MICRO BIOMES - DEEP DESERT

By Procedural Worlds

The "Micro Biome - Deep Desert" is a collection of ground textures, rocks and plants models to create a stylised desert environment in Unity.

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About Procedural Worlds

Powerful, simple, beautiful. Friendly tools, gorgeous games!

Procedural Worlds empowers artists and developers to bring their vision to life by making it easy to create beautiful worlds. Leverage the latest procedural generation techniques to take the pain out of creating stunning environments and focus on creating amazing games.

The only end to end environmental generation and delivery suite:

Gaia Pro 2021 - A world generation system for creating, texturing, planting and populating scenes from low poly mobile, VR and through to high end desktop.

GeNa Pro - A sophisticated localised level design tool that augments Gaia's broad-brush strokes, by working intuitively to give fine grained control.

SECTR - A suite of performance-enhancing tools that enable open world streaming, massive mobile games and includes the latest techniques in audio occlusion and propagation.

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Spawner Packs – You can save time by using our pre-configured Procedural Worlds Spawner packs (PWS). The packs contain configurations for our tools Gaia and GeNa, and are designed to work with popular asset packs from the Unity Asset Store. Currently available:

PWS – POLYGON Fantasy Kingdom - Spawner Pack
PWS – POLYGON Nature - Spawner Pack
PWS – SUNTAIL Fantasy Village – Spawner Pack

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Introduction

Thanks for purchasing Micro Biomes – Deep Desert!

This pack is a collection of ground textures, rocks and plants models to create a stylised desert environment in Unity. The pack comes prepared with settings for Gaia and GeNa so that you can create new scenes quickly with the procedural worlds tools.

The pack comes in two different styles: "Stylised" and "Detailed". The latter is still a stylised artstyle, but has more detail to the assets and the ground textures.

NOTE: This document will provide some advice on how to start, however for a more detailed understanding of Gaia Pro / Gaia Pro 2021, and GeNa Pro you can read the documentation provided with them and check out the tutorials at [Product Tutorials | Procedural Worlds (procedural-worlds.com)](#).

Prerequisites

The pack can be used in Unity 2020.3 or higher without any additional requirements being installed. It is compatible with all render pipelines (Please see "SRP Compatibility" below for more detailed infos and gotchas when using URP / HDRP)
It is strongly recommended (although not required) to install the Post Processing package and use linear color space & deferred rendering when using the built-in rendering pipeline.

The pack comes with premade settings for Gaia and GeNa. The Gaia Biome settings will allow you to quickly apply the assets from this pack across an entire landscape (or smaller area on the terrain) in an automated fashion. The GeNa spawners will allow you to quickly spawn the assets in a semi-automatic fashion for better creative control. To use the settings for those tools, the tools in question would need to be installed in the project of course.

Installation

The package installs itself in the directory

Assets\Procedural Worlds\Content Packs\Deep Desert

In there you can find the following subfolders that contain the contents of the pack:

Content Resources - Contains the Models, Textures, Prefabs, Materials, etc. that build the foundation for this pack

Demo - Contains Demo scenes that allow you to quickly evaluate the assets in this pack.

Gaia - Contains Gaia Biomes and SRP compatibility packs and lighting settings when using Gaia.

GeNa - Contains readymade GeNa spawners for the assets included in this pack.

Scripts - Contains scripts used in this package. This folder can be empty as it contains an installation script that deletes itself after it has performed its actions.

Demo Scenes

In the "Demo" folder you can find 3 demo scenes, made for the built-in render pipeline:
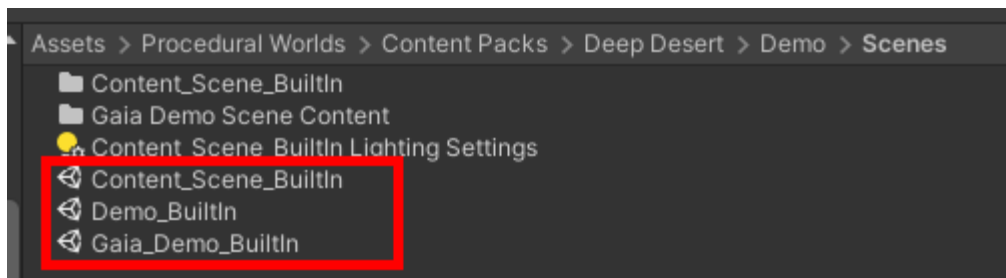
Content_Scene_Builtin: Contains all assets in the pack in an overview scene
Demo_BuiltIn: Contains a scene built without dependencies to Gaia
Gaia_Demo_Builtin: A scene built using Gaia

