# DOCUMENTATION
# HANDPAINTED FOREST PACK

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## WHY THIS PACKAGE ?

There are many independent game developers worldwide who develop games and have a lot of great ideas ! But they don't necessarily have a budget to work full time with a graphic designer or the time to do graphic visuals themselves. So it penalizes their games, what is a pity. This is where I come in.

This package is intended for independent professional or amateur developers in Video Games. I want to allow them to build their environment as they wish with my assets to dress their games.

They are **optimized for pc** and **customizable.**

## DATA

With this package you can build your forests as you wish.

All the 3D elements are in **fbx**, and developed from Blender.

The texture is in **png**, and developed from Krita.

Each 3D element has a collider except for very small objects (flowers and mushrooms).

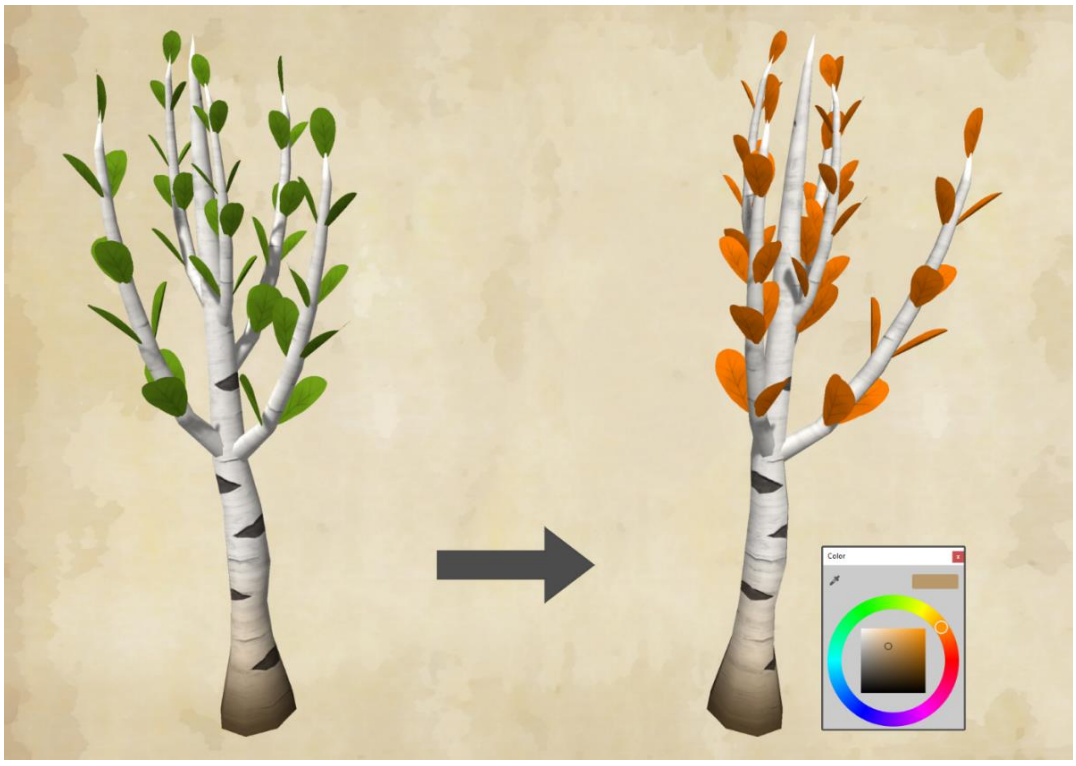
Pixel ratio is 1 unit = 256 px so that the quality of textures is homogenized.

