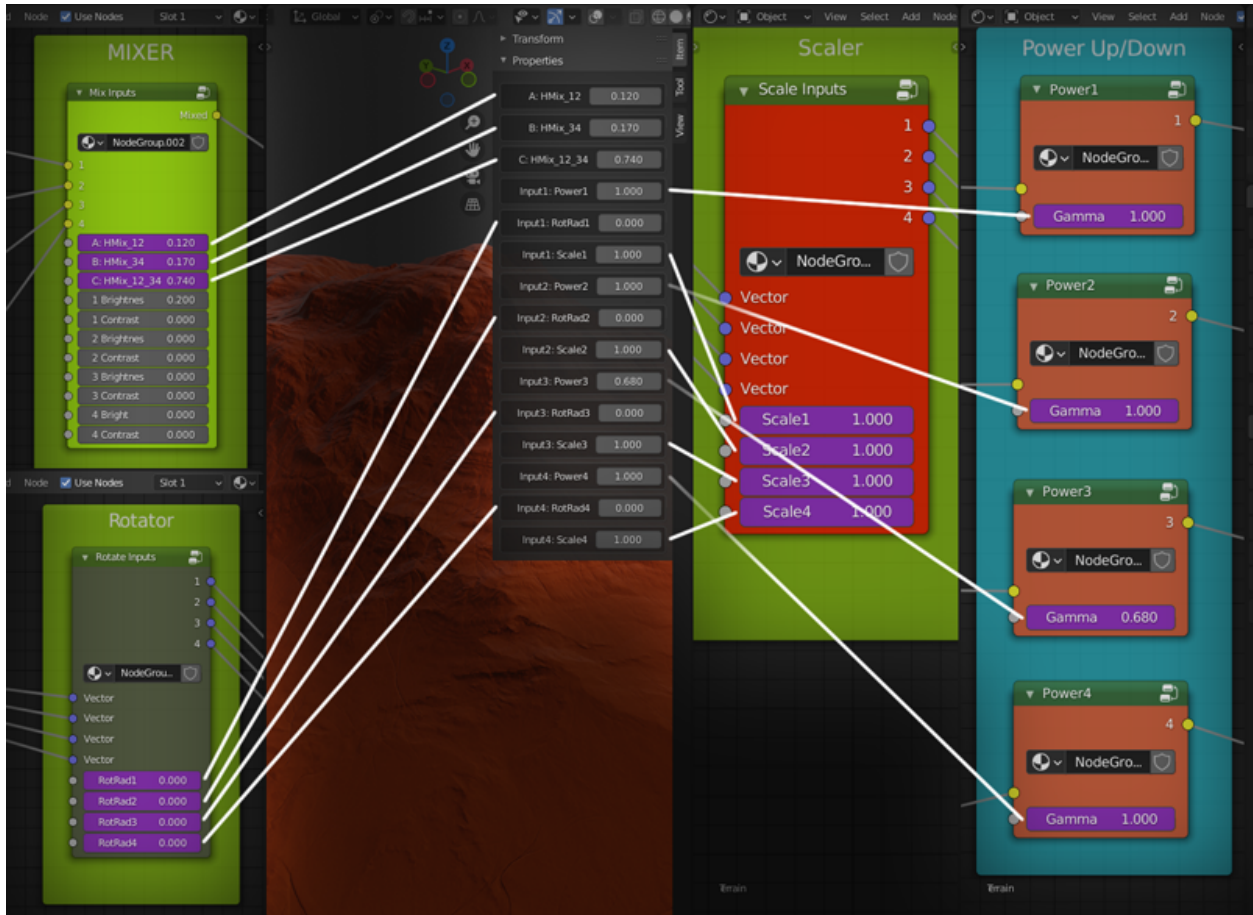
PROPERTIES MENU LOGIC



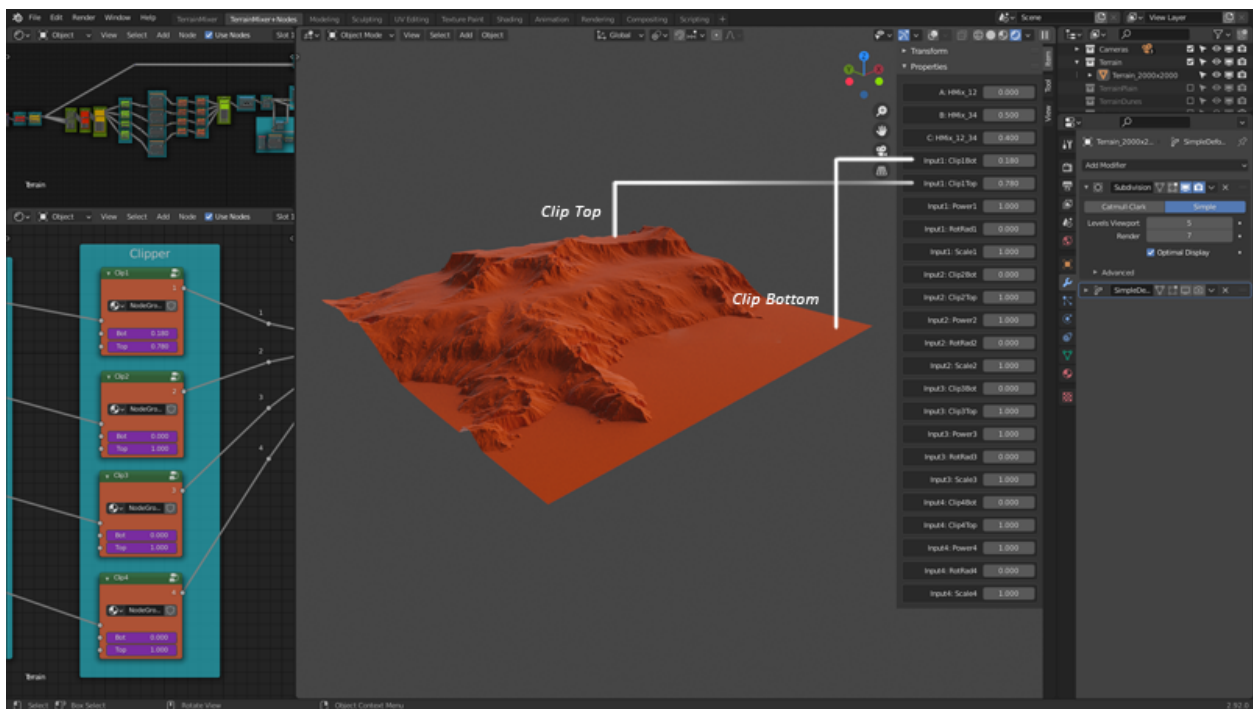
There are 8 main heightmap sources that you can combine + the additional one that is available through the Scatter Master. You can replace any of the heightmaps inside their respective node groups (look for the SWITCH or ScatterMaster node groups).

The Properties menu sliders control the values of these node groups:

- Mixer
- Scaler
- Rotator
- Clipper (added in version 1.9.1)
- Power Up/Down
- ScatterMaster (added in version 1.9.4)

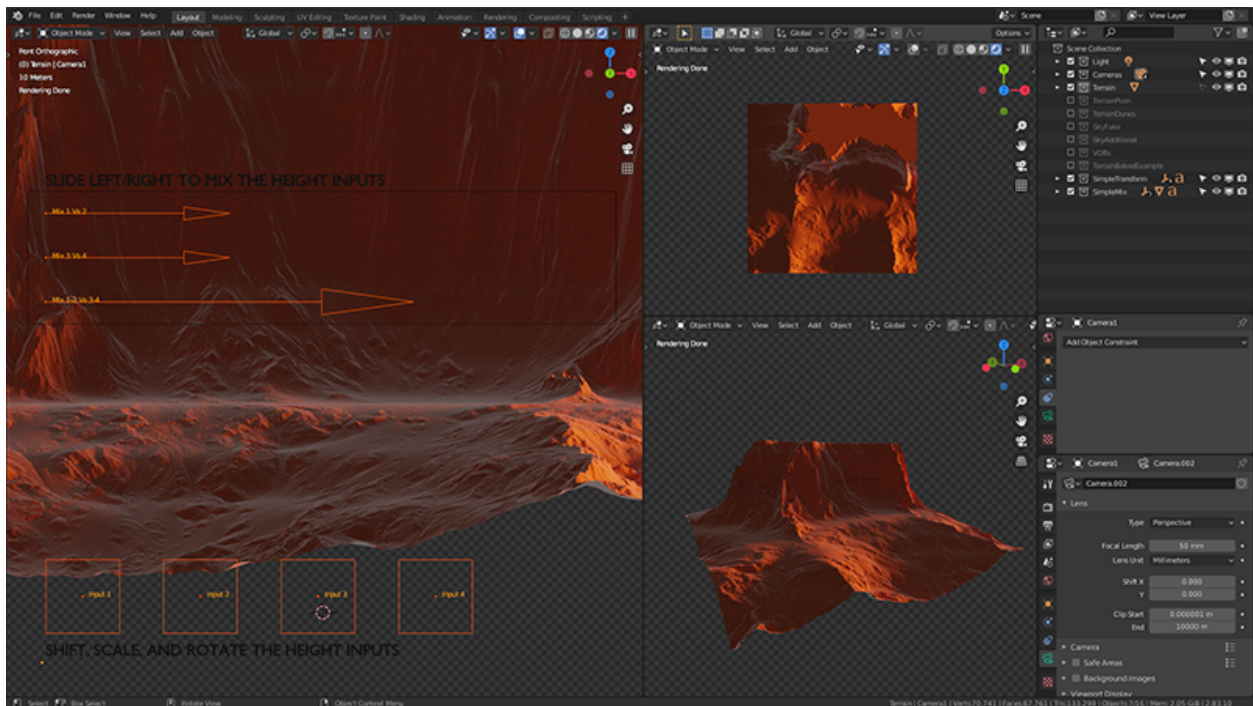


The control of the most important node groups from just one menu is now a reality (added in versions 1.9 and 1.9.1)



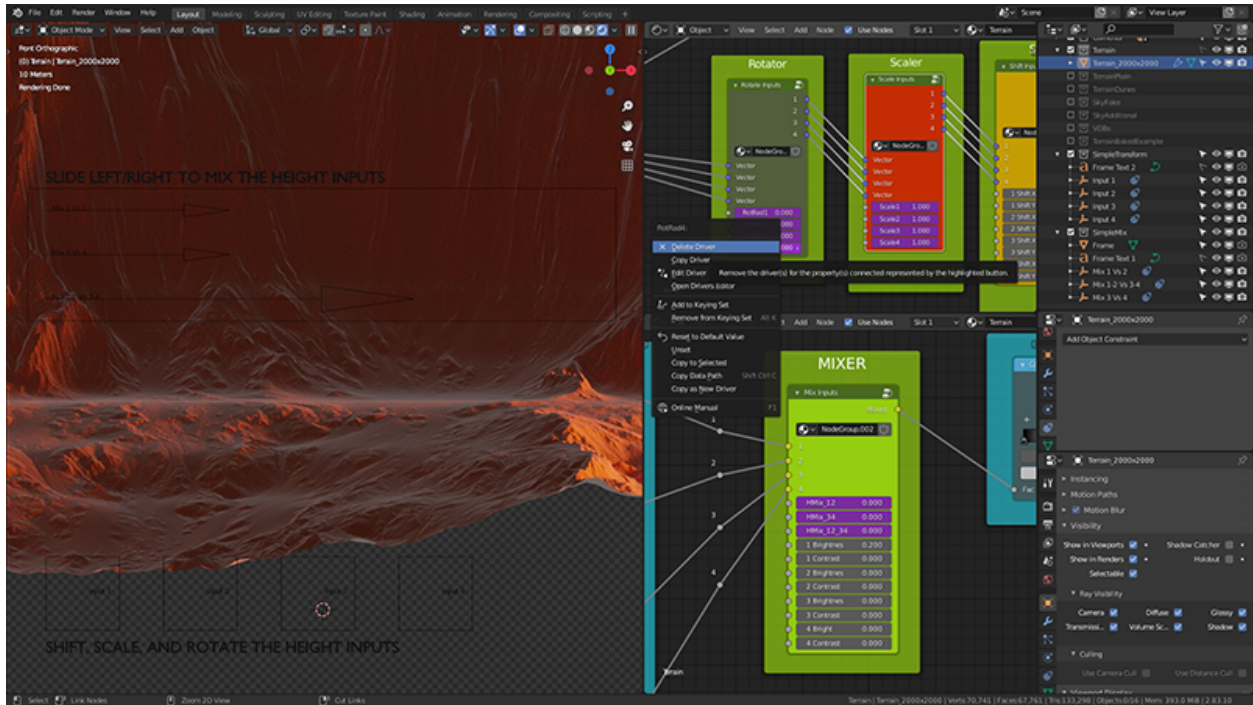
> *WORKING INSIDE THE VIEWPORT* ([watch the video](#)) - *abandoned*

First, click the 'Show Overlays' icon to see the Viewport Controls. If You are a beginner and a little bit afraid of Cycles nodes, or nodes in general, we suggest that you start by using the controls inside the viewport (*abandoned, available ONLY in 'TerrainMixer_V_1_8_7'*). They will give you some basic controls over your new terrain. There are three sliders which are used for mixing the height inputs, and four boxes which are used for the rotating, scaling, and increasing the strength of each individual input.



