

TurboTrees



Summary

Page 3 to 5 - Getting Started

Page 6 - Using the Modifier

Page 7- Weight Paint and Animation

Page 8 - Materials And Lighting

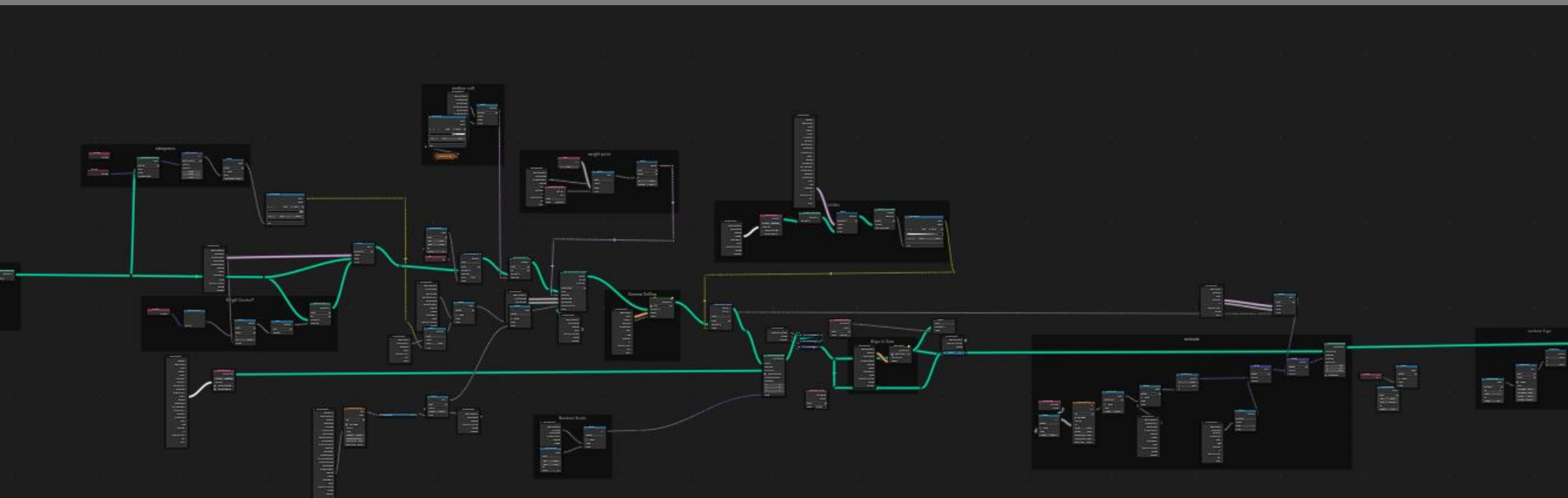
Page 9 - Compositing tips.

Page 10 - FAQs

Page 11 - Bonus

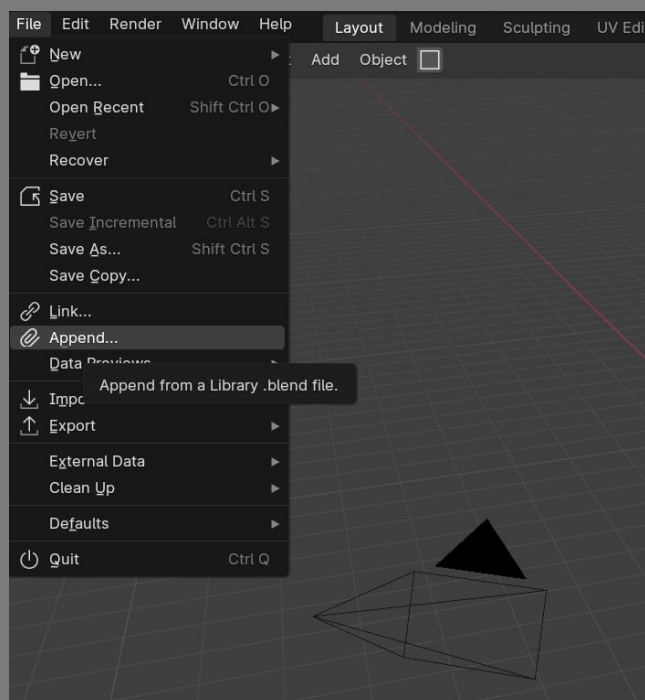
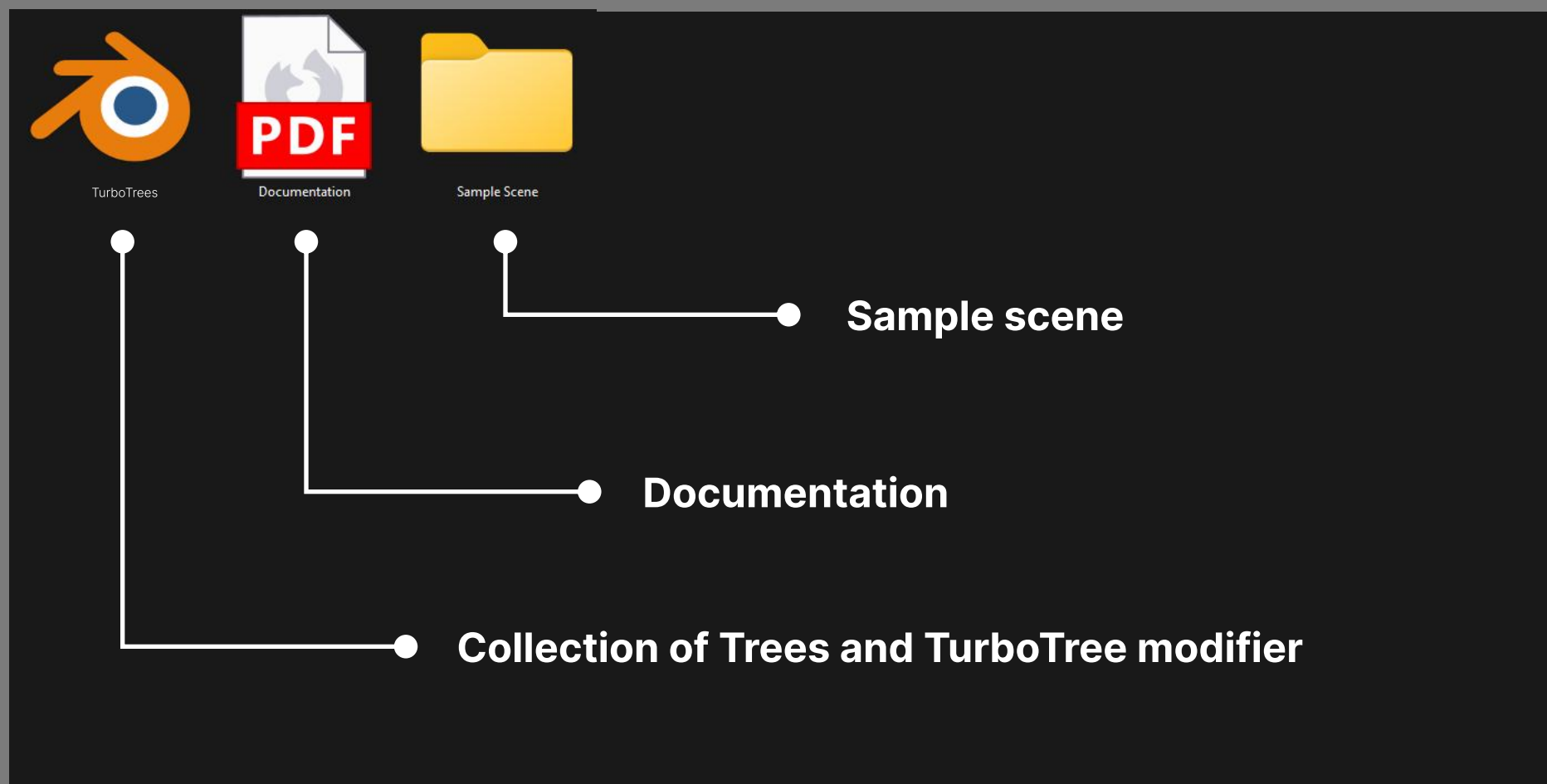
This package includes:

- **TurboTrees modifier and tree collection**
- **Sample HDRIs**
- **Sample Scene**
- **Compositor tips**
- **Bonus TurboGrass modifier**



Getting Started

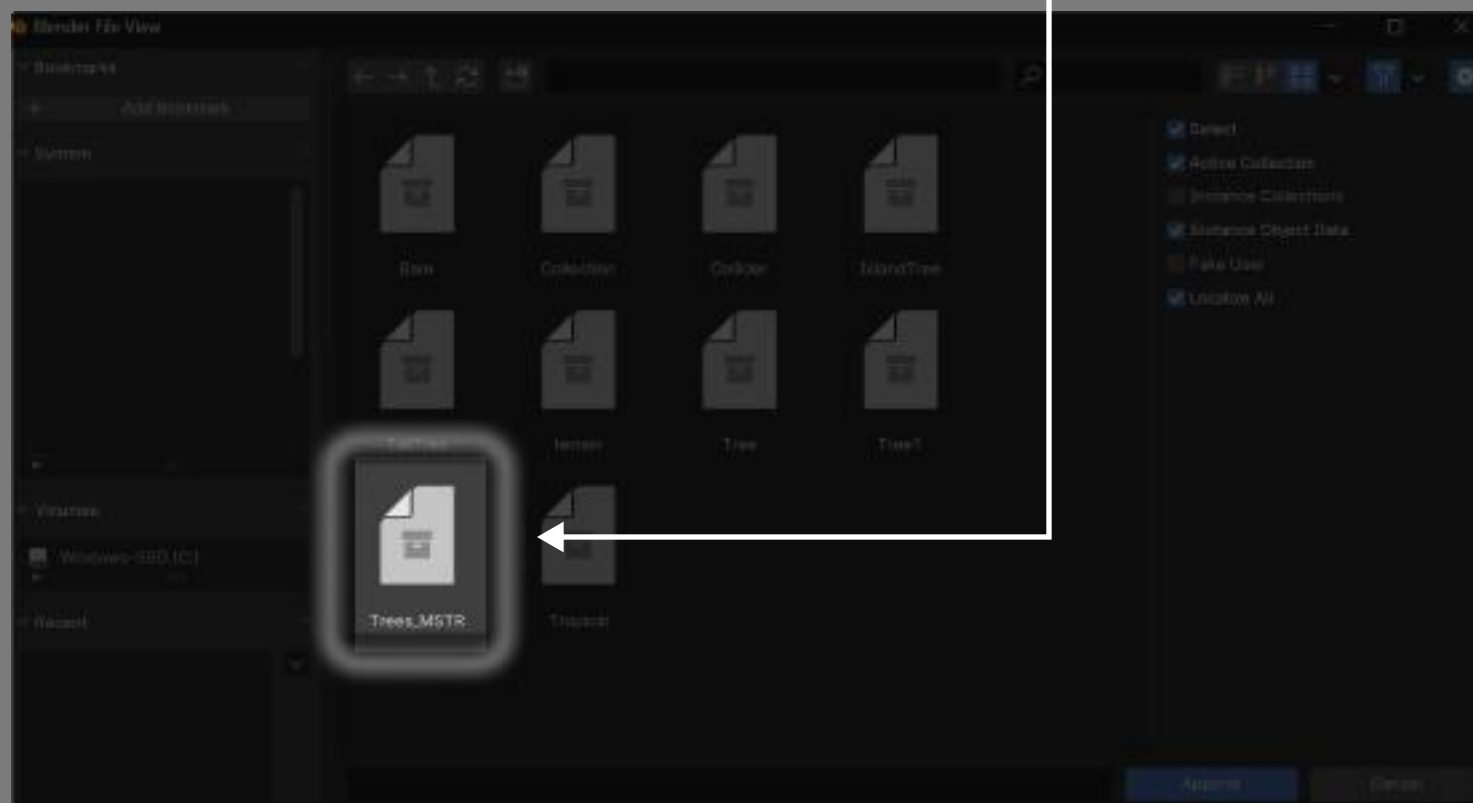
After downloading and un-zipping the archive you should see the below files:



To begin integrating TurboTrees into your project, begin by appending the TurboTree_v1 file.

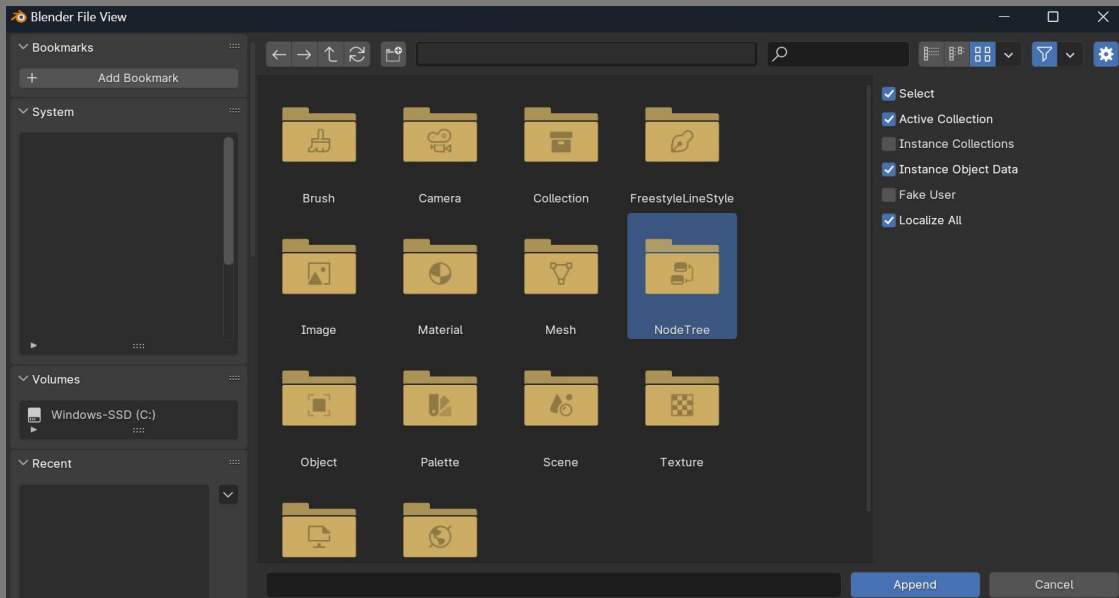
File>Append... Then select *Collection* from the browser window.

Select **Trees_MSTR** and append it. This collection includes the different tree types to use with the modifier.