## CUSTOMIZATION

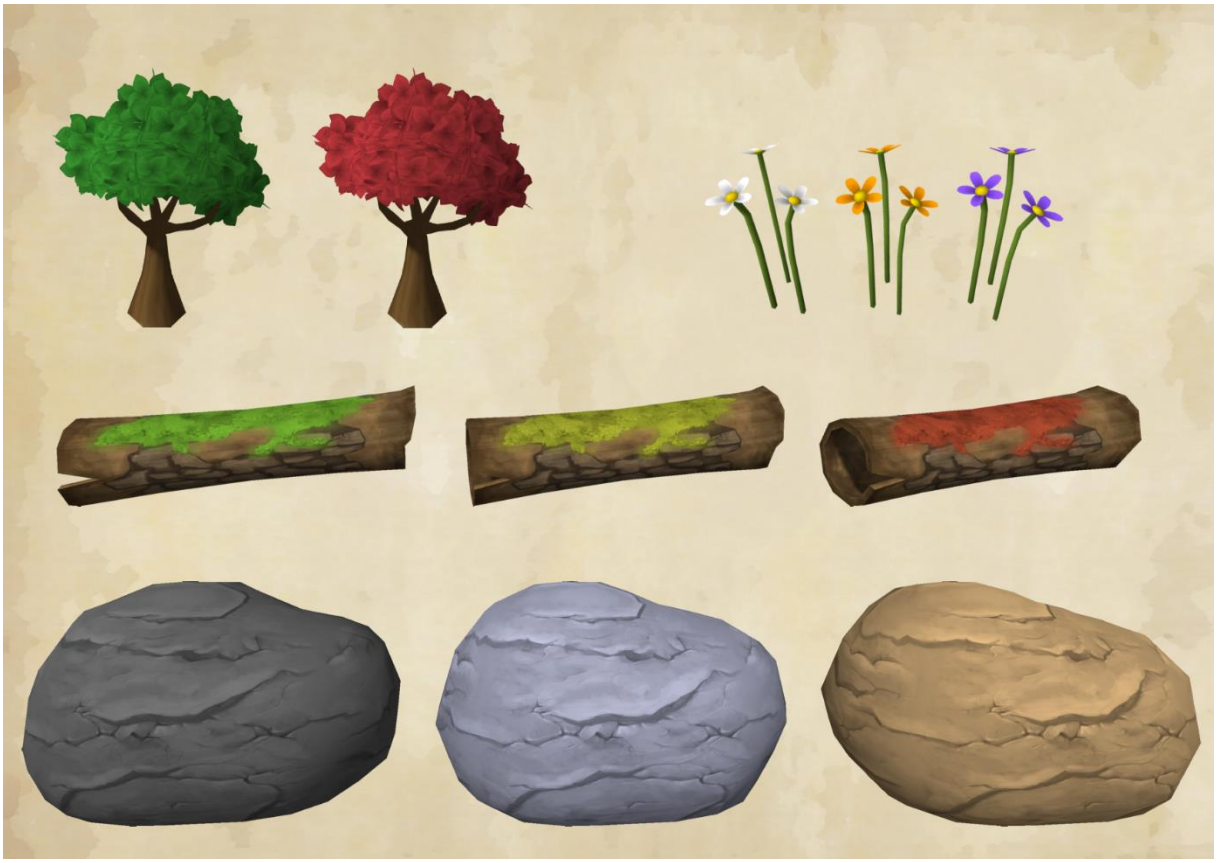
There are two ways of customizing assets.

### BY COLOR

Customizable elements by color: foliage, moss, bushes, ferns, flowers and rocks.

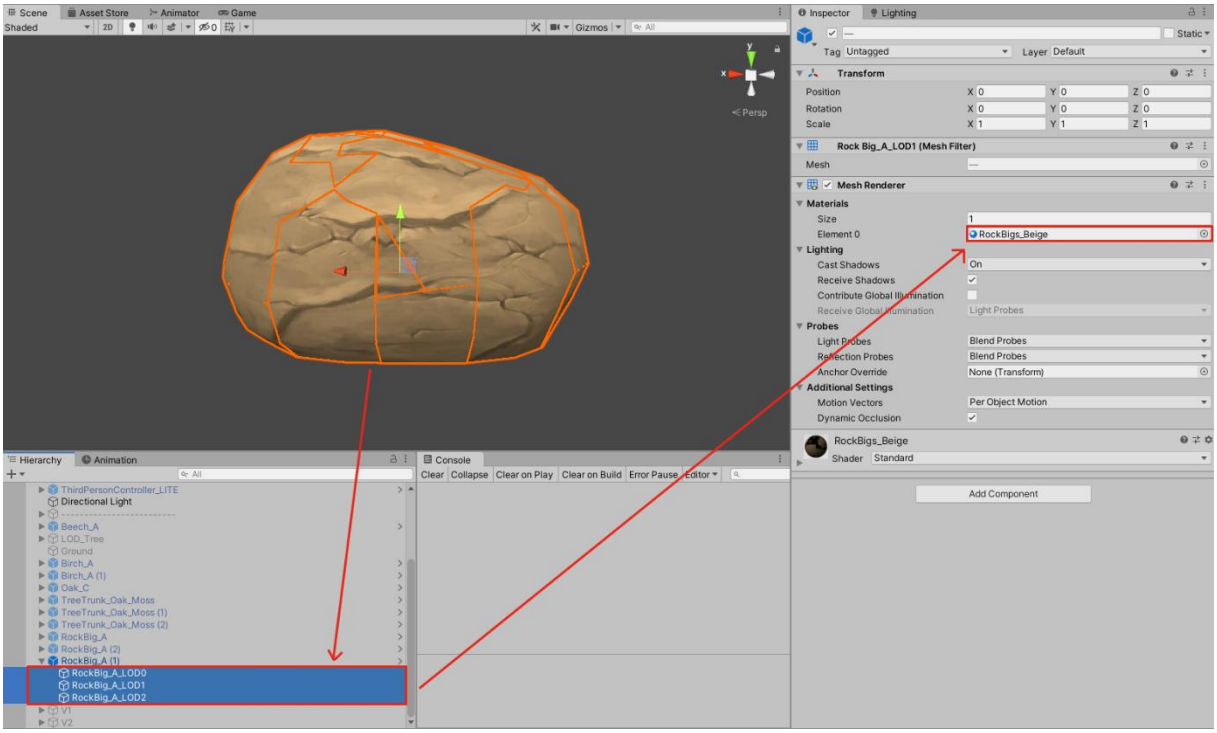


Some examples of elements you can customize :