Try using the viewport controls before you dive into nodes/node groups (*abandoned*)

Those controls are a dependency of the nodes/node groups (sliders) linked via Blender drivers. Delete the drivers (colored purple) if you don't want to use the viewport controls, or, in other words, if you just want to work with the nodes/node groups.



Delete the drivers (colored purple) if you don't want to use the viewport controls (*abandoned*)

..

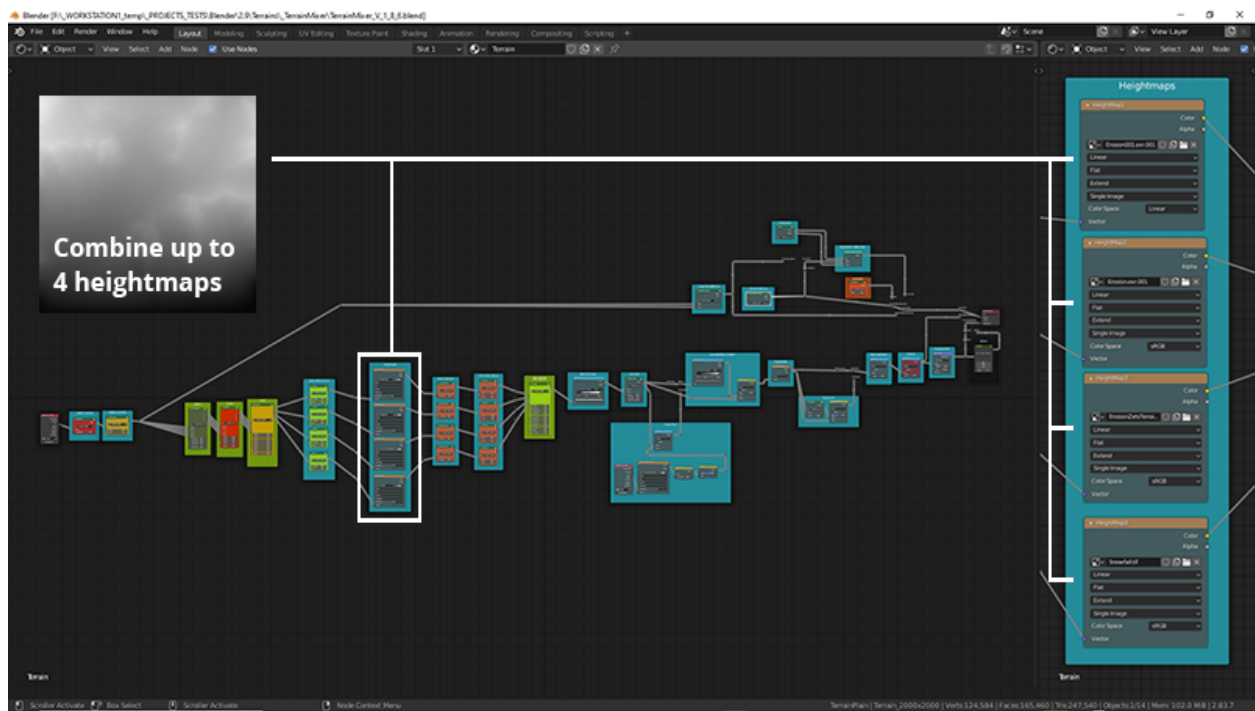
> *WORKING WITH NODES AND NODE GROUPS* ([watch the video](#))

Working with nodes and node groups is very intuitive, although it might not seem that way at first. When you start tweaking one of the Terrain Mixer's materials, your brain will easily mind-map the position of all the nodes and inputs. What also helps is adding colors, titles/notes, and frames to your nodes and node groups. The easiest way of saving your Terrain Mixer result would simply be saving the .blend file.

TERRAIN

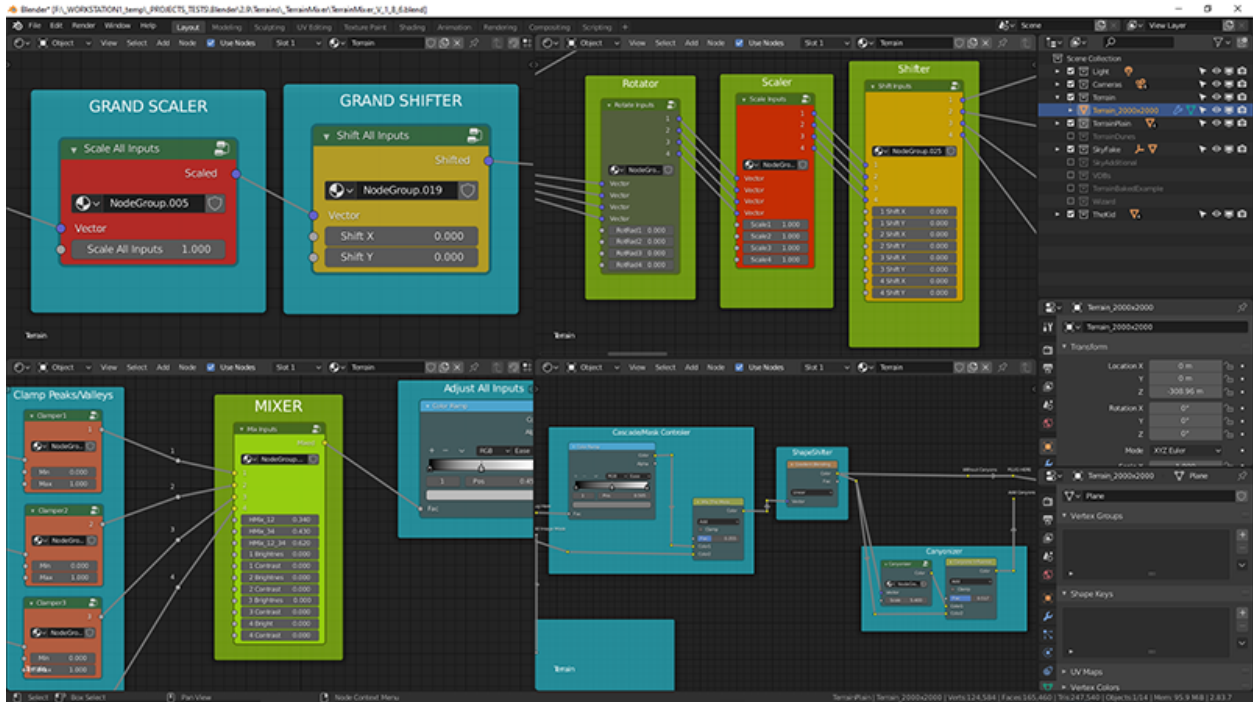
Scene object: **Terrain_2000x2000**

Material: **Terrain**



EDIT: You can now combine up to 9 heightmaps!

This image shows the node tree/structure for the scene object 'Terrain_2000x2000' (material name: Terrain)



Here you can see some of the most important 'Terrain_2000x2000' node groups (material name: Terrain)

Mixer (now available in Properties menu)

This is a really powerful node group, because it allows you to mix four different height inputs.

Grand Scaler

With this node group, you will be able to scale all of the inputs at once.

Grand Shifter

With this node group, you will be able to shift all of the inputs at once.

Scaler (now available in Properties menu)

With this node group, you will be able to scale the inputs individually.

Shifter (now available in Properties menu)

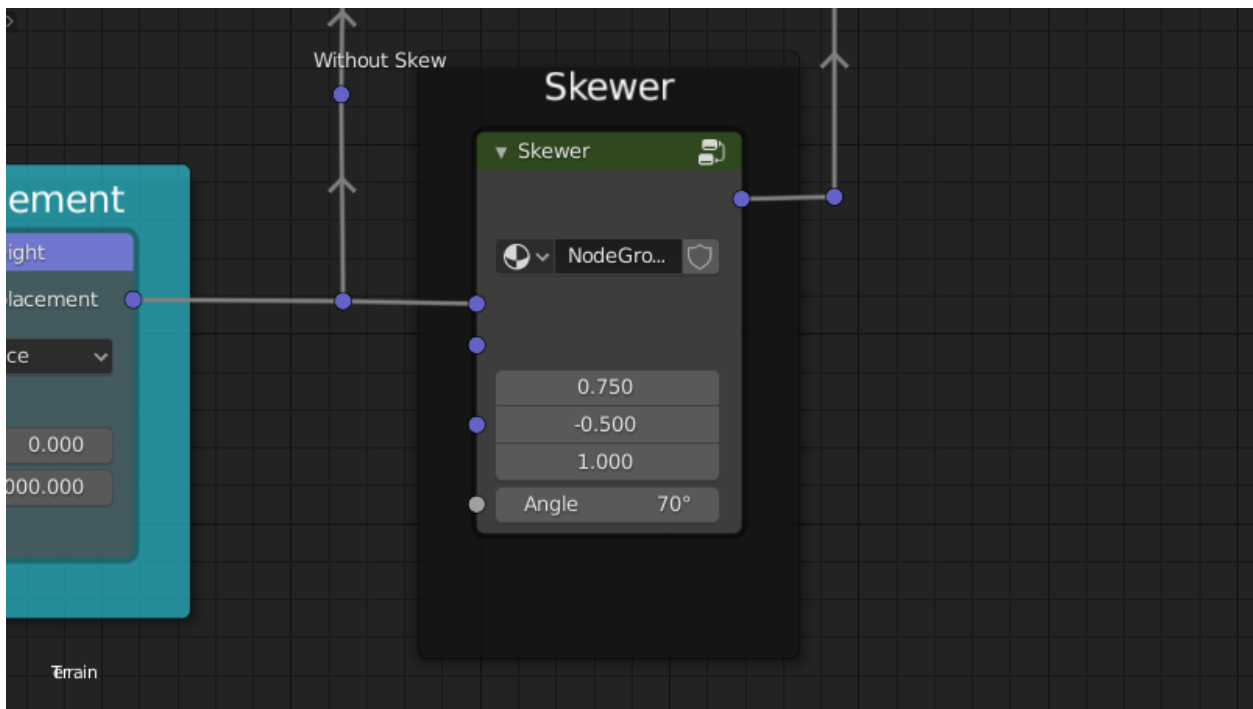
With this node group, you will be able to shift the inputs individually.