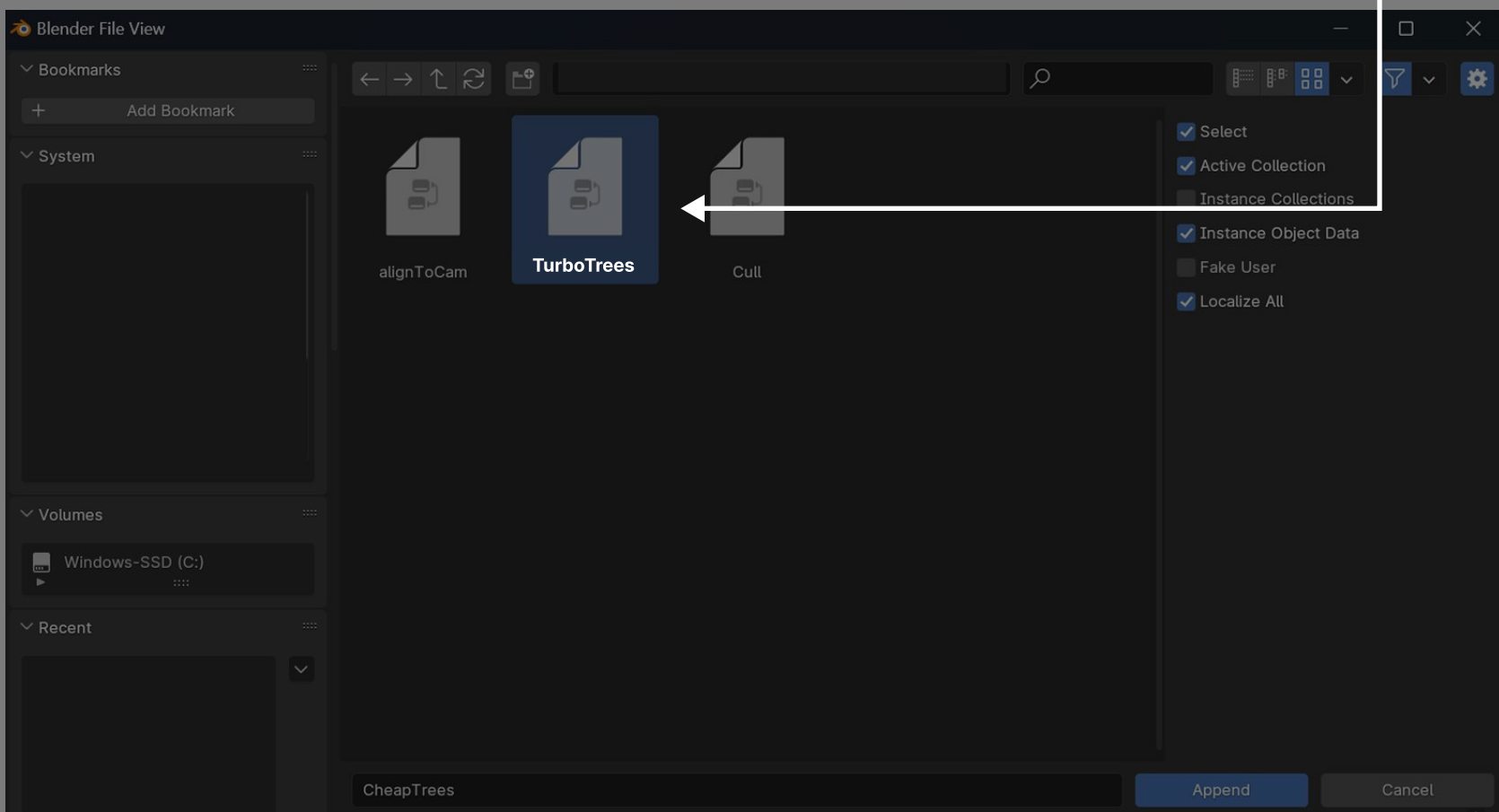


Getting Started

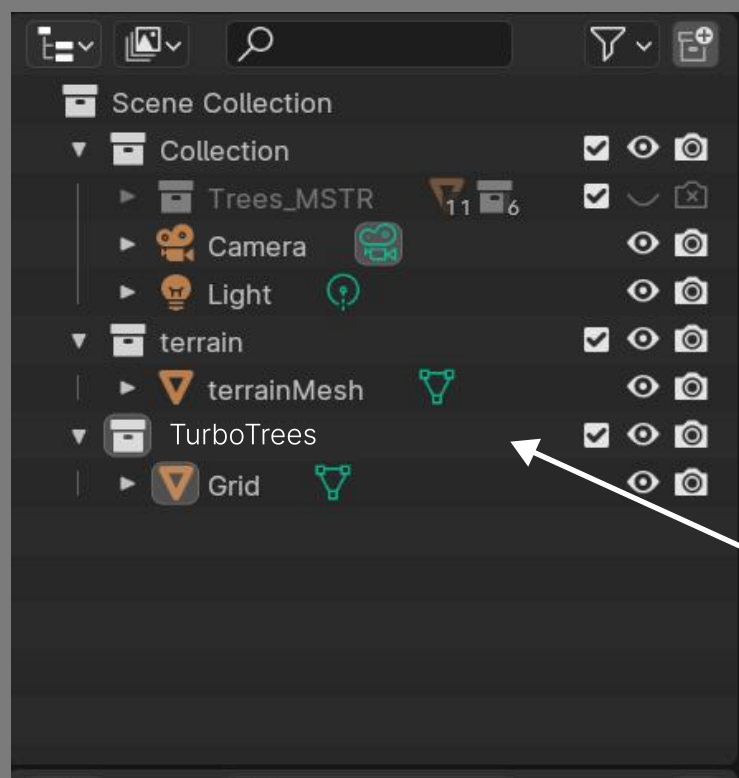
We then need to append the geometry nodes modifier. Return to the File menu & append, then select *Node Tree*.



Inside the Node Tree folder select and append TurboTrees



You will now have everything needed to start using *TurboTrees*.

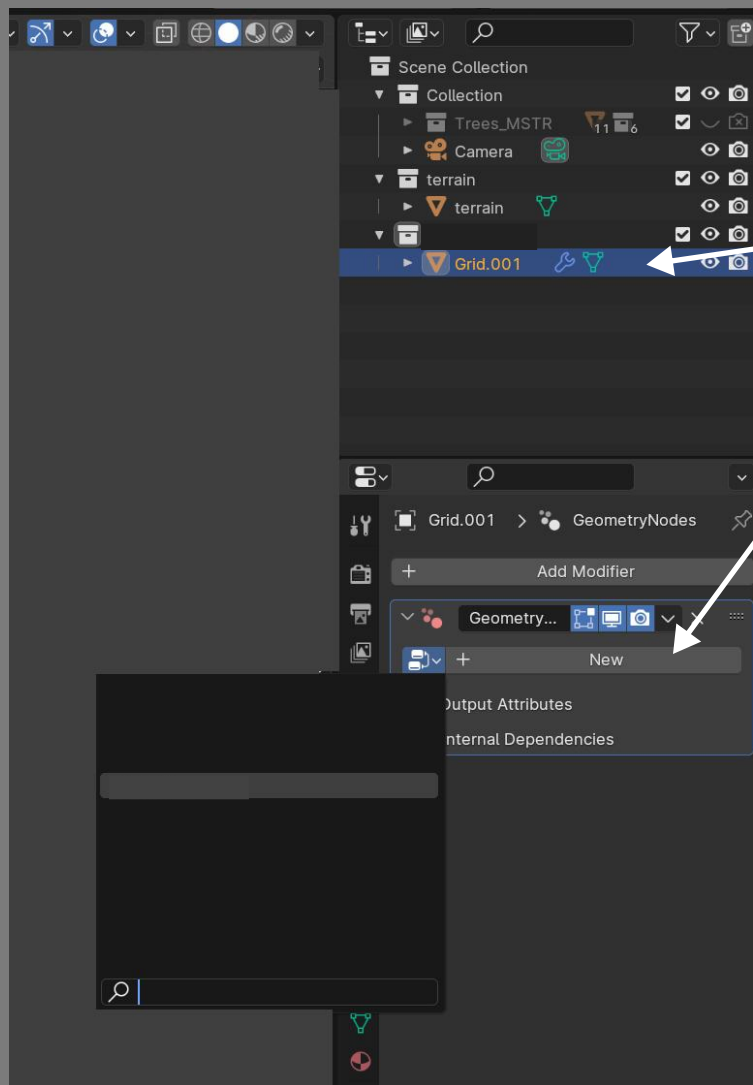


You can now hide the collection in viewport and render.

Place your *terrain* or ground mesh in a collection called *terrain*.