## ! NOTE !

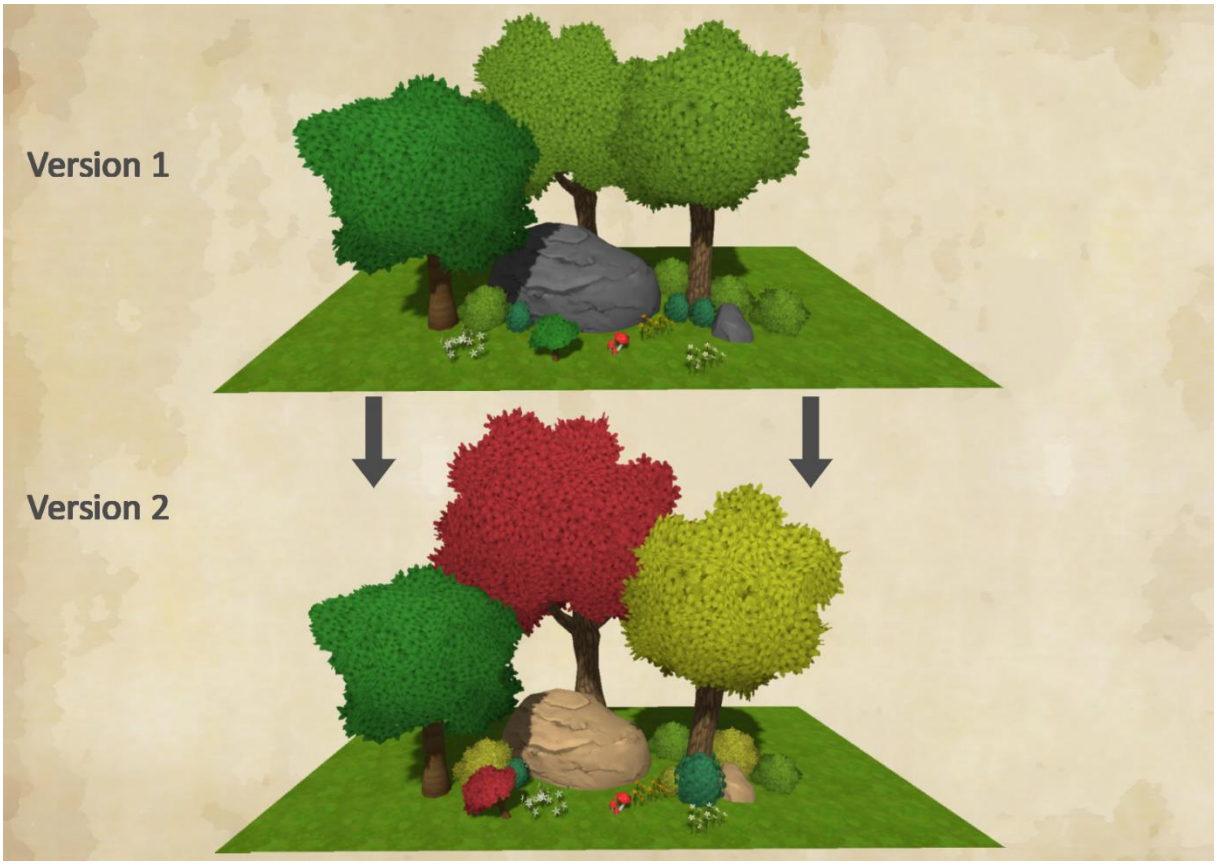
When you change the material of an asset in order to change the color, **you must apply it** on the 3 models of LOD which constitutes this asset.



## BY MODIFYING SCALE AND ROTATES

By modifying scale and rotates of your assets you create variety.

From a base, you can create variety by changing the colors, the scale, the directions and the atmosphere via the post-processes. **You have the choice**.



## OPTIMIZATION

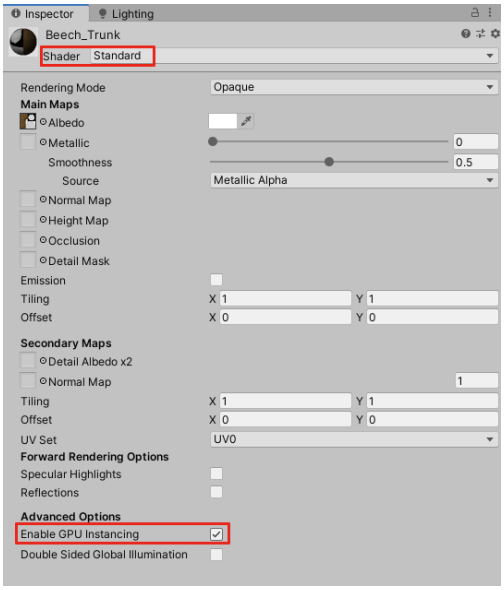
All assets are **optimized for pc.**

### VIA ATLAS OF TEXTURES

The textures are thought in atlas (= grouping of textures). Here is an example of a texture of 2048 pixels by 2048 pixels which is used for 23 assets.

### VIA MATERIALS

By using the **shader standard** and by enabling the option **"Enable GPU instancing"**, you activate the instantiation of materials.




This option reduces the number of draw calls.