Rotator (now available in Properties menu)

With this node group, you will be able to rotate the inputs individually.

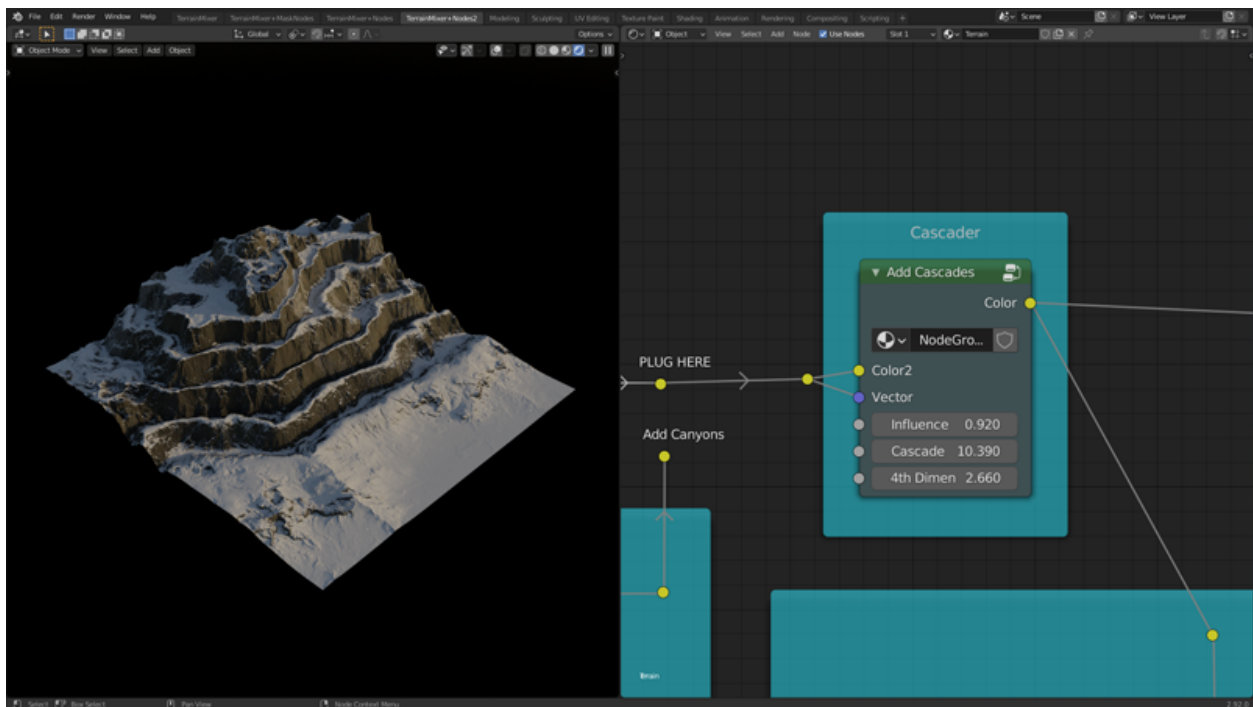
Skewer [\(watch the video\)](#)

This node group allows you to skew the terrain details (cliffs, etc.).



Cascader [\(watch the video\)](#)

Use the cascade node group to add cascades to your terrain.



Canyonizer [\(watch the video\)](#)

With these node groups you'll be able to transform your terrain into canyons.

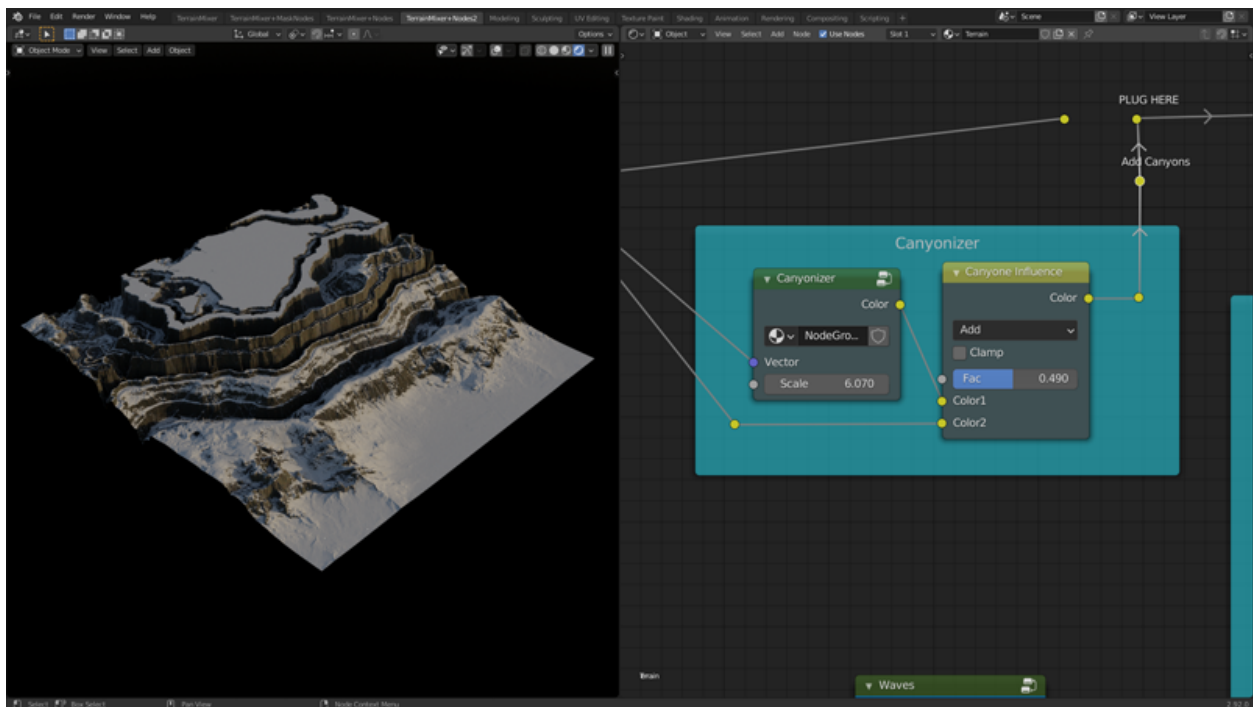


Image Mask [\(watch the video\)](#)

You can use any image for this node group, but we recommend that the quality matches those of the heightmaps that are already inside the package. 32bit EXR images give the best results.