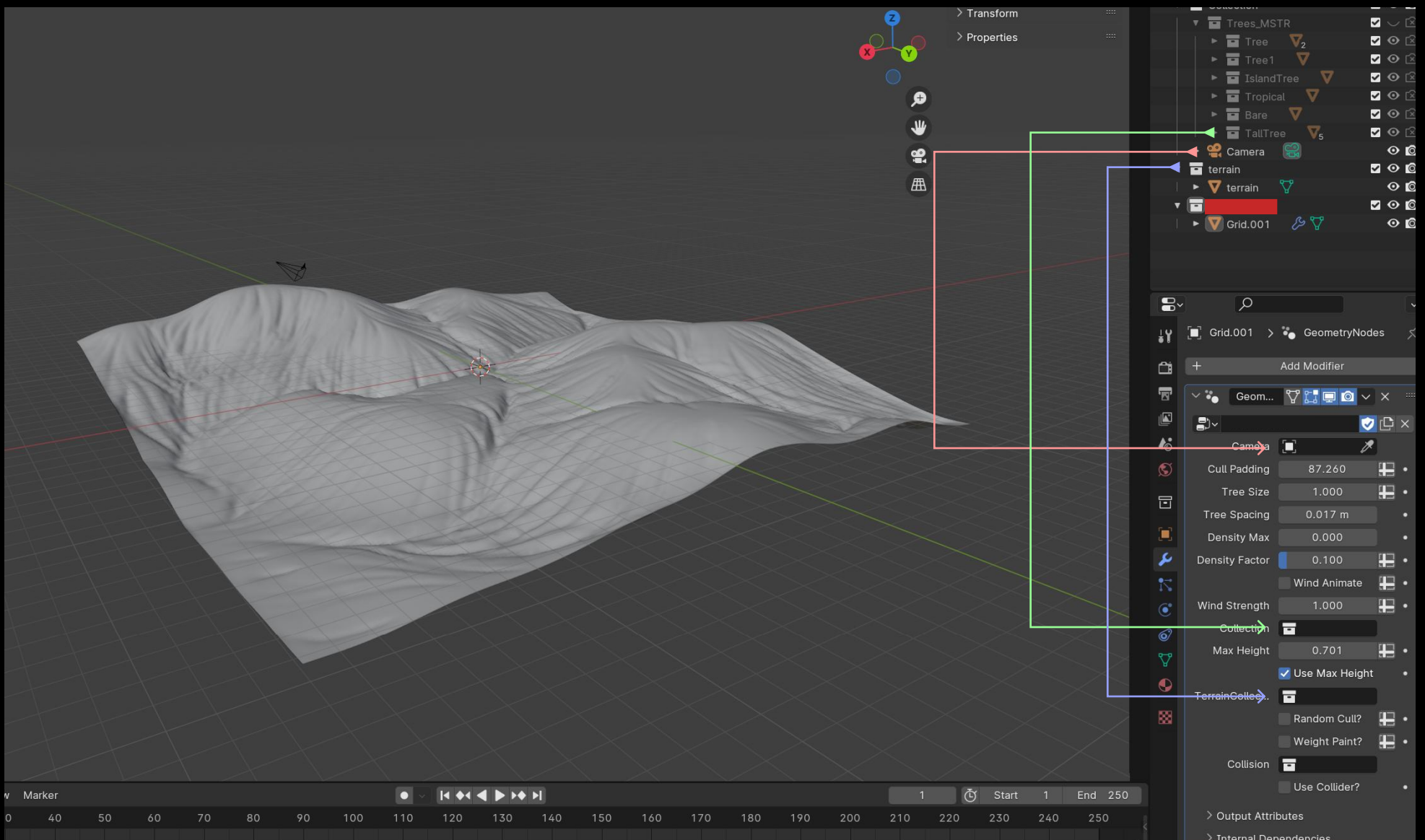
Create a collection for your TurboTrees and place any proxy geometry inside, we will be applying the *TurboTrees* geonodes on this mesh.

Getting Started

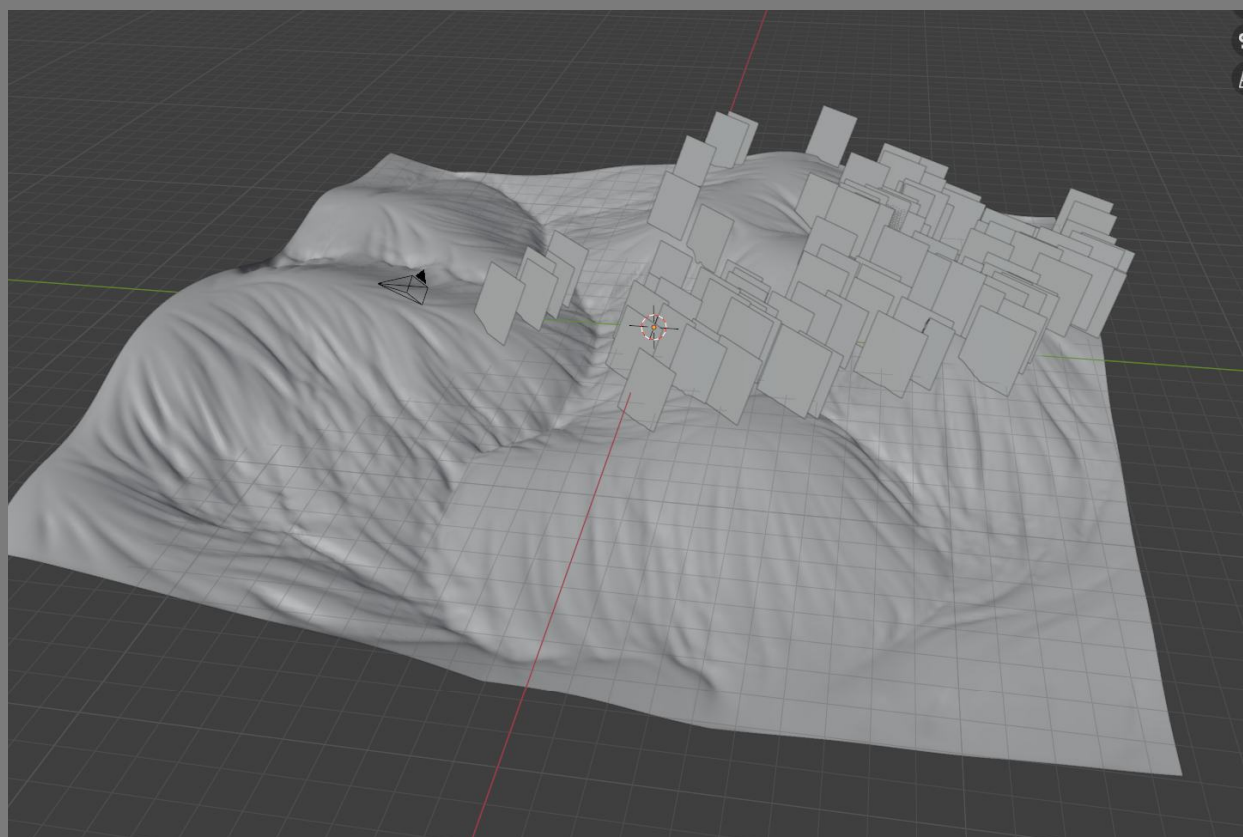


Select the proxy geometry inside the *TurboTrees* collection, and add a *GeometryNodes* modifier, add the TurboTrees modifier we appended earlier.