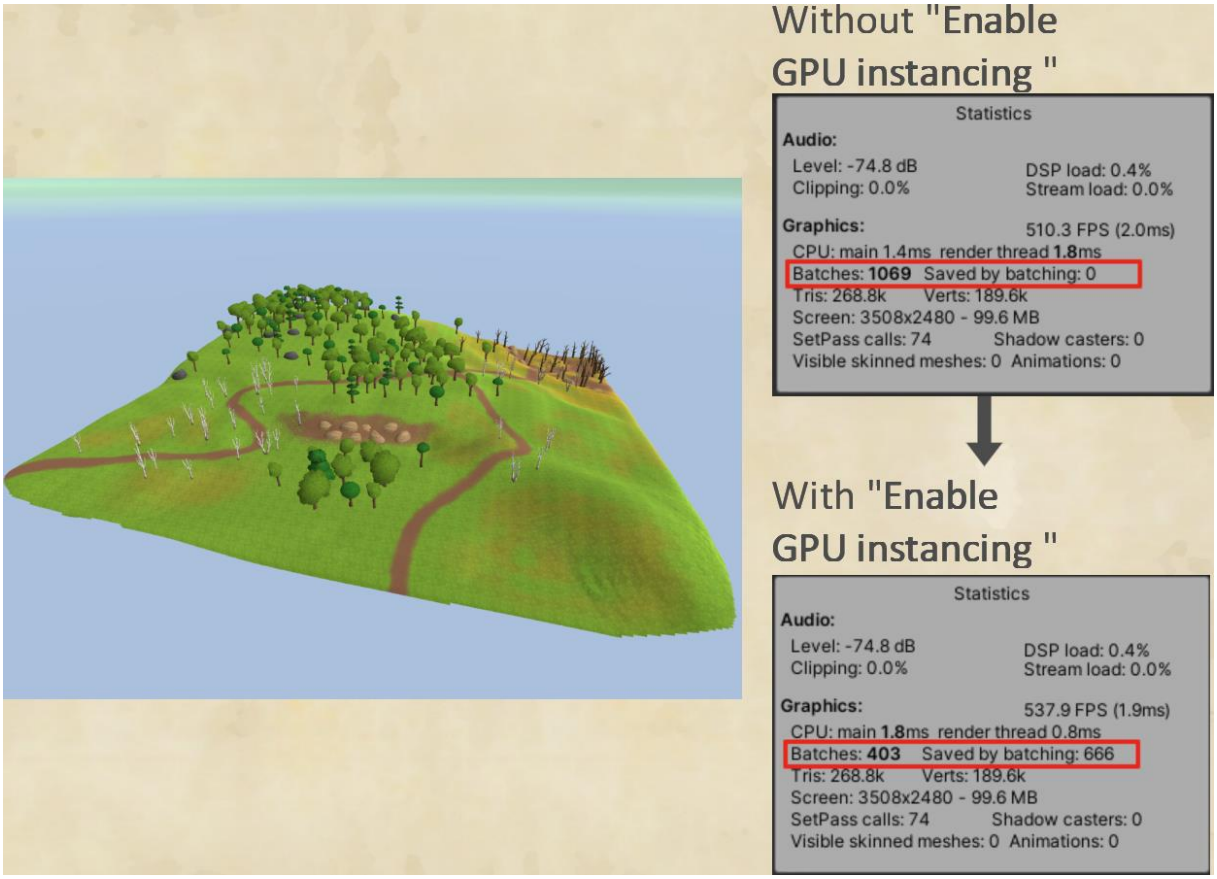
**! GLOSSARY !**

**Draw calls** = Refers to each element submitted for rendering. A draw call is your CPU asking your GPU to draw something.