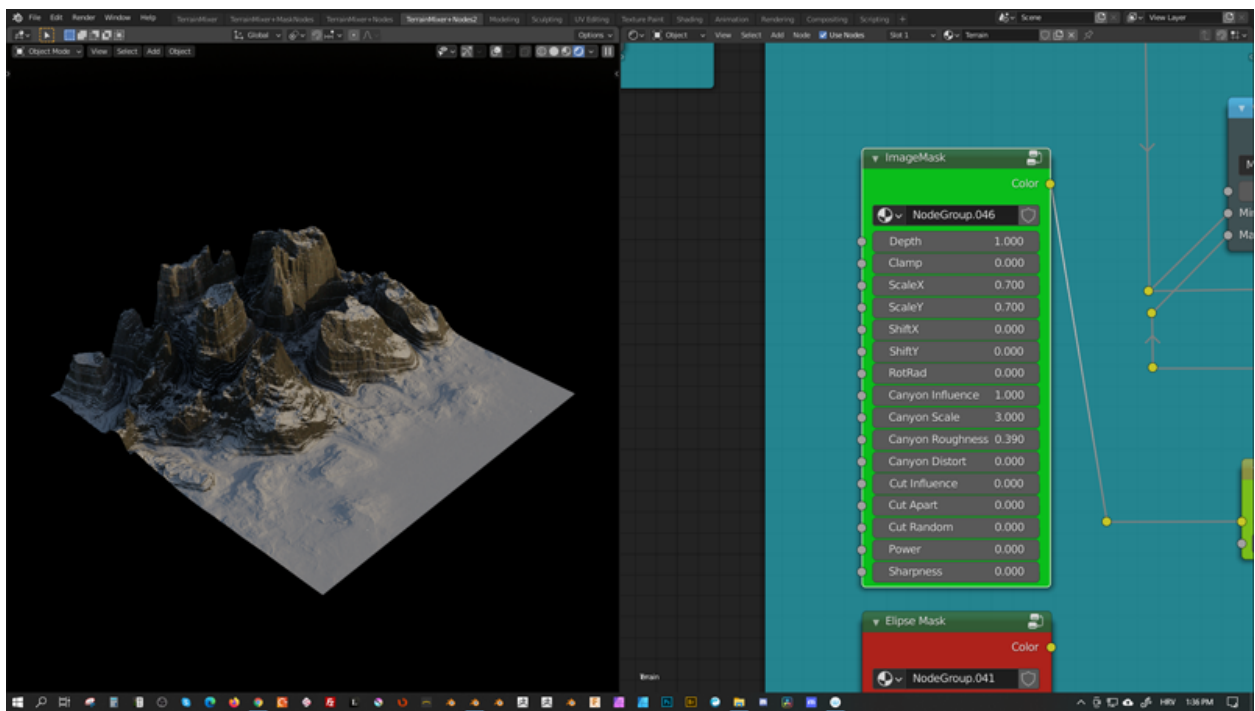
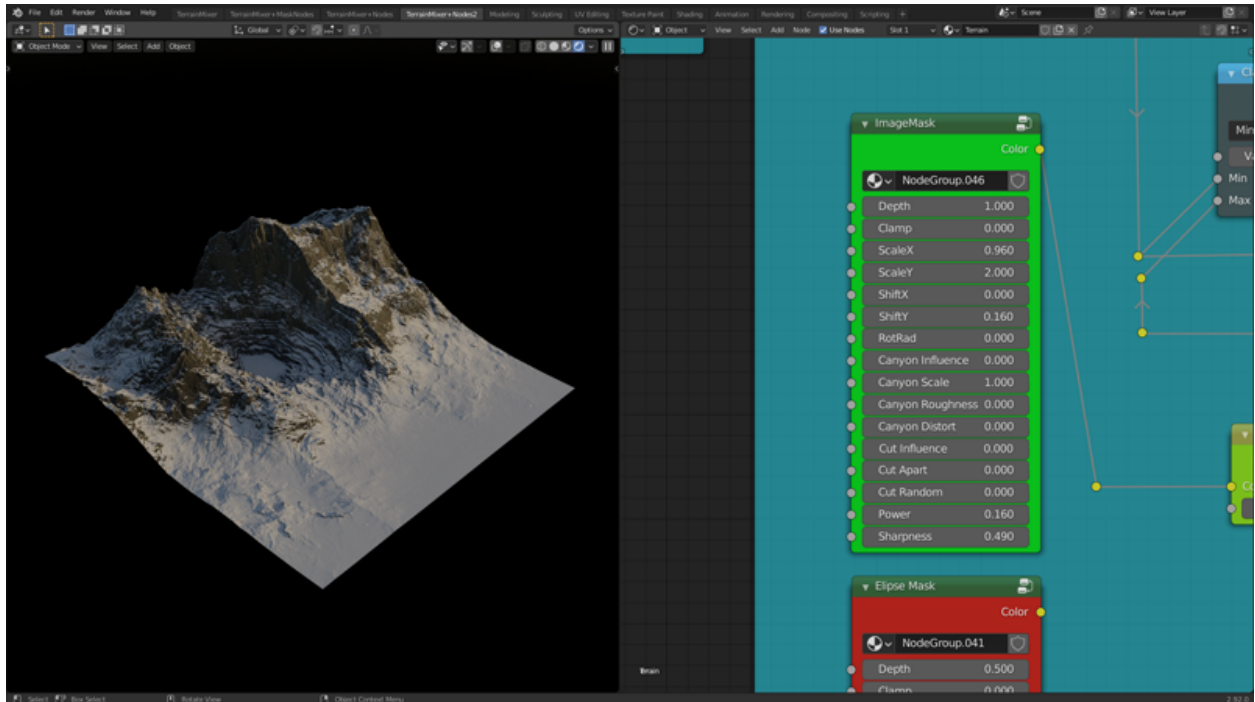
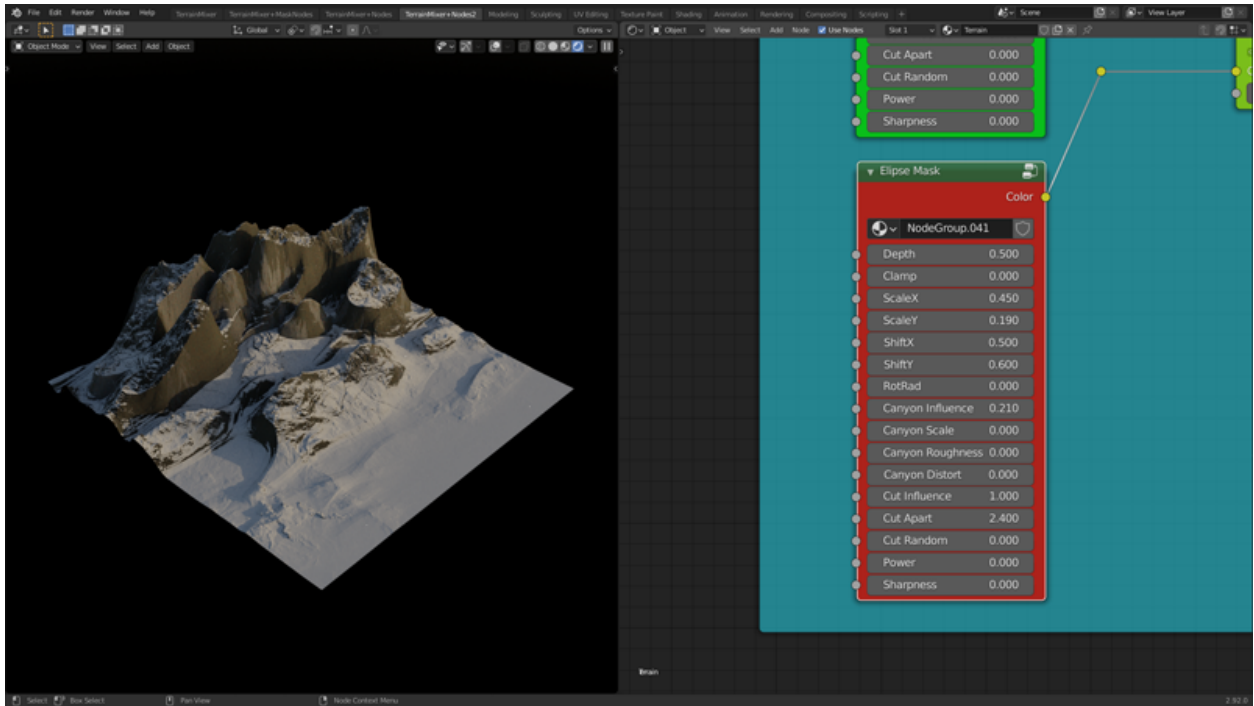
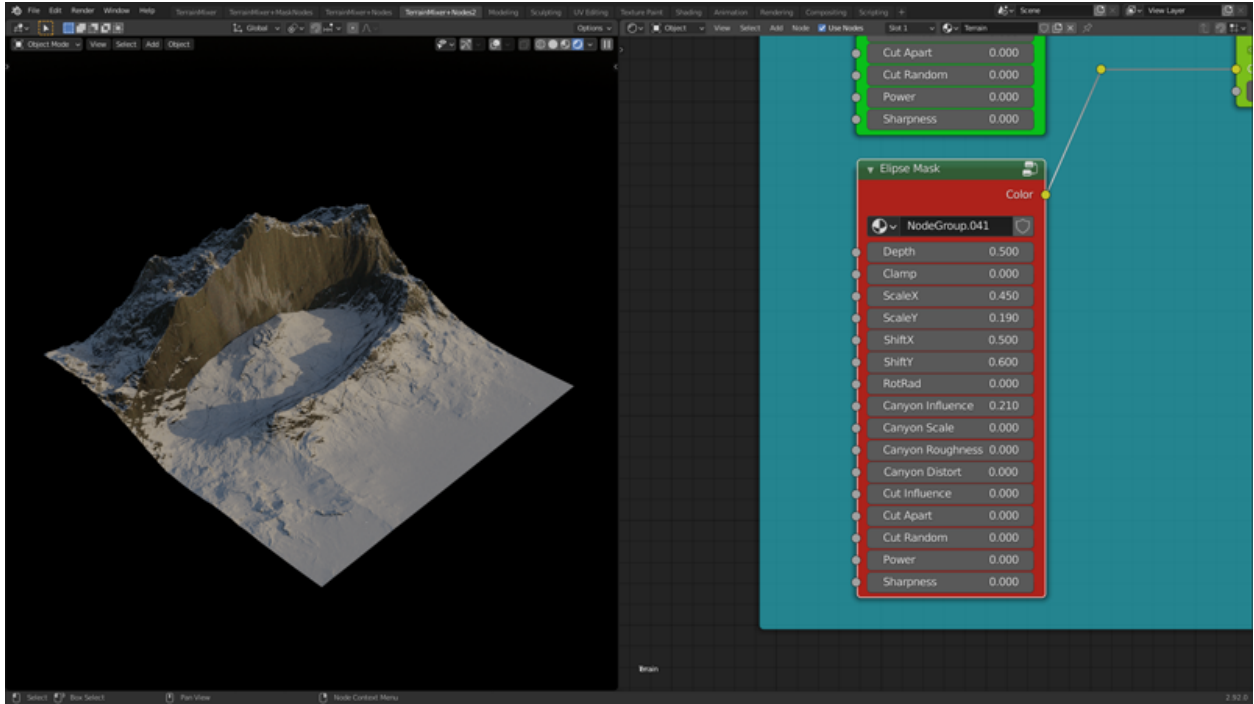


Image Mask with Canyon Influence

Elipse Mask ([watch the video](#))

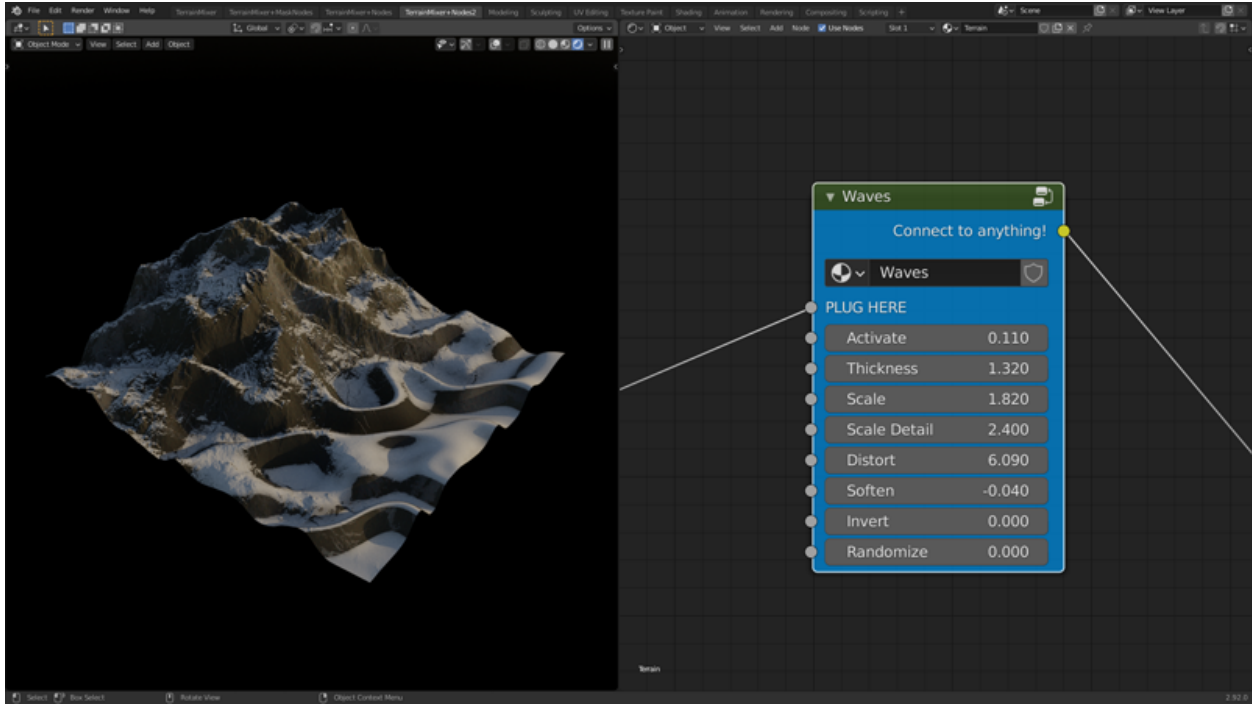
This mask is similar to Image Mask with the difference that the basic ellipse shape is made procedurally.



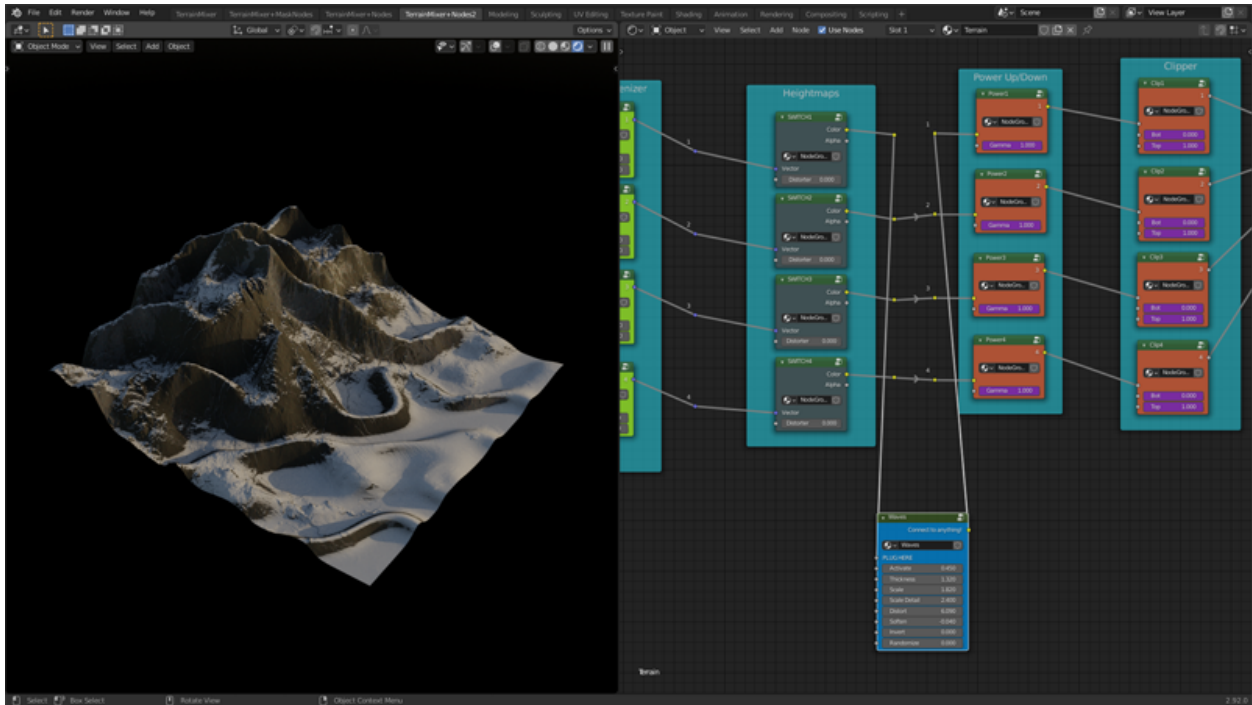
Ellipse Mask with Cut Influence

Waves

The Waves node group can be connected to almost any other group inside the node tree. You can use them for various purposes. Feel free to experiment.