SRP Compatibility (& Wind support)

After the installation, the pack only uses unity standard shaders on the included assets. This means you can easily convert the included materials to the respective pipeline with the material conversion process of URP / HDRP. To do so, select the materials for this pack found in the folder

Content Resources\Materials

and run the material conversion process for the selected materials.
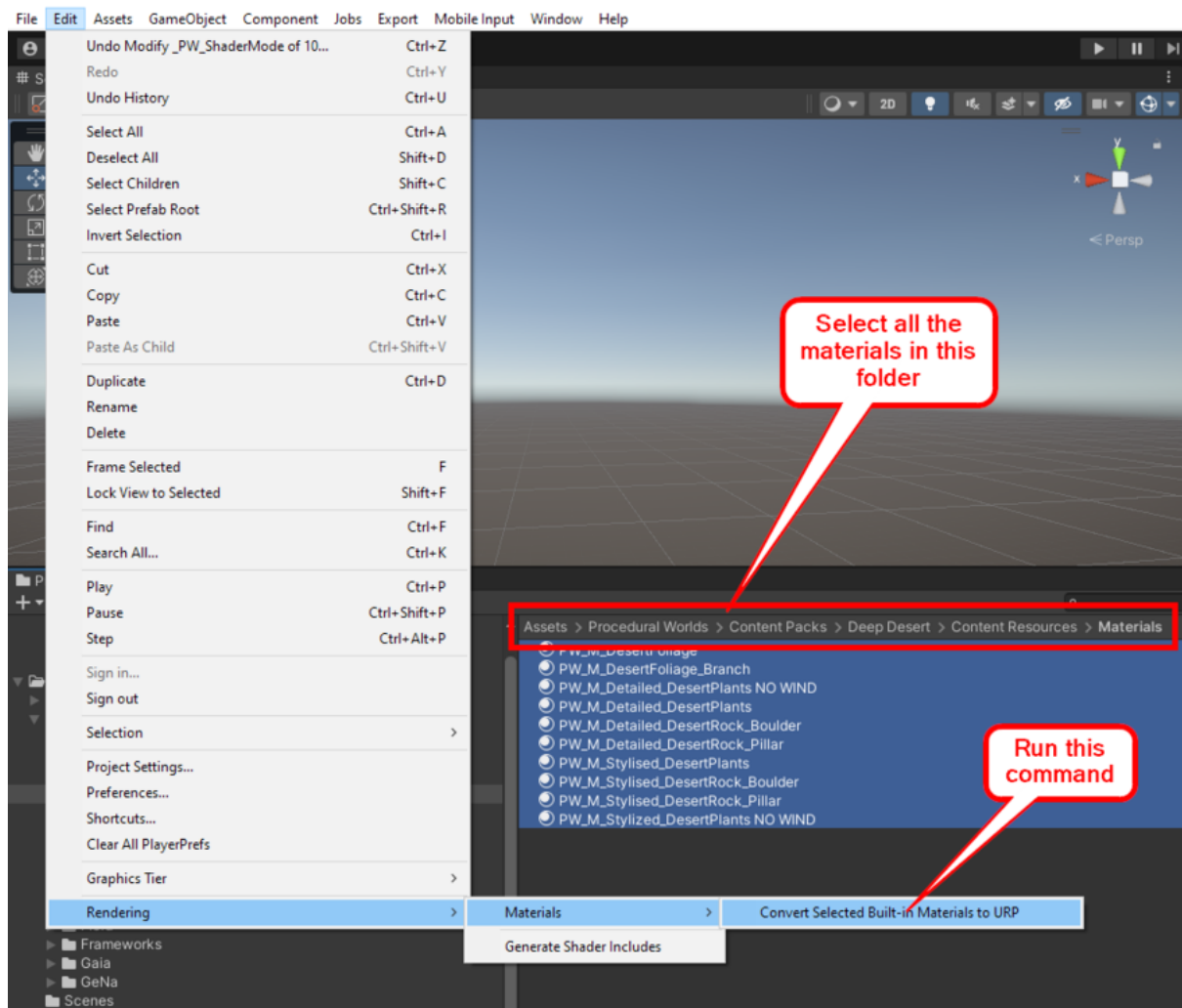
If you are using Gaia in your project, you can instead install the SRP compatibility packs found in the "Gaia\Gaia SRP Support" folder:
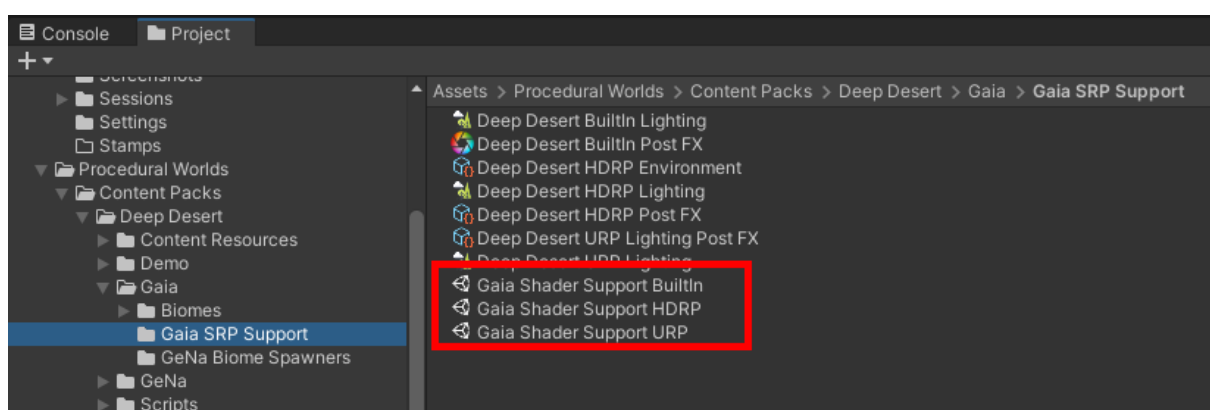
Double click on those to install the correct package for the pipeline you are using. This will update the assets / materials automatically with the correct Gaia shaders for that package. Since the Gaia shaders support wind movement, this will also enable wind movement on the assets (where appropiate). If you want wind in the built-in pipeline, you can therefore install the builtin shader support package to get wind enabled if you have