**Batches** = often described as a draw call.

**Saved by batching** = Number of batches combined.

**SetPass calls =** Refers to the configuration of the material.

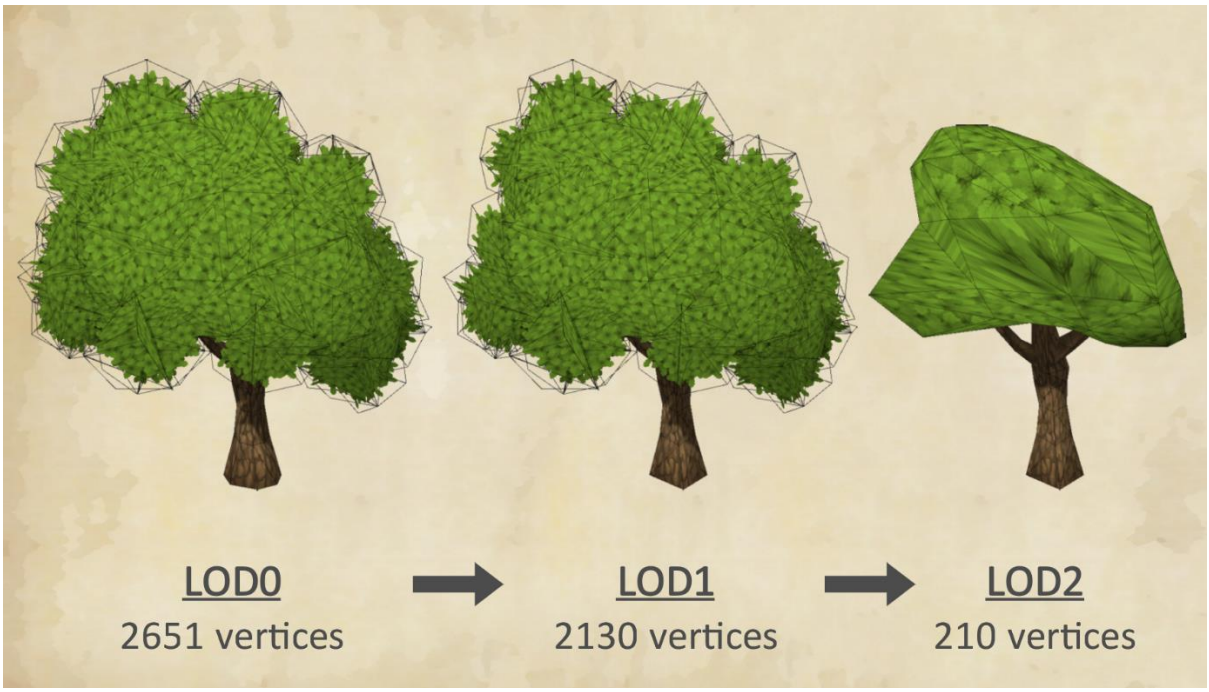



On the demo scene (above), the batches have decreased, and the "**Saved by batching**" have increased. The scene therefore saves 666 batches thanks to the materials authorities. Quite convenient !

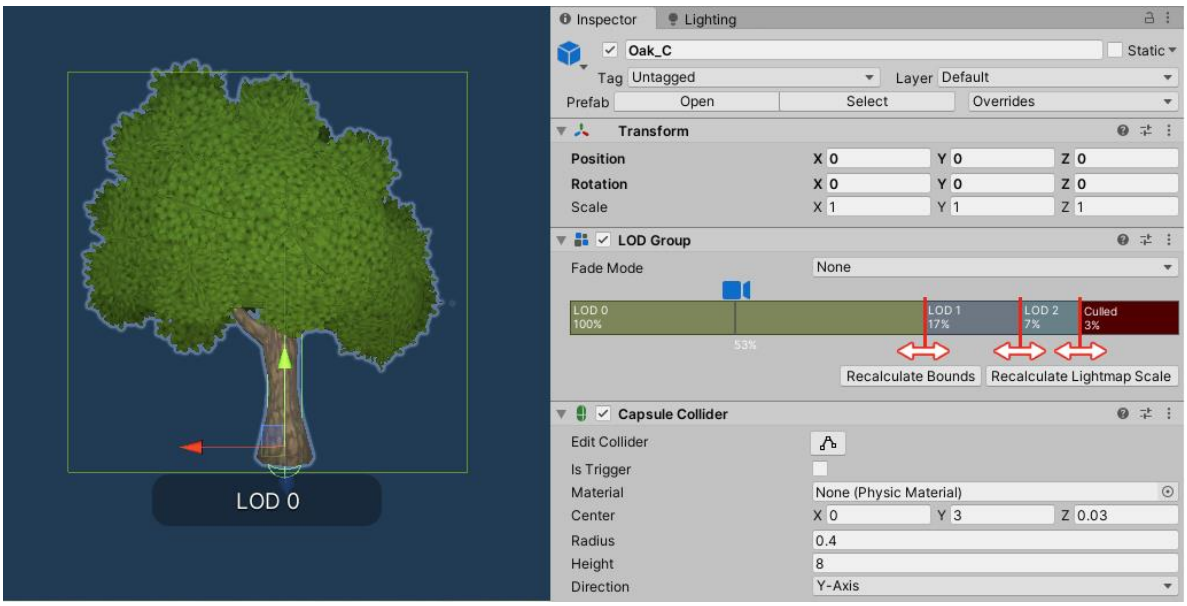
## VIA LOD (LEVEL OF DETAIL)

All the 3D assets of the package have their **LODs**. It allows to:

- Reduce the details of the 3D assets. The further away the asset is from the camera, the less detail it shows.
- Reduce rendering calculations by the graphics card. The more you reduce your scene, the faster it is calculated.




You can **easily adjust the LOD settings**. So you can choose how far from your camera the model start changing, and then disappears:



## GRASS TO BE PAINTED ON THE GROUND OF UNITY

You can paint the planned grass. Here you find their configuration

Edit Grass Texture

| | |
|---|---|
| Script | DetailTextureWizard |
| Detail Texture | Grass_1 |
| Min Width | 0.5 |
| Max Width | 1 |
| Min Height | 0.5 |
| Max Height | 0.8 |
| Noise Spread | 0.1 |
| Healthy Color | |
| Dry Color | |
| Billboard | |

#8BC242

#74A637

Edit Grass Texture

| | |
|---|---|
| Script | DetailTextureWizard |
| Detail Texture | Grass_1 |
| Min Width | 0.5 |
| Max Width | 1 |
| Min Height | 0.25 |
| Max Height | 0.8 |
| Noise Spread | 0.1 |
| Healthy Color | |
| Dry Color | |
| Billboard | |