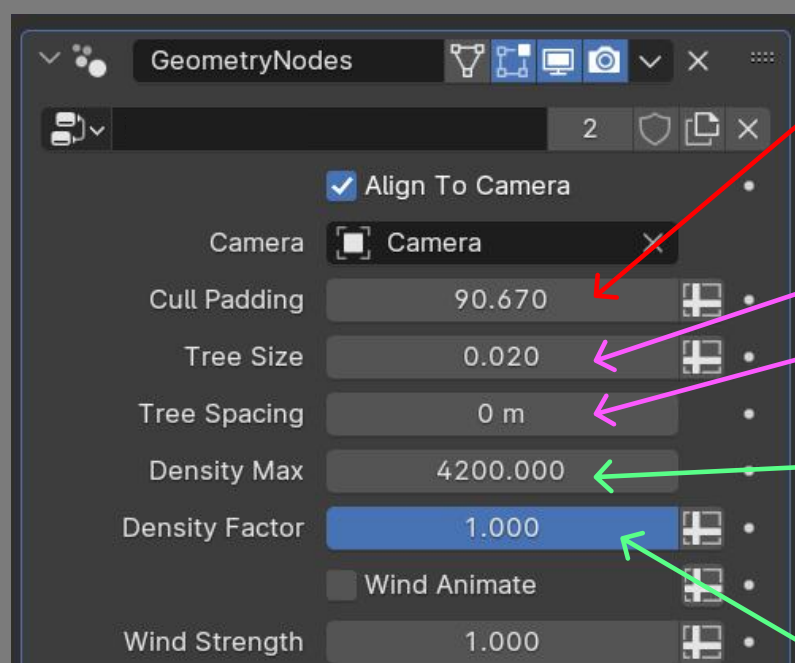
We'll need to populate the fields inside the modifier tab before we see results. Add your scene's **Camera**, your desired **Tree collection** and **Terrain Collection**.



Filling your scene, and modifier information



If you now set your Density Factor and Density Max to 1 the trees will begin to populate, align to your camera and cull based on what the camera sees.



This adjusted the padding for the camera culling

This will control the tree billboard sizes.

The minimum spacing between cards.

The Max amount of trees, it's important to keep this number low while in planning stages, you can slowly turn it up later.

For extra viewport performance, you can keep Density Factor low and turn it up before a render.

You can toggle swaying animations, as well as change the 'wind' strength.

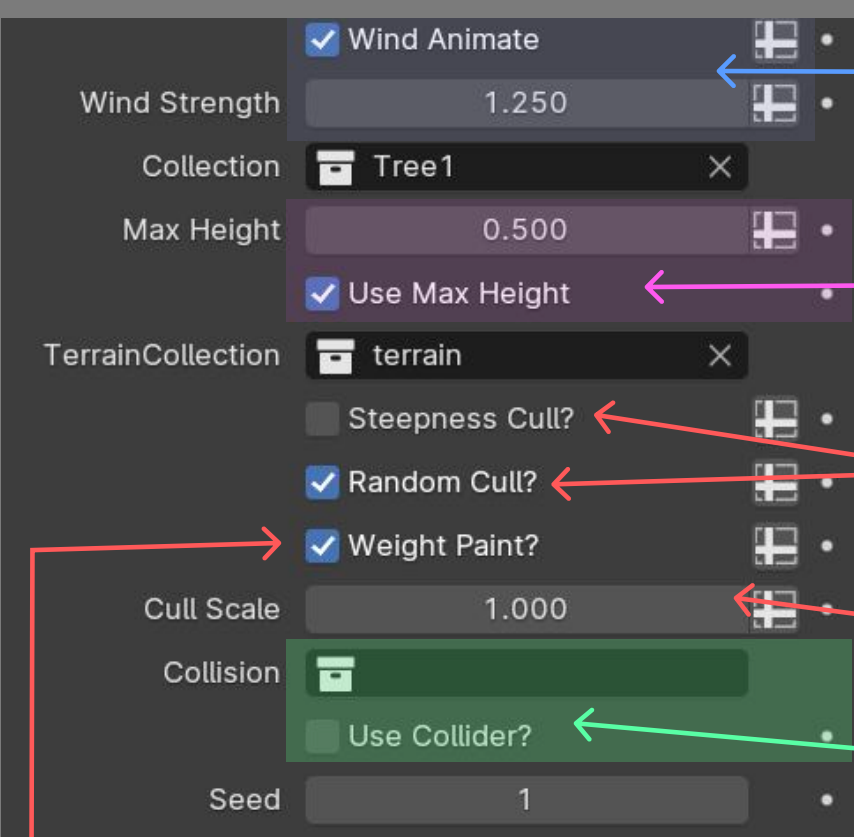
You can set the max height trees are allowed to be using this field, as well as toggle if you want a height limit at all.

These field can be used to cull based on steepness or randomly. It will give it a more organic and less repetitive look.

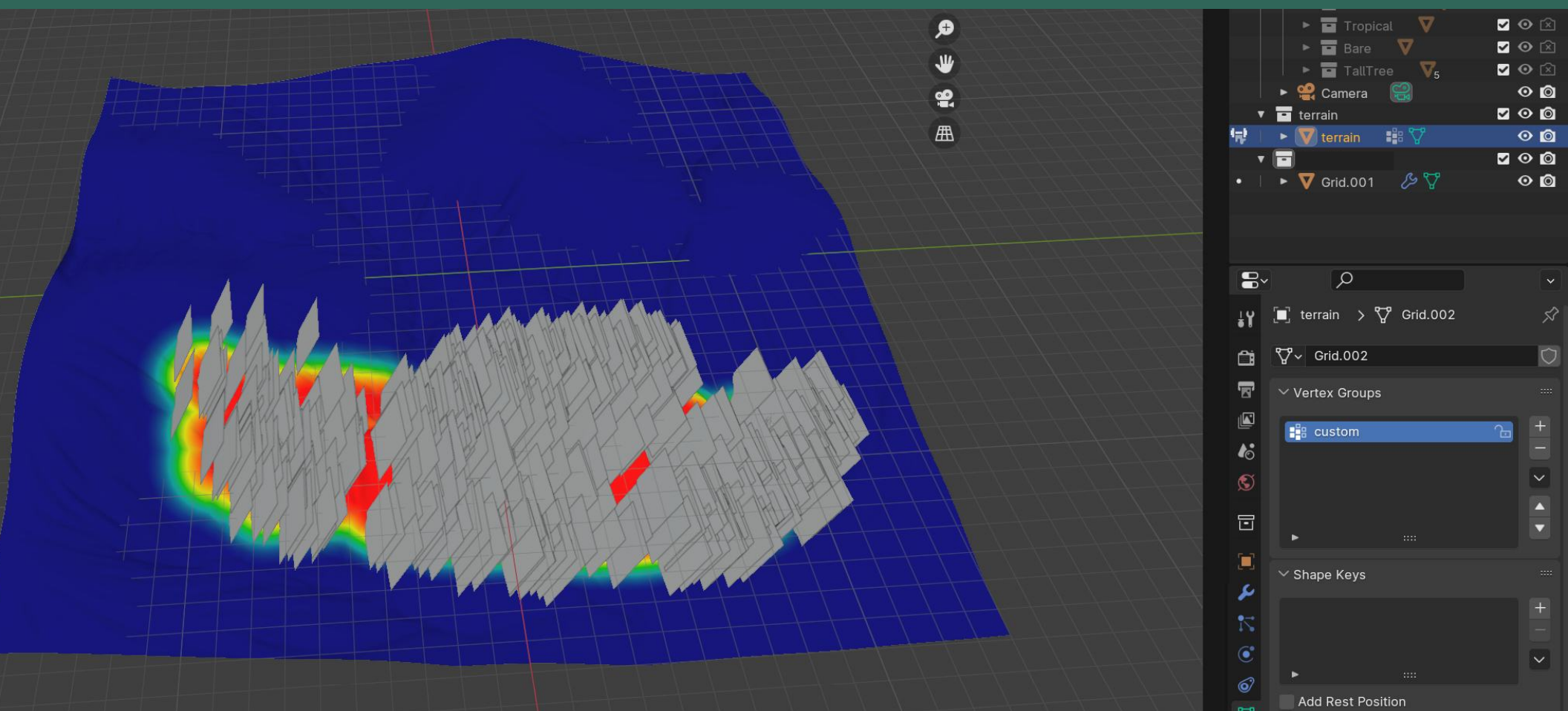
This will scale the noise pattern used in 'Random Cull'.