Gaia installed in the project.

Please note that this folder also contains Lighting Profiles for the 3 pipelines - the default Gaia Lighting was made for rather dark terrain textures, so you can instead load in these lighting profiles here via the Gaia Lighting object in the scene.

Usage

Using the assets manually

The assets in this pack can be used manually like any other unity assets. Under "Content Resources\Terrain Layers" you can find terrain layers containing the textures in the pack - add those to the unity terrain object to paint them on with the terrain inspector.
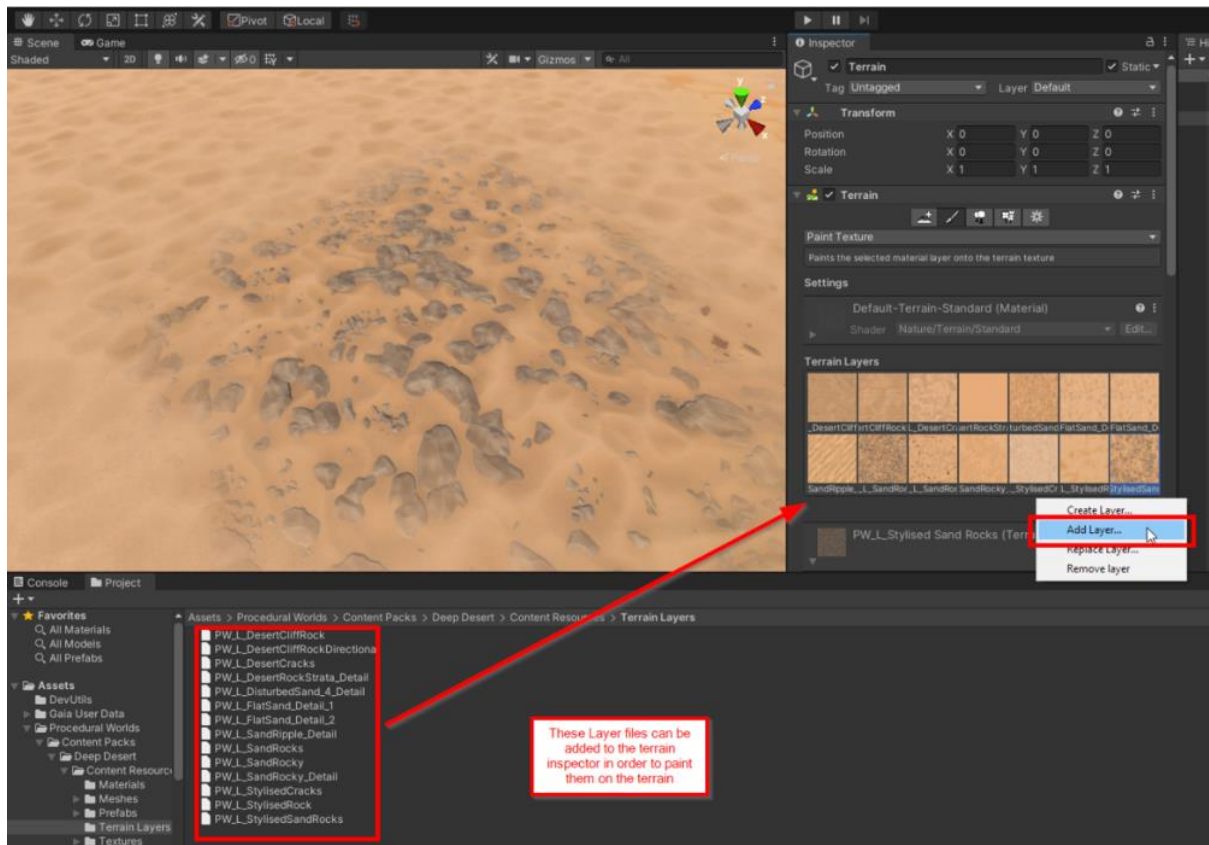
In the folder "Content Resources\Prefabs" you can find rock and plants assets that can be dragged in the scene view like any other prefab. Note that for most of those a "stylised" and a more "detailed" variant exists.
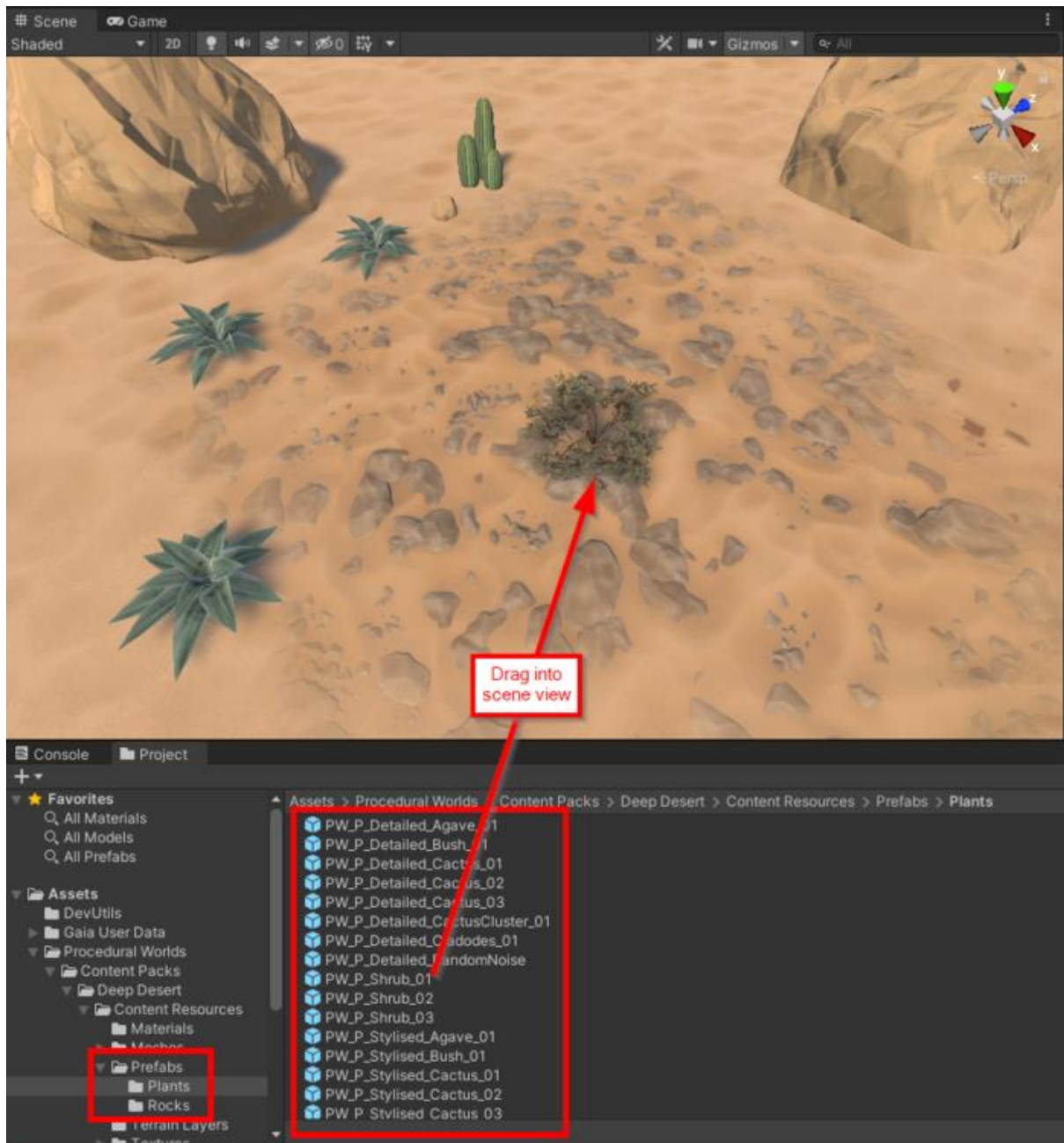
Pro Tip 1: These prefabs can also be used with the unity terrain tree system - especially when rendering a lot of those you can gain some performance advantage while sacrificing more detailed control over the spawned items.