#C9C024

#C17C1A

Edit Grass Texture

| | |
|---|---|
| Script | DetailTextureWizard |
| Detail Texture | Grass_2 |
| Min Width | 0.5 |
| Max Width | 1 |
| Min Height | 0.5 |
| Max Height | 1 |
| Noise Spread | 0.1 |
| Healthy Color | |
| Dry Color | |
| Billboard | |

#8BC242

#5CA637

Edit Grass Texture

| | |
|---|---|
| Script | DetailTextureWizard |
| Detail Texture | Grass_3 |
| Min Width | 0.5 |
| Max Width | 1 |
| Min Height | 0.5 |
| Max Height | 1 |
| Noise Spread | 0.1 |
| Healthy Color | |
| Dry Color | |
| Billboard | |

#479834

#2E8942

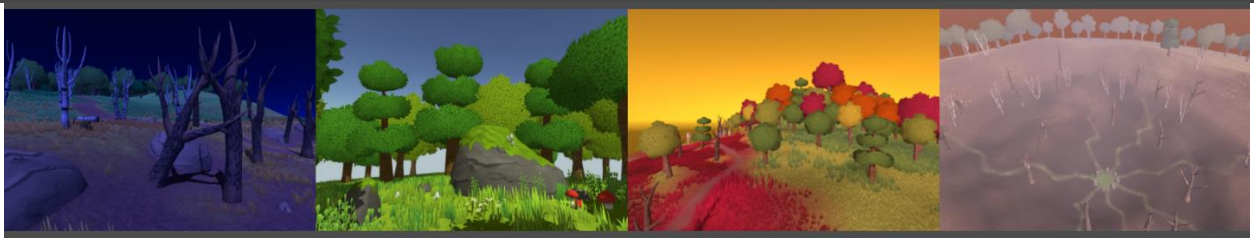
Edit Grass Texture

| | |
|---|---|
| Script | DetailTextureWizard |
| Detail Texture | Grass_4 |
| Min Width | 0.5 |
| Max Width | 1.5 |
| Min Height | 0.5 |
| Max Height | 2 |
| Noise Spread | 0.2 |
| Healthy Color | |
| Dry Color | |
| Billboard | |

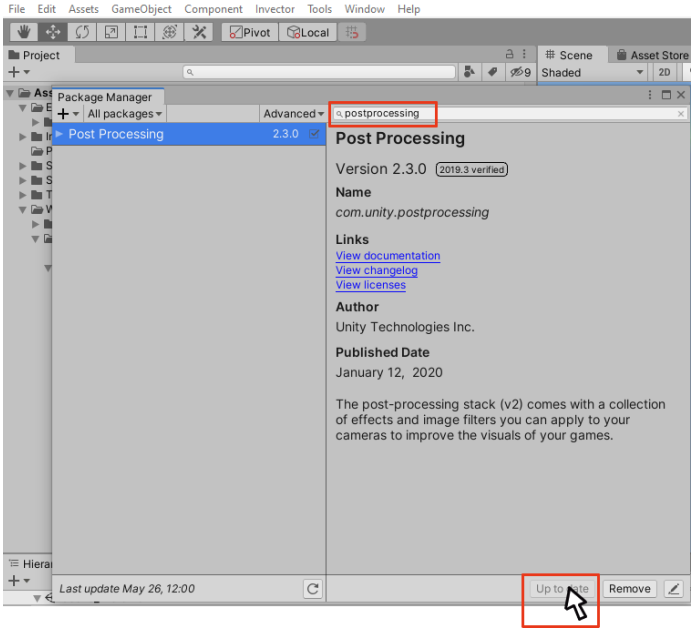
#74AF47

#3E8635

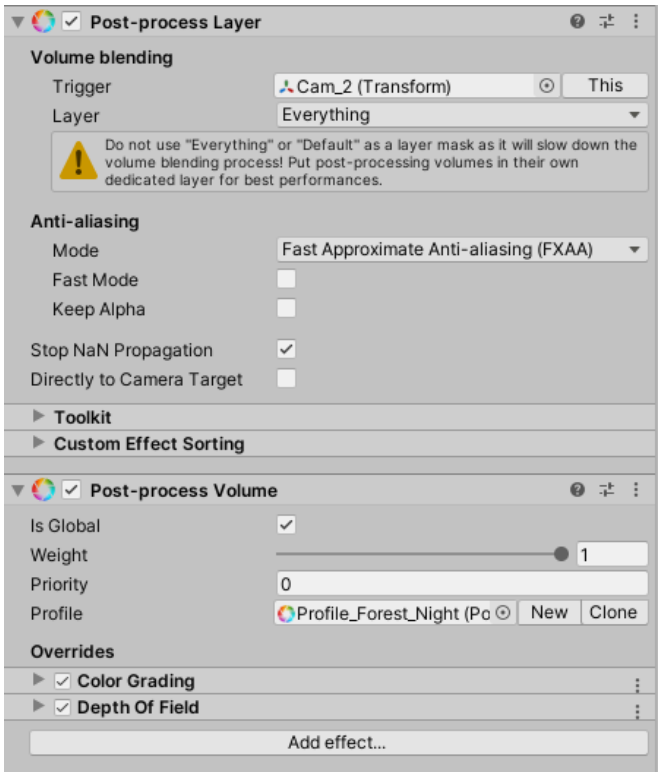
## POST-PROCESS



I used **Post Processing 2.3.0** from Unity. You can find it in the settings: **Windows > Package Manager** and type « **Post processing** » in the search bar and install it:




Then, on the camera, you have to add **Post-Process Layer** and **Post-Process Volume** and modify the setting of your choice:



## VFXS

In the **_Prefabs** folder you have all the **ready-to-use prefabs**, including a **VFXs** folder.

