Advanced Terrain Grass HDRP Preview

The associated unitypackage adds basic support for HDRP 10+ by adding compatible shaders.

The shaders are authored using Shader Graph and thus suffer from some shortcomings like missing custom vertex to fragment interpolators. For this reason they do not support texture arrays.

Touch Bending as in URP is not supported.

Requirements

- Unity 2020.1 or higher (developed using 2020.3.11f1)
- HDRP 10 (developed using 10.5.0)

Getting started

After having installed the package you will find a new folder "HDRP" inside the "AdvancedTerrainGrass" folder which contains the shaders as well as the "Demo HDRP" scene. In order to jump right into it I recommend opening the demo first which comes with a fully configured terrain.

If you open the demo you will notice that the terrain is covered with white shapes – simply because HDRP has no default grass shader. This will change when you enter play mode and ATG takes over the rendering.

But before you do so you have to "fix" rendering and add or assign a valid Diffusion Profile:

As the grass and foliage shaders use HDRP's transmissive lighting you have to make sure that the assigned **Diffusion Profile** is added to your **Pipeline Settings**. Do so by editing one of the grass or foliage materials and hit the "Fix" button. Of course you can tweak the profile or assign your own. *If the used Diffusion Profile is not added to your Pipeline Settings grass and foliage will get a strange greenish tint.*

Now you are ready to enter play mode.

Updating to HDRP

- In case you update your project to HDRP you have to assign the HDRP shaders manually to your materials.

- Please note that HDRP's transmissive lighting uses *Thickness* not *Translucency*. So you have to invert the translucency channel in your textures and most likely tweak it to fit the used *Diffusion Profile*.

- Simple grass materials with just an Albedo Alpha texture are not supported. You have to provide a proper "Thickness and Smoothness" texture – or assign the "ATGdefaultNTS" texture.

- The HDRP grass shader handles normals differently

Shaders

Channel packing of the textures is as close to the one used in the standard rende pipeline as possible. But as the shaders use Shader Graph you can easily change it to whatever you like to support more features, get better compression quality or just make it fit your project.

Only differences to the standard shaders will be handled here.

Grass HDRP

Thickness (R) Smoothness (B) HDRP's transmissive lighting uses *Thickness* not *Translucency.* So you have to invert the translucency channel in your textures and most likely tweak it to fit the used *Diffusion Profile*.

Wind Strength Main (X) Jitter (Y) Phase (Z) X and Y are multipliers as described in the original documentation. Z takes the Phase baked into vertex color red and offsets the wind sampling position accordingly. This lets you create variation in bending even within a single grass instance.

Normal to UpNormal The HDRP grass shader does not tweak the grass' per vertex normals automatically but lets you play around with various settings. You can use the shaders "Normal Mode" to adjust these. And use *Normal to UpNormal* to make the per vertex normal always point upwards.

Scale Mode XZ only Maps the enum Scale Mode XYZ or XZ into Shader Graph space. If checked the shader will shrink the instances only along the XZ axis.

Diffusion Profile Here you have to assign a regular HDRP diffusion profile.

Foliage HDRP

Normal (GA) Thickness(R) Smoothness(B) HDRP's transmissive lighting uses *Thickness* not *Translucency.* So you have to invert the translucency channel in your textures and most likely tweak it to fit the used *Diffusion Profile*.

Stretchiness If 0.0 the shader will keep the original "length" of the vertex position in object space while when set to 1.0 it will stretch the vertices.