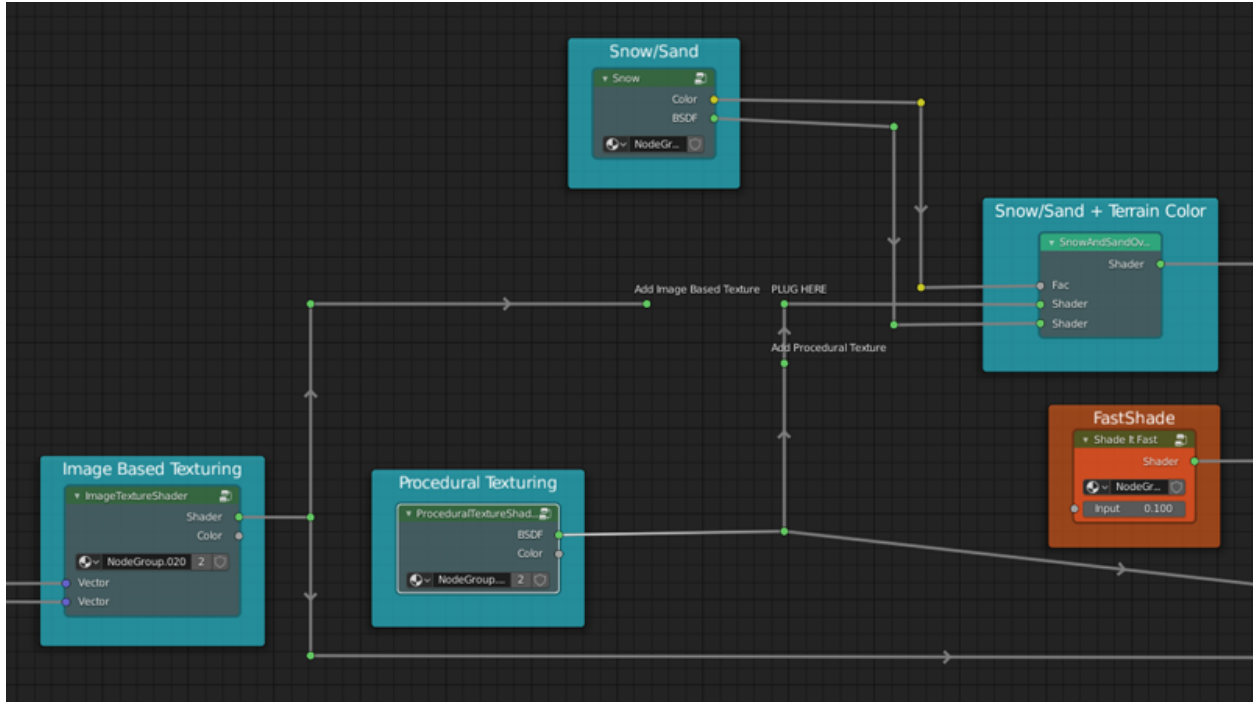
Waves, when connected right after the Cascader node group



Waves, when connected right after the Heightmaps frame, between SWITCH1 and Power1 node groups

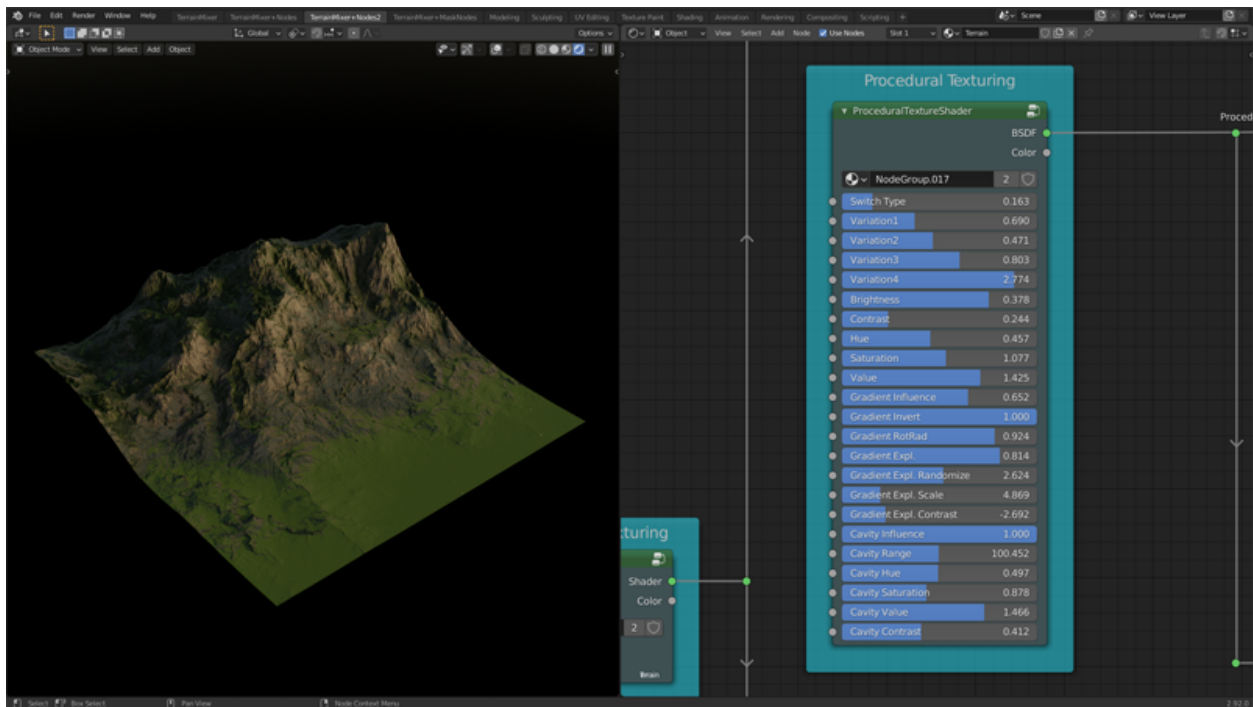
Texturing

Add some color, roughness, and specularity to your terrain with the help of images or fully procedurally. You can also add snow or sand. Select any of the node groups and press TAB to enter or exit them.



Procedural Texturing ([watch the video](#))

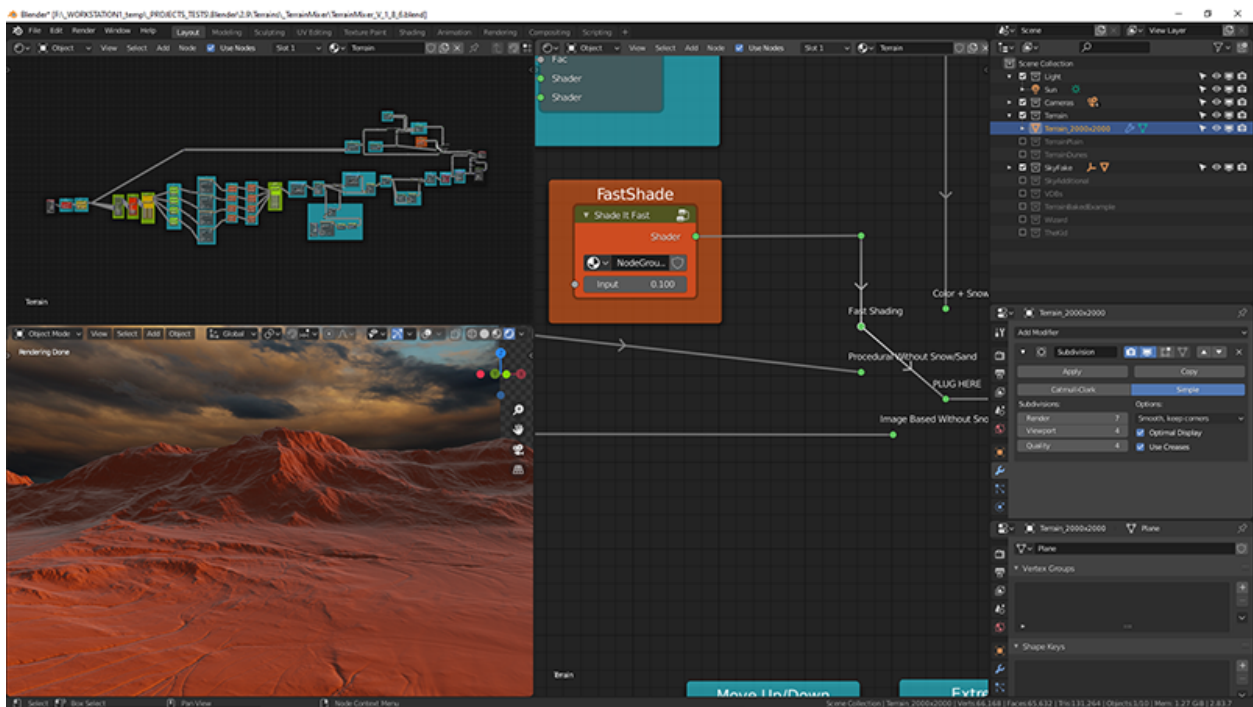
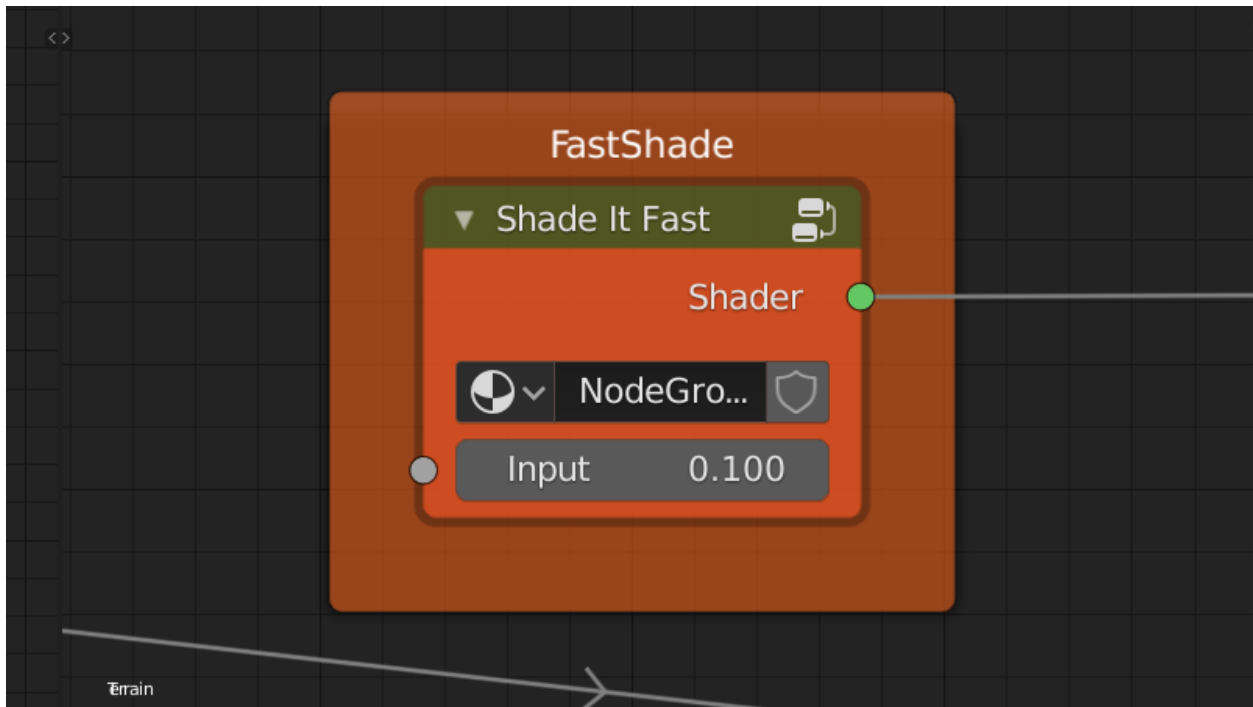
Look for Procedural Texturing node group and start playing with the sliders. You will get a lot more details almost instantly. When you're happy with the result just bake the color (see the BAKING/Diffuse maps instructions below)



Procedural Texturing allows you to add complex details to your terrains in a matter of seconds

Fastshade

If you switch to FastShade you will gain more speed when previewing edits inside the Viewport.