Pro Tip 2: In the folder "GeNa/Layouts" you can find pre-assembled rock layouts for the use in GeNa spawners. You can still drag those in the scene for manual usage as well.

Using the Gaia Biomes / Spawners

In the folder "Gaia\Biomes" you can find two biome presets:
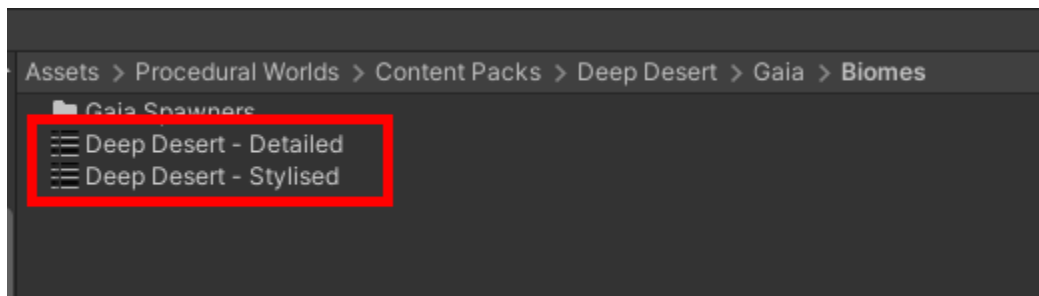
You can add these biomes to the scene and spawn them with the "Add Biome to the Scene" Button visible in the inspector when selecting one of the presets.
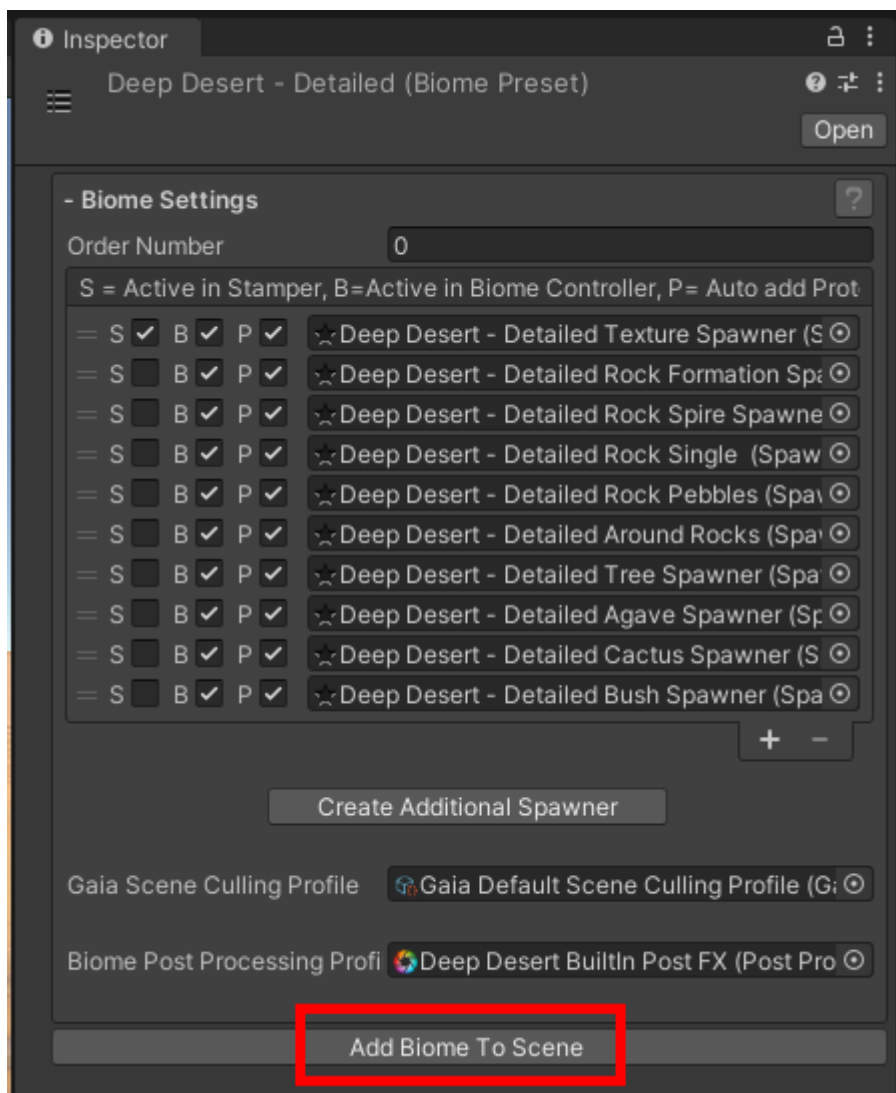
These biome presets will also appear in the Gaia Manager automatically after the installation of the Deep Desert package. (if Gaia is installed afterwards it will pick the biome