For the **Butterfly_Blue** prefab, you just need to drag & drop it in your scene. The blue butterfly will flap its wings and move thanks to its animation in space.

### ! EXPLANATION !

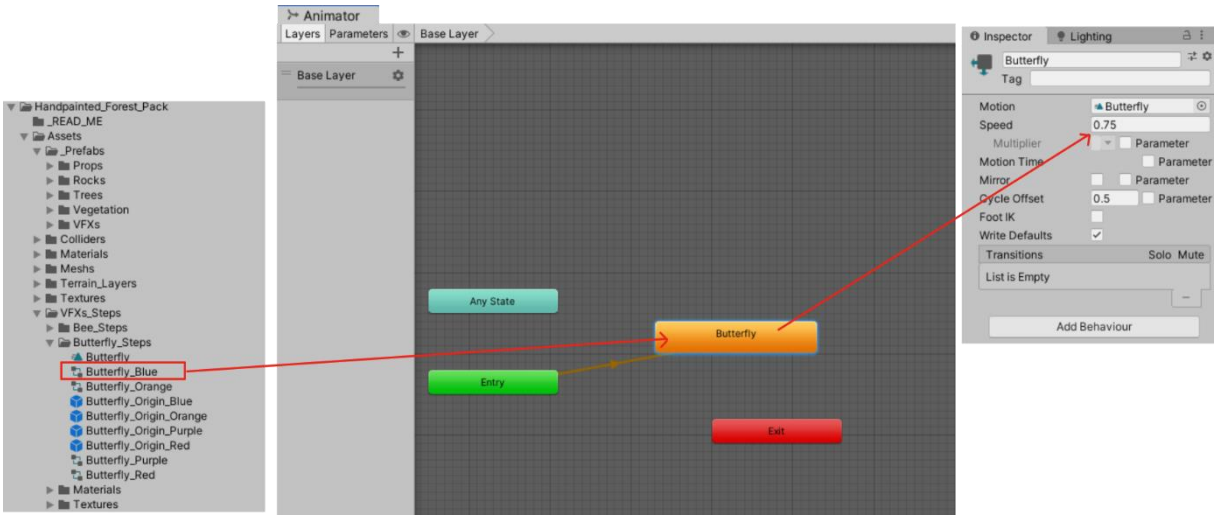
The **VFXs_Steps** folder contains all needed elements to reach the ready to use prefabs.

For example, **Butterfly_ Origin_Blue** corresponds to a butterfly that flaps its wings on the spot: it is just the animated particle.

The **Butterfly_Blue** prefab also contains the movement animation of the butterfly. This method allows you to position your butterfly on the scene, which will move accordingly to this position.

## CUSTOMIZATION

You can **easily change the** butterfly **movement speed** and **the animation play direction** in the animators by modifying the **Speed**.




A **Speed** at 1 = normal speed

A positive **Speed** = normal play direction

A negative **Speed** = reverse play direction

0 < **Speed** < 1 = slow speed

**Speed** > 1 = accelerated speed

## CLASSICAL DAY FOREST

CLASSICAL NIGHT FOREST

FANTASY FOREST

MEMORY FOREST

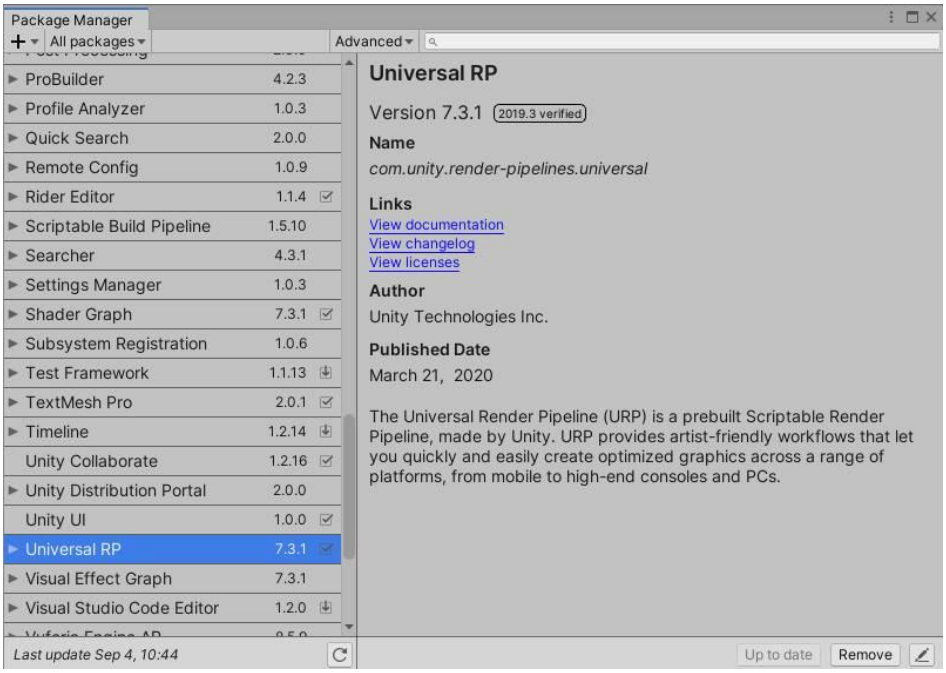
As you can see, **with this package, you can create a great variety of forests**. I hope you are convinced of its potential.