FAKE SKY ([watch the video](#))

Scene object: FakeSky

Material: Sky

Fake Sky consists of the object that has a texture applied to it and an Empty that is used for rotation, translation, and scaling. You can render the terrain and the Fake Sky together, or you can render them as two separate passes. After you download the Terrain Mixer, make sure to place the 'Sky Textures' directory (additional package) inside the Terrain Mixer's current version directory (for example 'TerrainMixer_V_1_9_1').

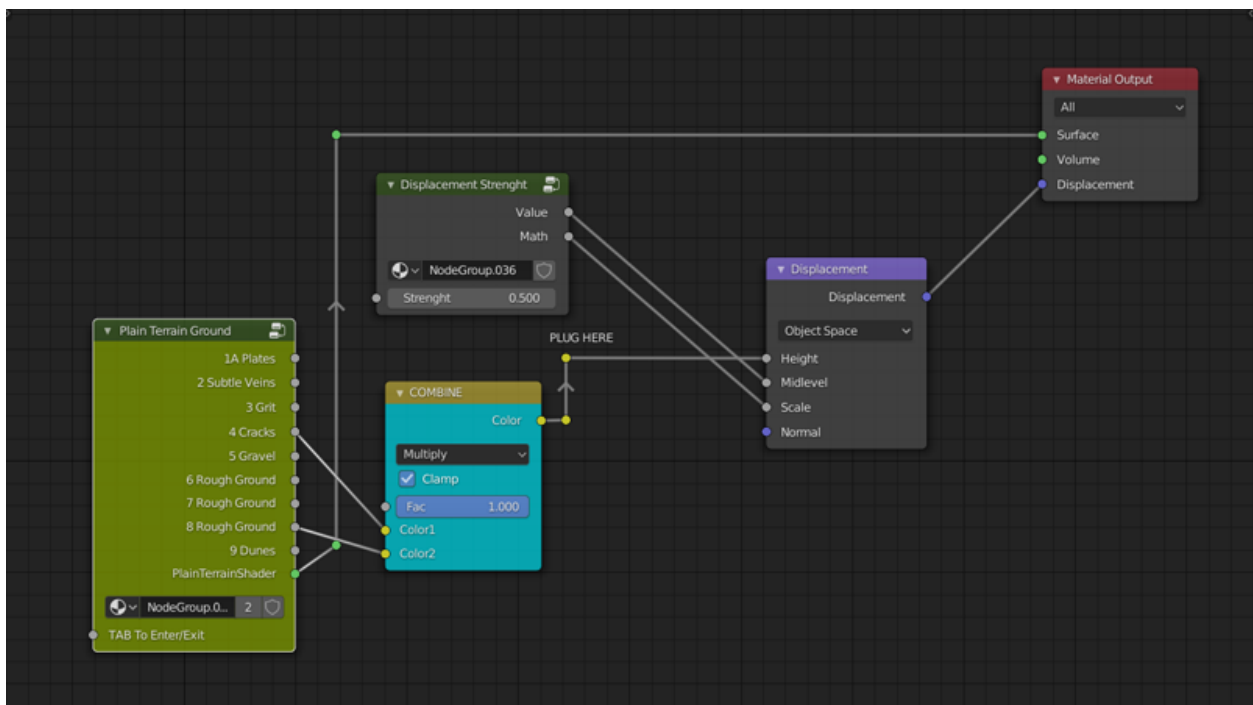
..

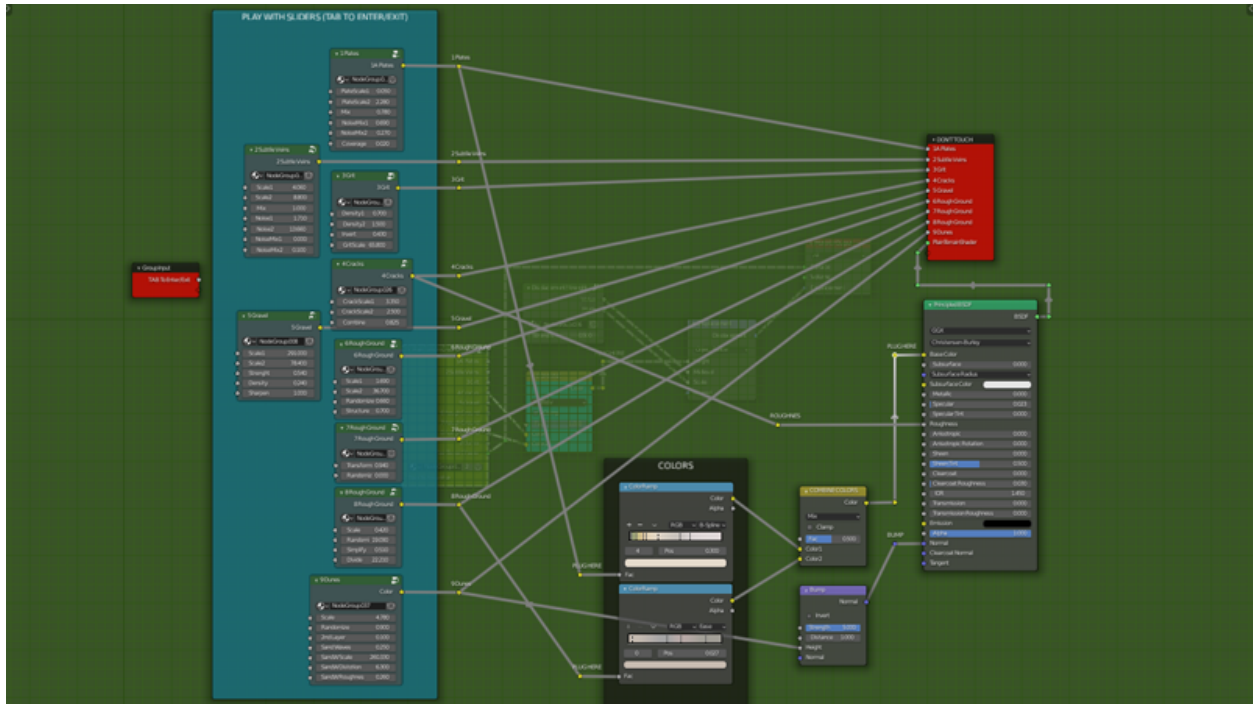
PLAIN TERRAIN

Scene object: PlainTerrain_2000x2000

Material: TerrGround

You can generate Plain Terrains procedurally, which allows unlimited variations, and you can also achieve amazing ground details. This is very useful when rendering objects which are closer to the camera. Select the 'Plain Terrain Ground' node group and press TAB to enter (and exit) the node group. Inside you can play with switching various nodes back and forth and watch how it affects the surface.





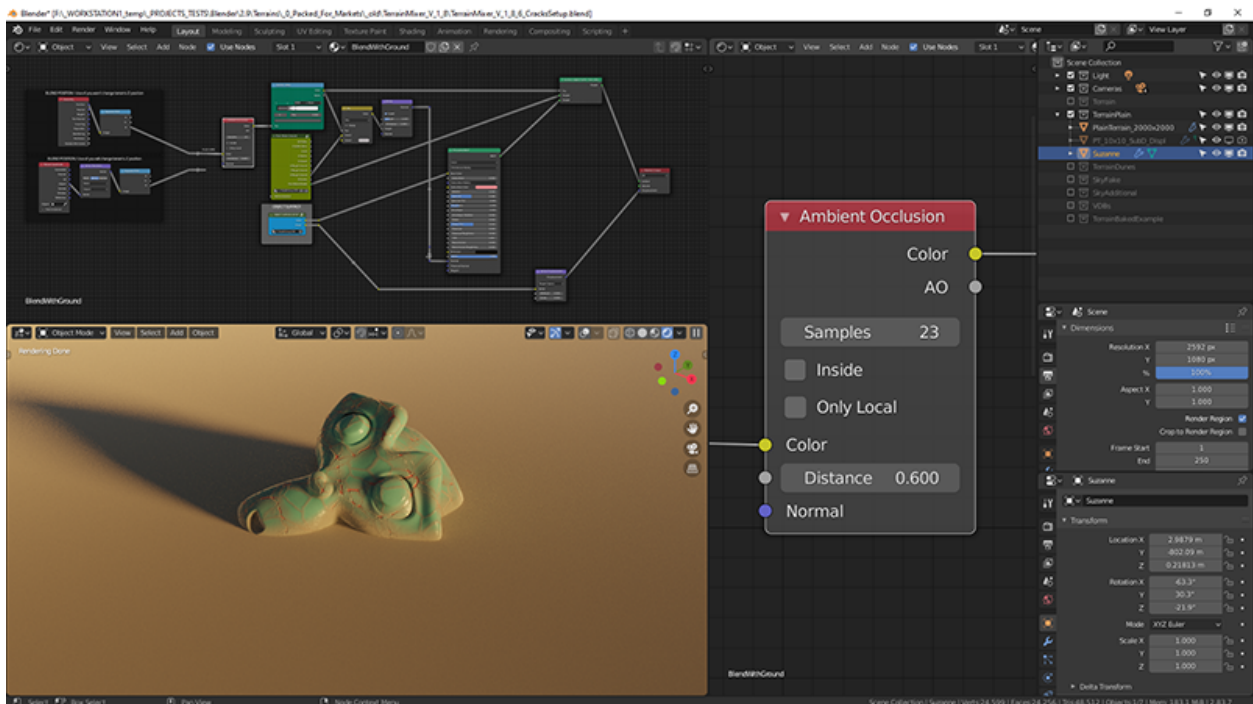
..

BLENDING

Scene object: Suzanne

Material: BlendWithGround

For even more realistic results, you can blend objects with the ground. To see how it works, make the Suzanne object visible (the one that is already in the Outliner/3D Scene) and look inside its material properties/node setup. To avoid any unnecessary headaches, we suggest that you apply this material to your object and make adjustments (adjust color, roughness, etc.). Feel free to replace that blue colored node group inside the 'OBJECT SURFACE' frame with your own color setup.



..

> *FAST TERRAIN GENERATION (by animating sliders, [watch the video](#))*

If you need multiple terrains fast, the easiest way of doing it is by animating the inputs of one or more nodes or node groups. For example, go to the Mixer node group, define value for any of the sliders, and add keyframe . Then, in Timeline, move 30 frames forward, change the value of that same Mixer slider and keyframe it. When you press play in your timeline, or scrub it manually, you should see the terrain changing.