When checked the trees will animate or collide when in proximity of the Collision collection. First this to work, 'Wind Animate' needs to be turn on.

You can weight paint where on the terrain you want trees to appear, if this is checked it will use the weight paint. Be sure to name your vertex group 'custom'

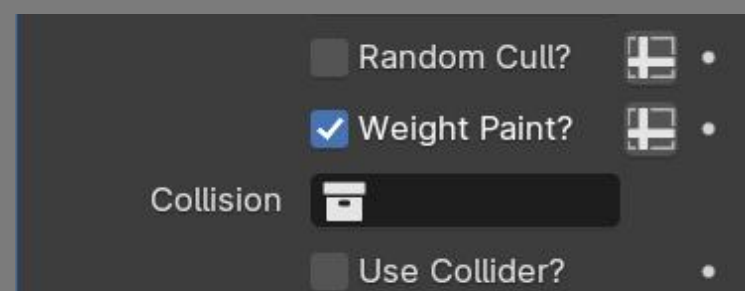


Weight Painting

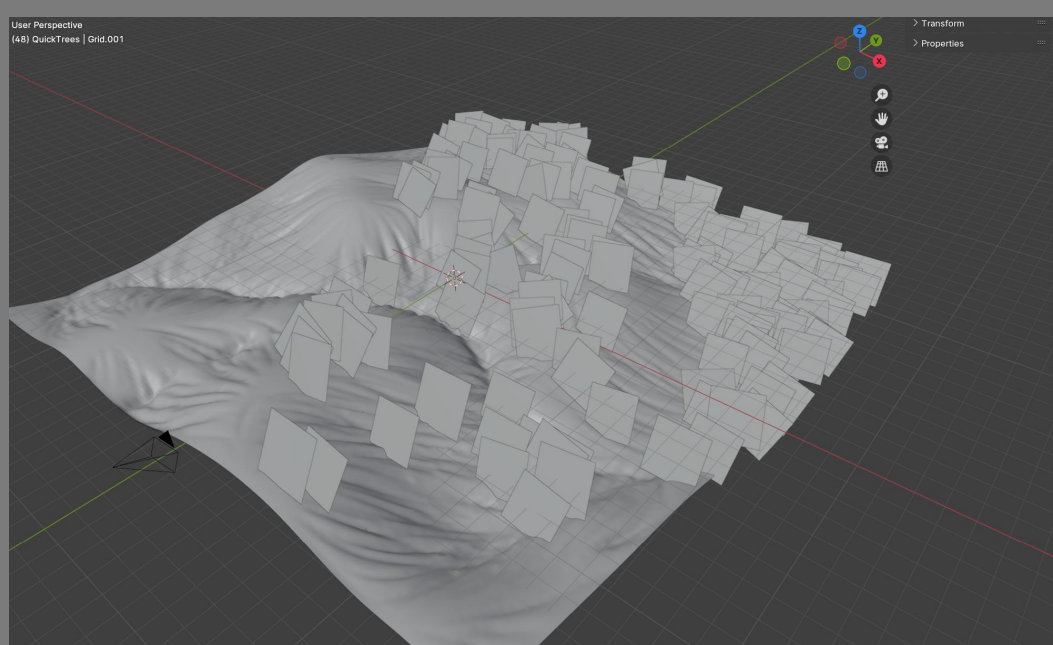


In the above example, the Weight Paint option is checked, and on the terrain mesh a weight paint group has been created, and named 'custom'.

You can place as many meshes inside the 'terrain' collection as you would like, if they have a vertex group called 'custom' the modifier will be able to read it once the Weight Paint option is checked.



Animation & Collider



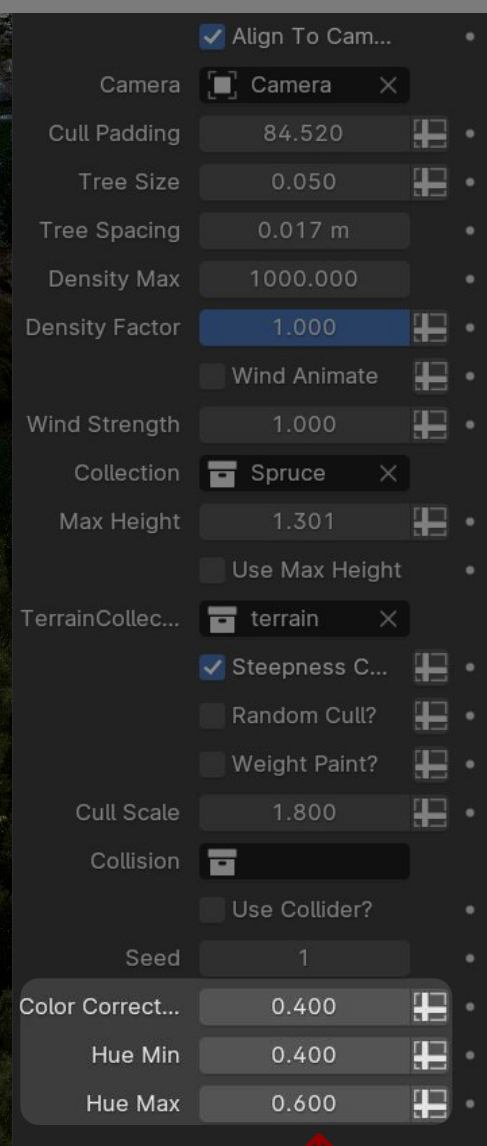
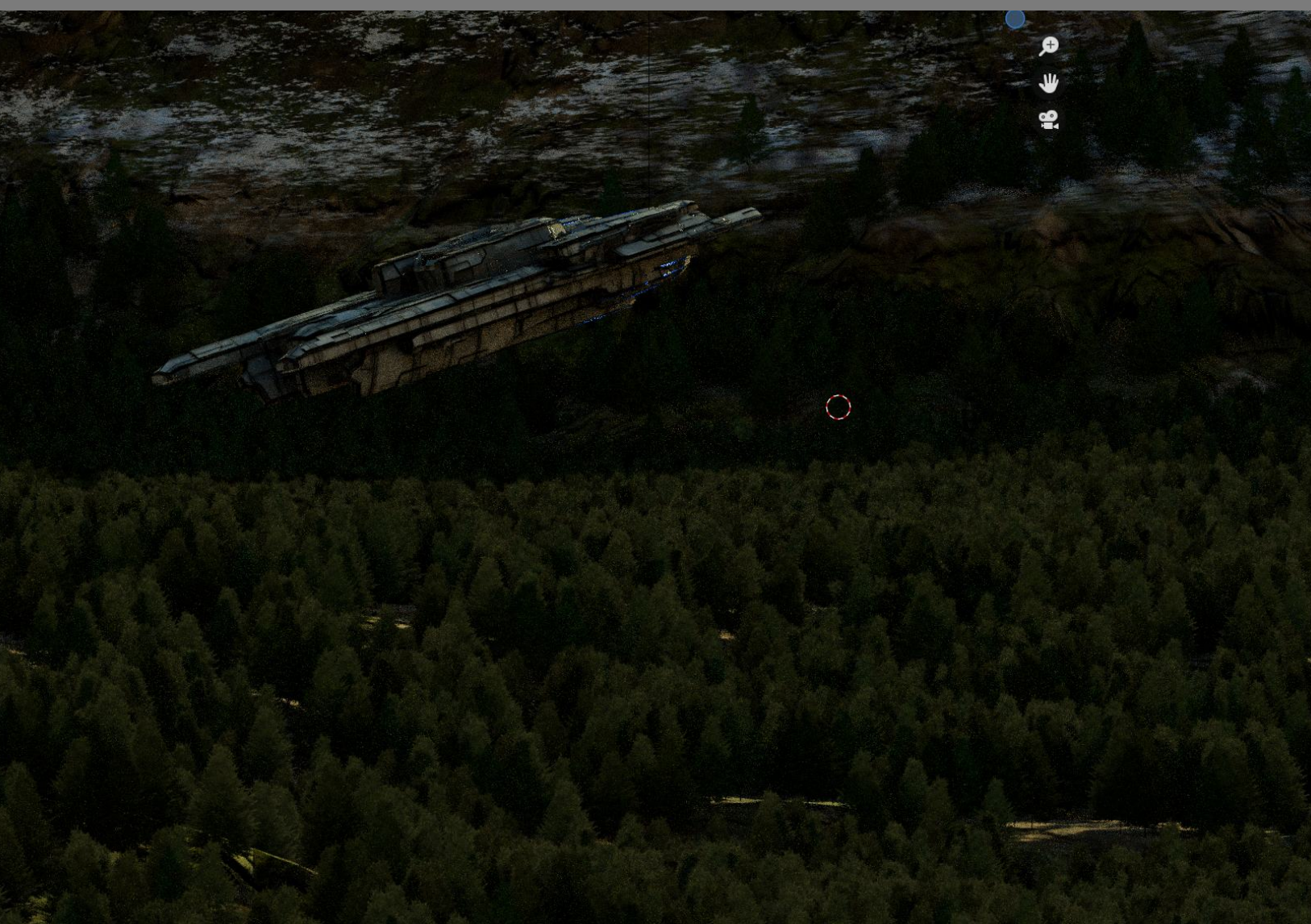
Use this to toggle swaying animation, it's strength can also be adjusted.