## UNIVERSAL RENDER PIPELINE

The assets are compatible with the **Universal Render Pipeline (URP)**. Here is the procedure to convert them properly.

### 1 - CHECK THAT THE « UNIVERSAL RP » IS WELL INSTALLED

Go to "**Window > Package Manager > Universal RP**".




### 2 - IMPORT HANDPAINTED FOREST PACK

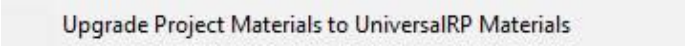
Opens the "**Scene of Exhibition**". Everything is pink, it's normal.

### 3 - THE CONVERSION

It is necessary to convert **standard** shaders and **Tree Creator Leaves** into URP supported shaders.

1- Select all the materials, except those of the skybox, and choose the **standard shader**.

2- Go to "**Edit > Render Pipeline > Universal Render Pipeline > Update Project Materials to Universal RP Materials**".



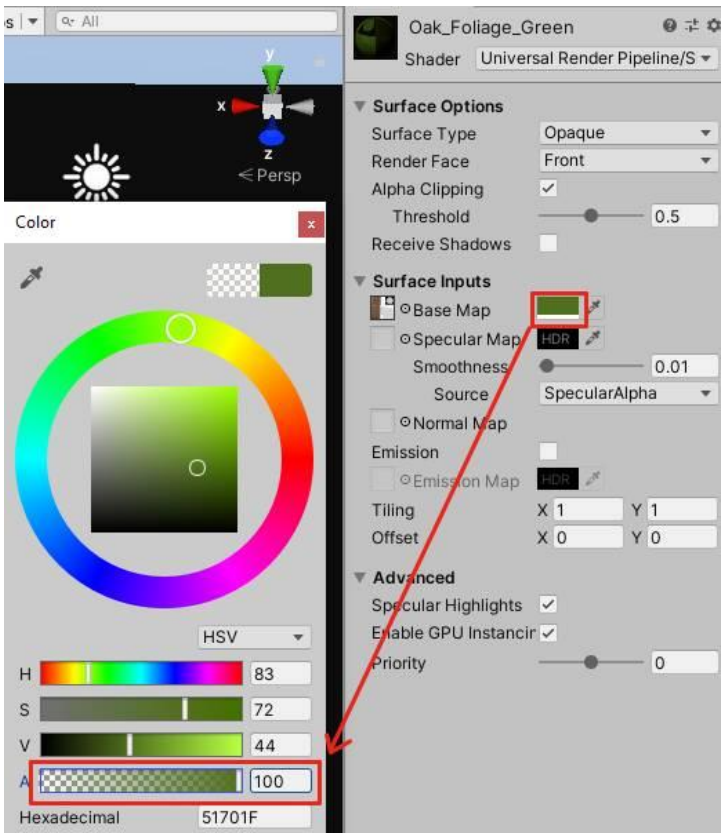

3- There are still some manual adjustments to be made:

- Select all the materials, except those of the skybox, and choose "**Universal Render Pipeline / Simple Lit**" and put the **specular** in black. Compared to my graphic style, it's a choice that I advise you to make, but you do what you want.

- **Set the alphas.** Select all materials with "**Moss**", "**Foliage**", **bushes A, B, C, C_Dead, Fern and Fern_Dead** and check "**Clipping alpha**".

## 4 - I HAVE SAVED AND THE FOLIAGE AND BUSHES HAVE DISAPPEARED!!!

Don't panic. Select one by one all the materials that are no longer displayed and make sure you don't have any alpha in the **Base Map**. The material will be displayed again.




If you encounter a problem do not hesitate to contact me. I also recommend the [UGuruz] video on the subject.

## 5 - INFORMATIONS

Post-processing is not managed in the same way between **Built-in Render** and **URP**. So the 4 ambiances of the demo scenes don't work. They are examples of what can be done with **Handpainted Forest Pack**. I invite you to directly create the ambiences you need for your game.

## CONCLUSION

**Thank you for trusting me in purchasing this package!**

Should you have any question, suggestions or encounter difficulties, contact me : **contact@latelierdetaryne-aly.com**

I will answer you as soon as I can 😉

My priority is to deliver a user-friendly package which allows developers to create their games easily.

I would be glad to see **Handpainted Forest Pack** used in your game, do not hesitate to send me a mail ! On Twitter show me your creations with **Handpainted Forest Pack**, I could retweet them on my side.

**Please leave a review or rate the package if you find it useful!**

**https://www.latelierdetaryne-aly.com**

**https://www.instagram.com/taryne_aly/**

**https://twitter.com/TaryneAly**