..

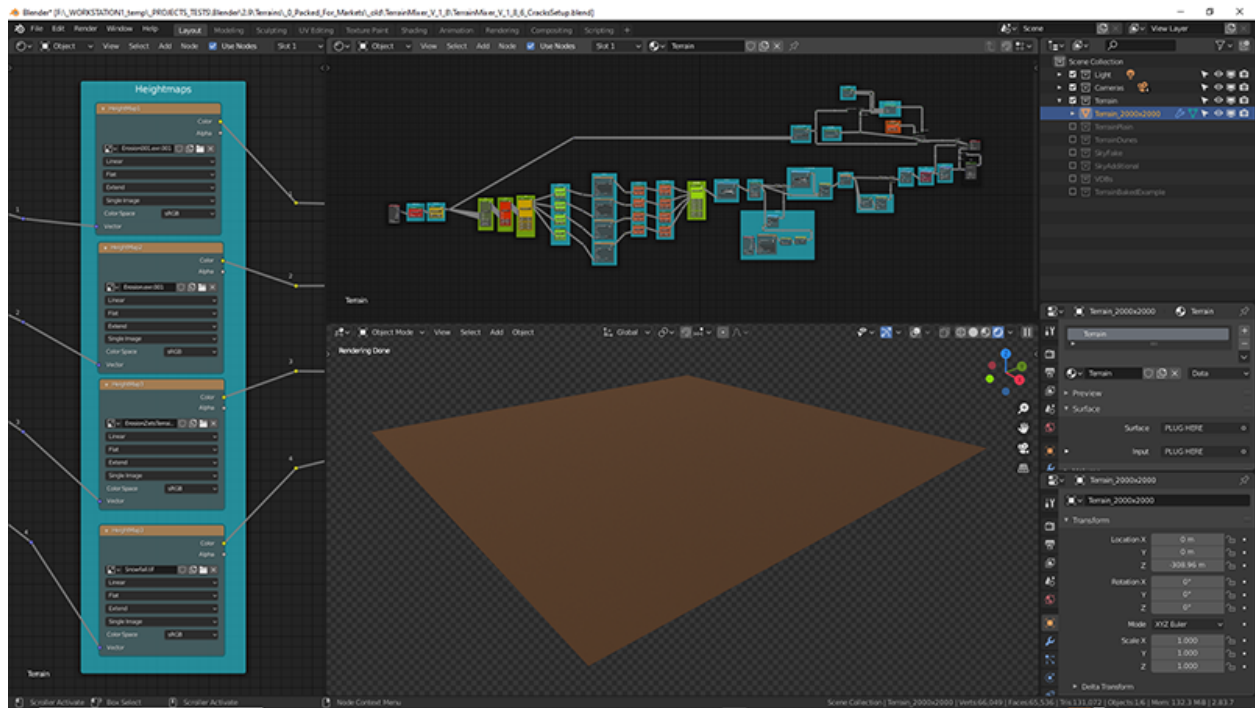
> KNOWN ISSUES

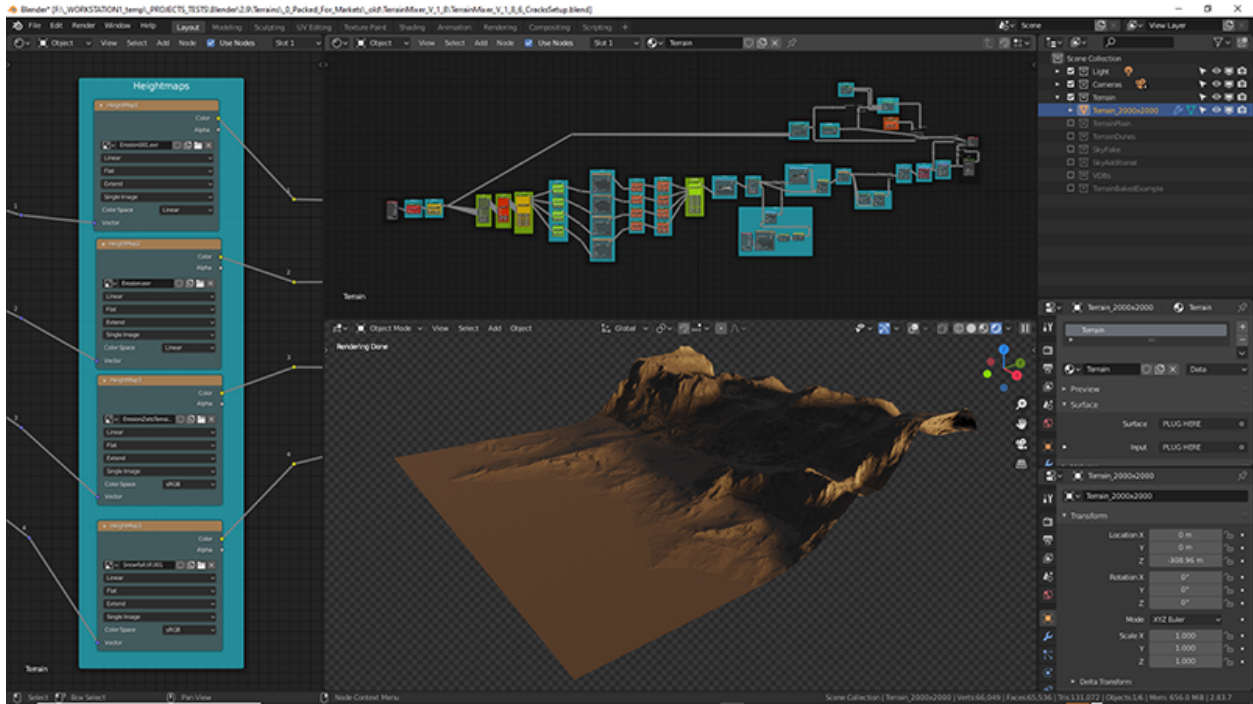
Black screen

If you're working in a Blender version prior to 2.92 you might get a black screen. Go to 'World' node editor and disconnect the 'Sky Texture' node.

Flat Plane

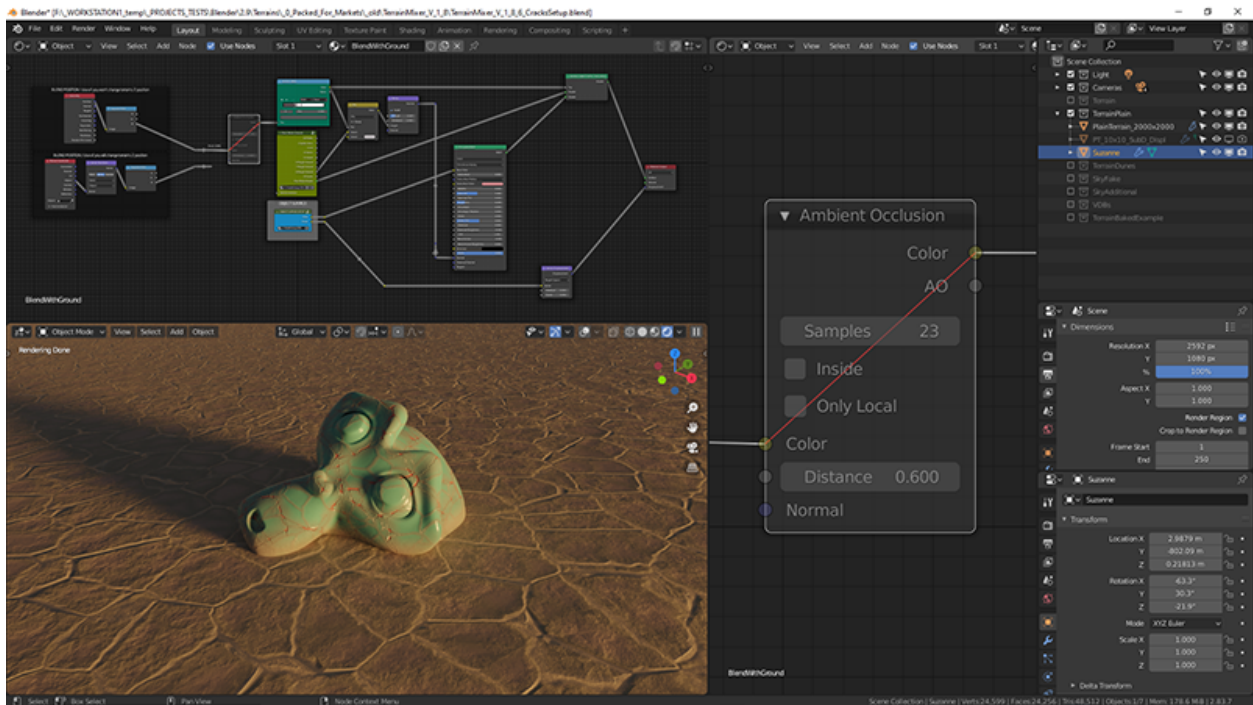
If your terrain is displayed as a flat plane, double-check that your Image source nodes are actually linked to the image files inside the 'Maps' directory.





Optix Issue (Blender 2.83 and above, works in 2.92 and above)

Optix doesn't support Bevel and Ambient Occlusion nodes for Cycles (fixed, works fine in version 2.92 and above). If you're using Optix make sure to mute the Ambient Occlusion node inside the Suzanne's material (Material: BlendWithGround).



Banding (stripes/lines effect on terrain's surface)

Sometimes, when you come really close to the terrain's surface, you might notice a banding effect (stripes/lines). It is actually related to Blender/Cycles more than it is to Terrain Mixer. Inside the Material Properties, under Surface/Displacement change 'Displacement and Bump' to 'Displacement Only'. Of course, this means that you will lose bump details. If your machine allows you to push subdivision levels way up then it doesn't really matter, but if you have a bit weaker machine/card you might want to use bump as well. So, if you need bump details, you can change the Texture Interpolation (those 4 Image source nodes for heightmaps) from Closest to Linear or Smart. That usually solves it.

Border Walls (stretched edges)

Sometimes the terrain geometry can end up having border walls (stretched edges). Unchecking the 'Interpolate' (Texture Properties) checkbox usually solves the border walls issues.

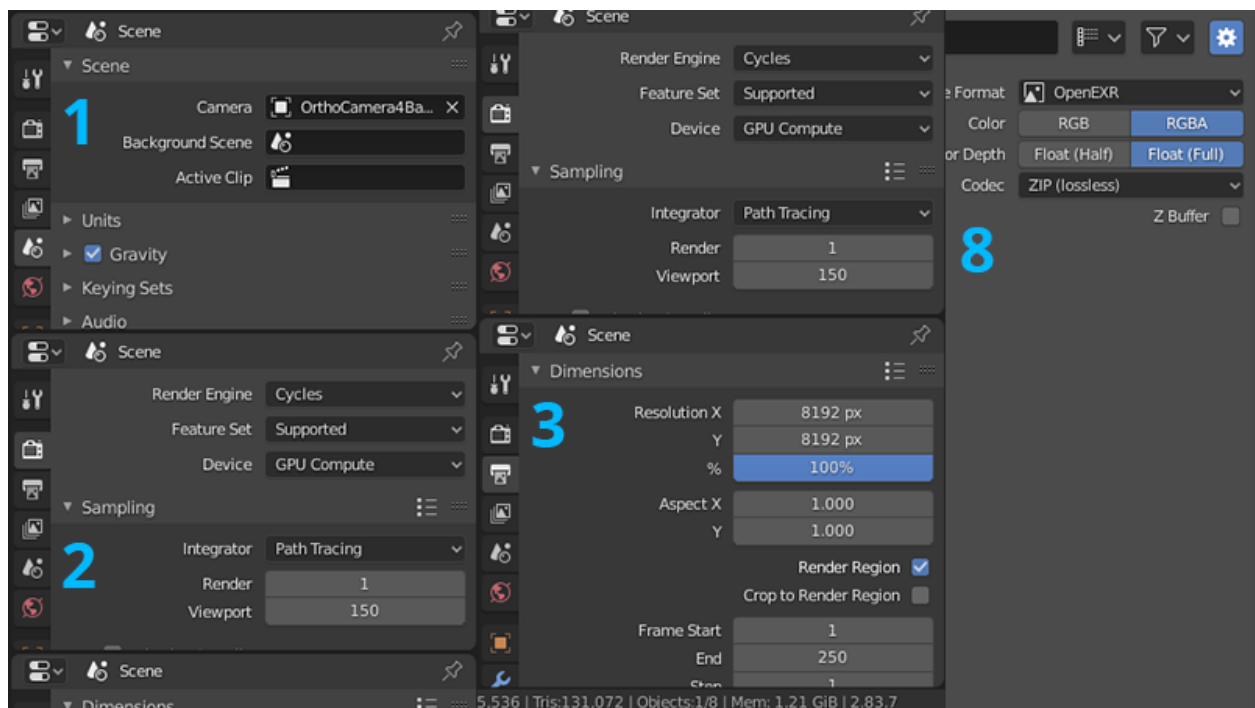
..