You can limit the swaying animation using the "use Collider" option. Create a collection called "collision" and place any geo inside, it will limit which trees are affected.

In this example, an animated space ship passes by the trees and with the collision option checked only the trees in proximity of the "collision" collection animate.



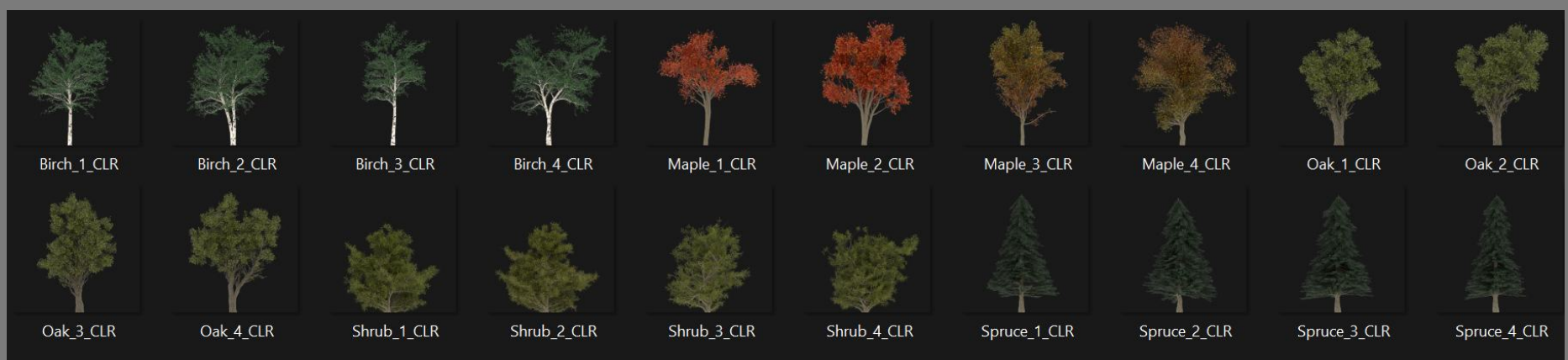
Materials and Lighting



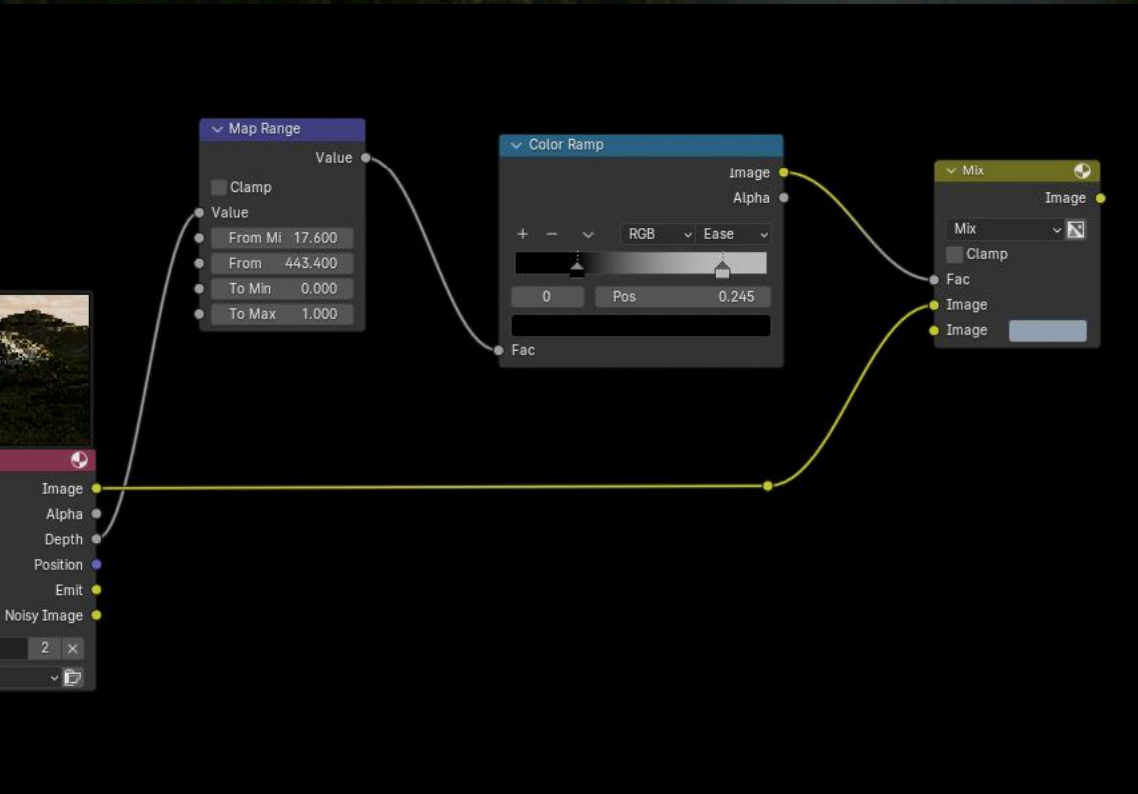
The shader setup allows for some light to bleed through the tree's textures giving the illusion of sunlight bleeding through the leaves.

If you find the trees don't blend well with the scene lighting, you can adjust and color correct it from within the geometry nodes modifier, no need to dig into the shader. You can also set the min and max hue variation.

More trees will be added in future updates for free.



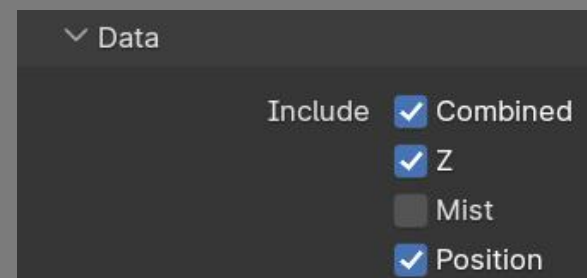
Compositing Tips



Since the purpose of TurboTrees is to efficiently create large forests, the overall scale and “grand” look can be accentuated with some overall compositing tips.

On the left we have the straight render of the scene with the trees scattered on the terrain collection. Overall it looks quite dull.

Here we have the depth pass processed through a map range, and later a ramp node. (Depth pass tends to be less noisy than mist when dealing with alpha channels).