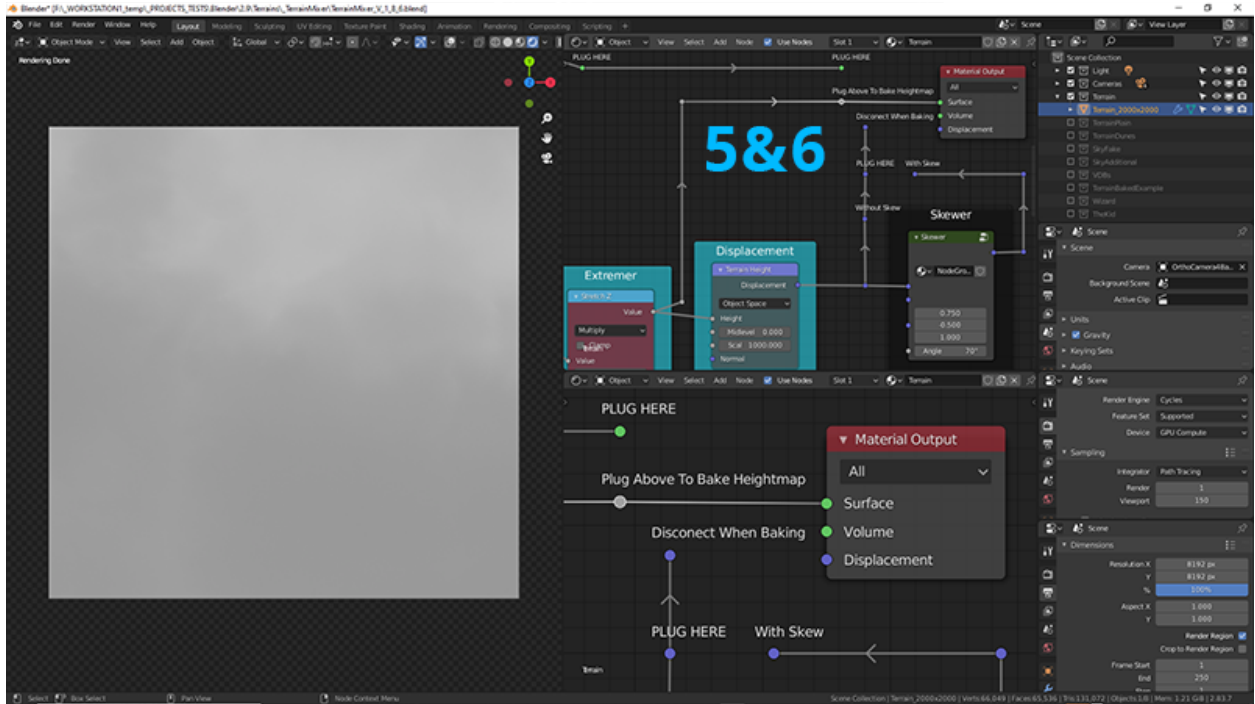
> BAKING

Our baking process is super simple because it is almost identical to any other static image rendering (F12) scenario. With the baked results of your terrains you can use heightmaps in Eevee or any other external 3D package.

Heightmaps ([watch the video](#))

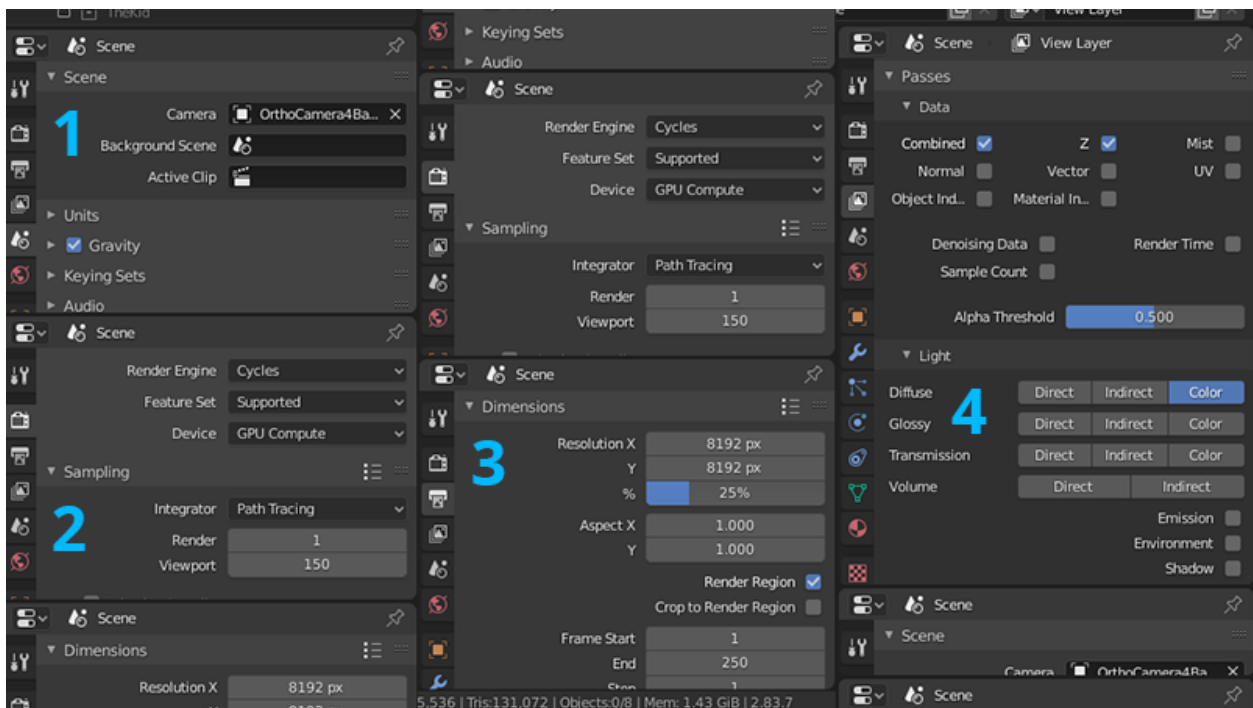
1. Inside the 'Scene Properties' dialog select the 'OrthoCamera4Baking' as the active camera for rendering.
2. Inside the 'Render Properties' go to Sampling/Render and set the value to 1.
3. Inside the 'Output Properties' dialog set the resolution to any value but make sure it is a 1:1 ratio. 8192x8192 px will be more than enough, but you can also start with lower values (4K, 2K, or 1K).
4. Select the 'Terrain' object (from the Outliner).
5. Open the 'Shader Editor' so you can edit the 'Terrain' material.
6. Go to 'Material Output' (the last node), clear the 'Displacement' input, and plug-in the 'Extremes' node into 'Surface' input.
7. Render (F12).
8. Save the image as OpenEXR (32 bit) and set the 'Color Depth' to 'Float (Full)'.

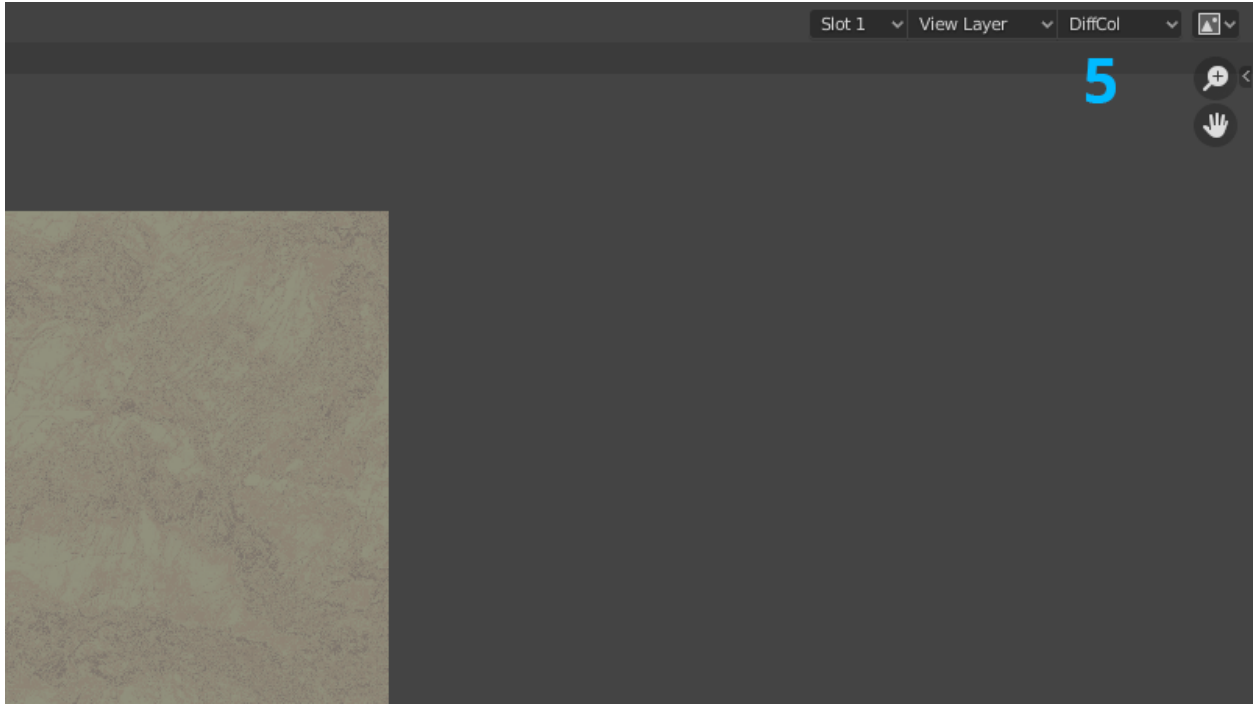




Diffuse maps

1. Inside the 'Scene Properties' dialog select the 'OrthoCamera4Baking' as the active camera for rendering.
2. Inside the 'Render Properties' go to Sampling/Render and set the value to 1 or above.
3. Inside the 'Output Properties' dialog set the resolution to any value but make sure it is a 1:1 ratio. 8192x8192 px will be more than enough, but you can also start with lower values (4K, 2K, or 1K).
4. Inside the 'View Layer Properties' dialog go to Passes/light and click the 'Color' checkbox.
5. Render (F12).
6. In the upper right corner of the 'Blender Render' window choose 'DiffCol' instead of 'Combined'.
7. Save the image (PNG).





..

> *WATCH ALL THE VIDEOS*

Click [HERE](#)