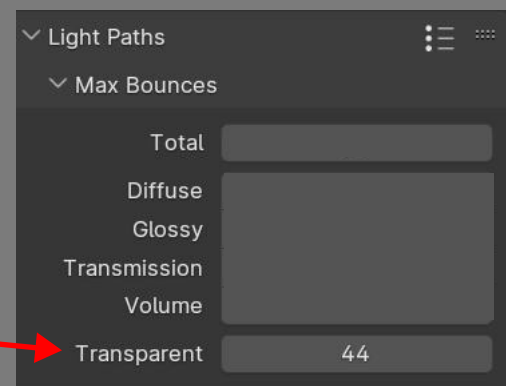
And here we have the output of the ramp piped into the factor of a mix node. This gives the appearance of 'atmospheric extinction', where light is scattered in the atmosphere. By using the compositor instead of volumetrics we can achieve this look cheaply and quickly!

The values of the map range and ramp will depend on the camera position and scale of your scene, but this effect is vital in selling the scale of your scene.

FAQs

I'm using cycles and my trees aren't transparent and show up black.

You will need to increase the 'Transparent Bounces' under Light Paths in the render options.



I've followed the documentation but my trees are not showing.

Ensure that Density Factor is not 0, alternatively ensure that if you have a max height set, the value isn't too small.

My terrain's weight paint groups are not being read.

Ensure that the weight paint group is called 'custom'. The modifier will only read groups called custom.

Can I add my own tree textures?

Yes! I will be adding more as time goes on but the setup is fairly easy to get going. I will add some documentation on adding your own tree textures.

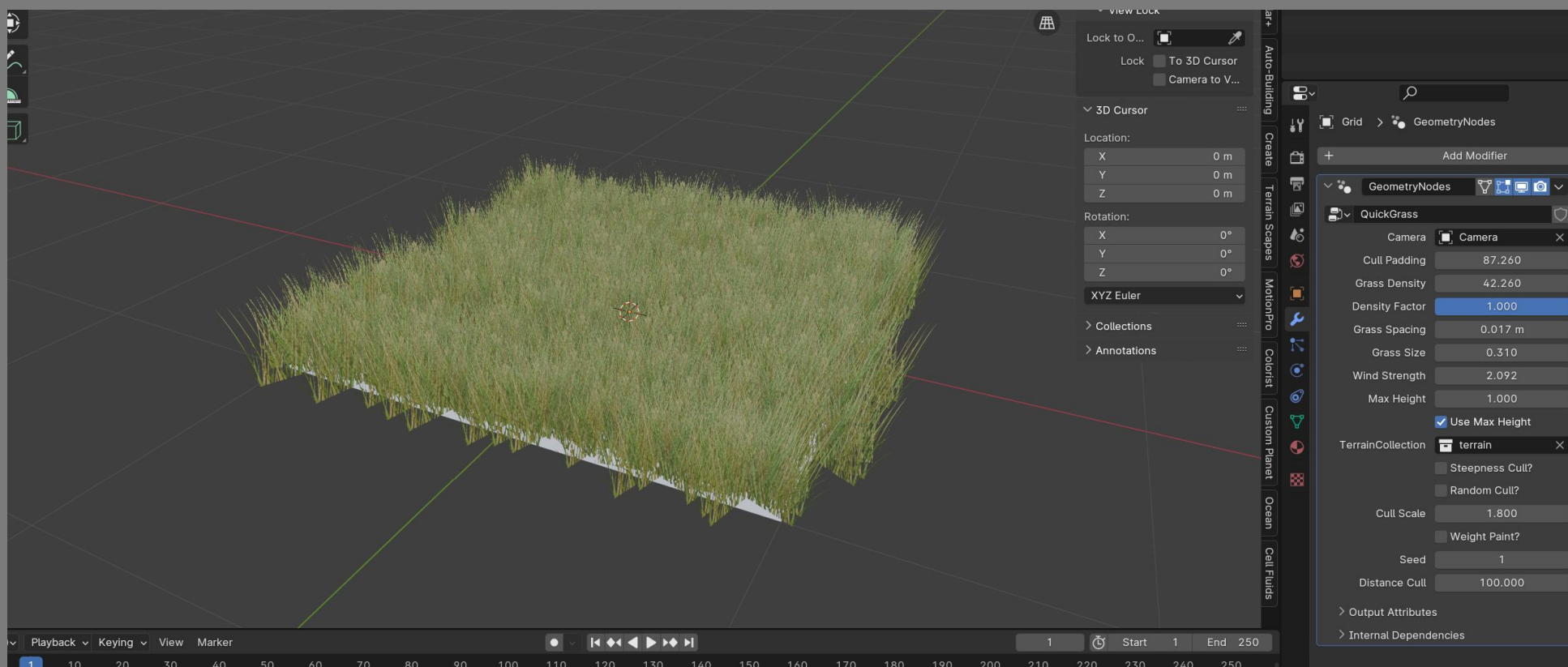
Why should I choose this over other options on the market?

Feel free to use what works best! I personally try to only use solutions that aren't overly complex or unnecessarily heavy. Lots of addons get abandoned or no longer updated, and since this is just a geonodes modifier + shader you can freely peek inside and change anything. The geonodes modifier has been organized and labeled neatly. I created this for my own project as I didn't feel there was an equally affordable and drop in solution.

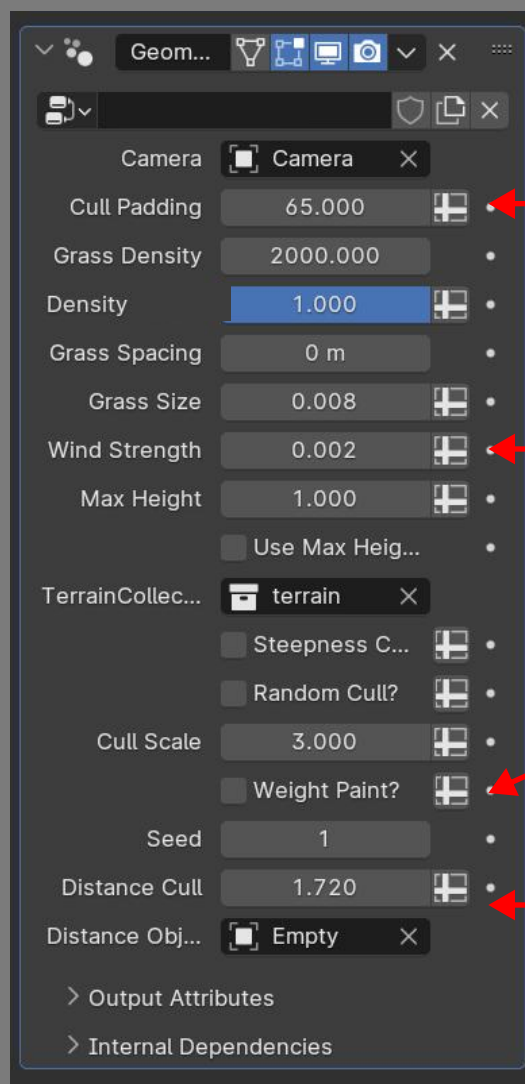
Can I scatter more than just trees?

Yes! Just be aware that you will need to uncheck 'Align to Camera' in the modifier.

TurboGrass



I've included a bonus small modifier called 'TurboGrass'. This can populate your terrain with a quick and dirty patch of grass. It has similar controls to 'TurboTrees', but with the added option of cull by distance. This performs well in Eevee, for Cycles remember to increase the 'Transparency Path's as mentioned in page 10.



Place your camera, this will be used only for camera culling.

They can be animated similarly to 'TurboTrees'. Simply set this to 0 for static grass.

It can also read weight paint data, just like 'TurboTrees' name your weight paint group 'custom'.

This can call the grass patches based on distance. It's not a gradual falloff so its best used to only exclude far distances. I recommend using a empty plain axis as your *Distance object*