up as well during the maintenance process.) This means you can directly select these biomes to work with when creating a new world from the Gaia Manager.
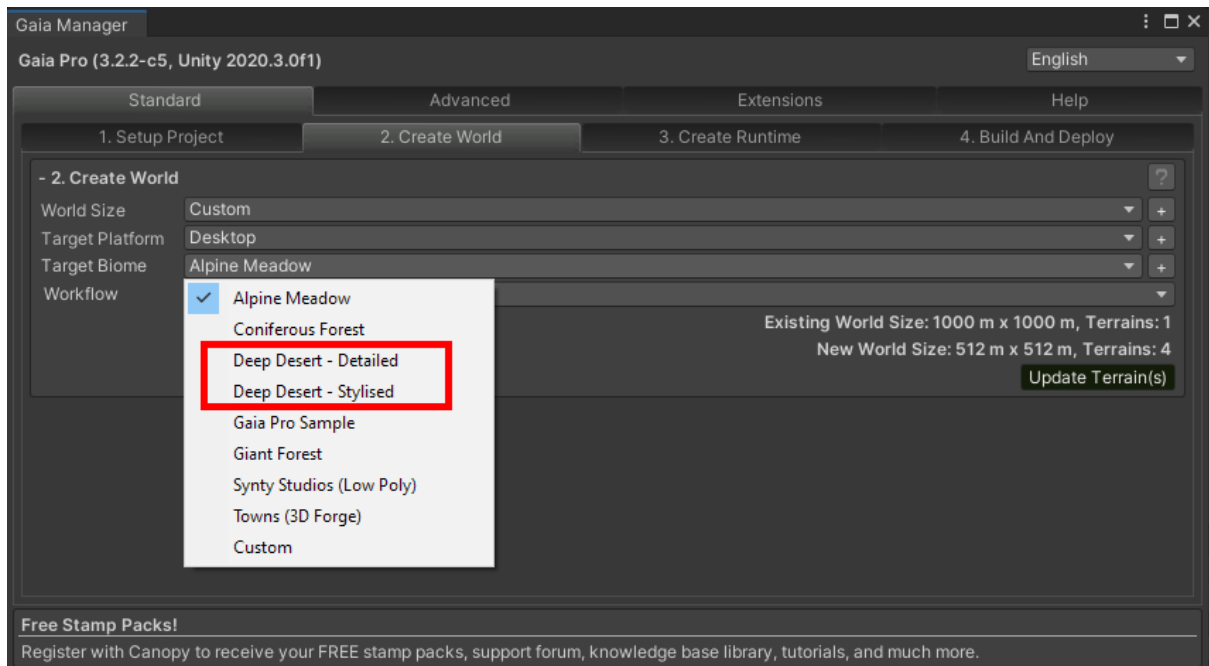
You can spawn the biomes the same way like you would with any other biome in Gaia. The two biomes are slightly different in style and use two different sets of assets, here is an example of the detailed biome:

And this is a shot of the stylised one:

The difference is most noticeable on the rock assets and the terrain texturing on the mountains:

Pro Tip: The stylised biome fits better on terrains with lower terrain heightmap resolution values, try to set the terrain heightmap resolution to half the size of your terrain.

Please Note 1: The default lighting of Gaia when setting up runtime from the Gaia Manager is not entirely suitable for this biome as it was originally designed for darker textures. For example daytime lighting will look to bright, plus you would rather not see any clouds over a desert either since it is a very dry area.

We included a lighting setup that you can use when using the desert biome. You can load it in by selecting the Gaia Lighting object in the scene, and using the "Save / Load" functionality for the lighting profiles.
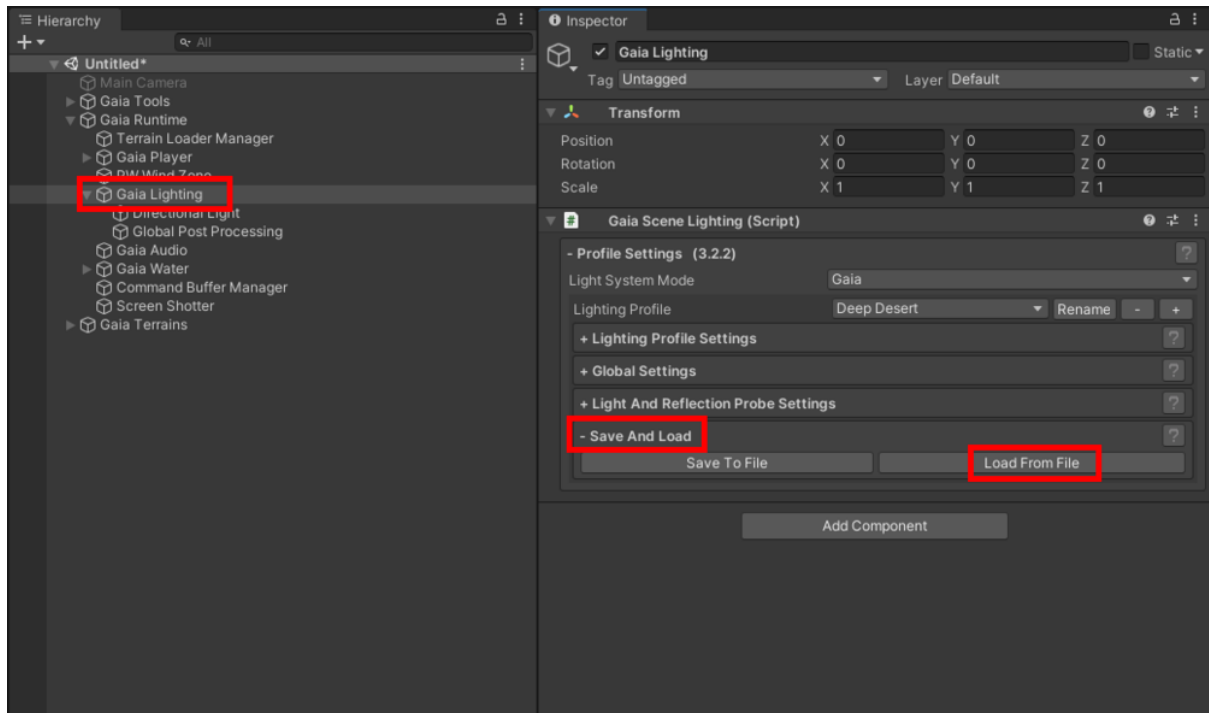
You can find the lighting profiles to load for the different pipelines under
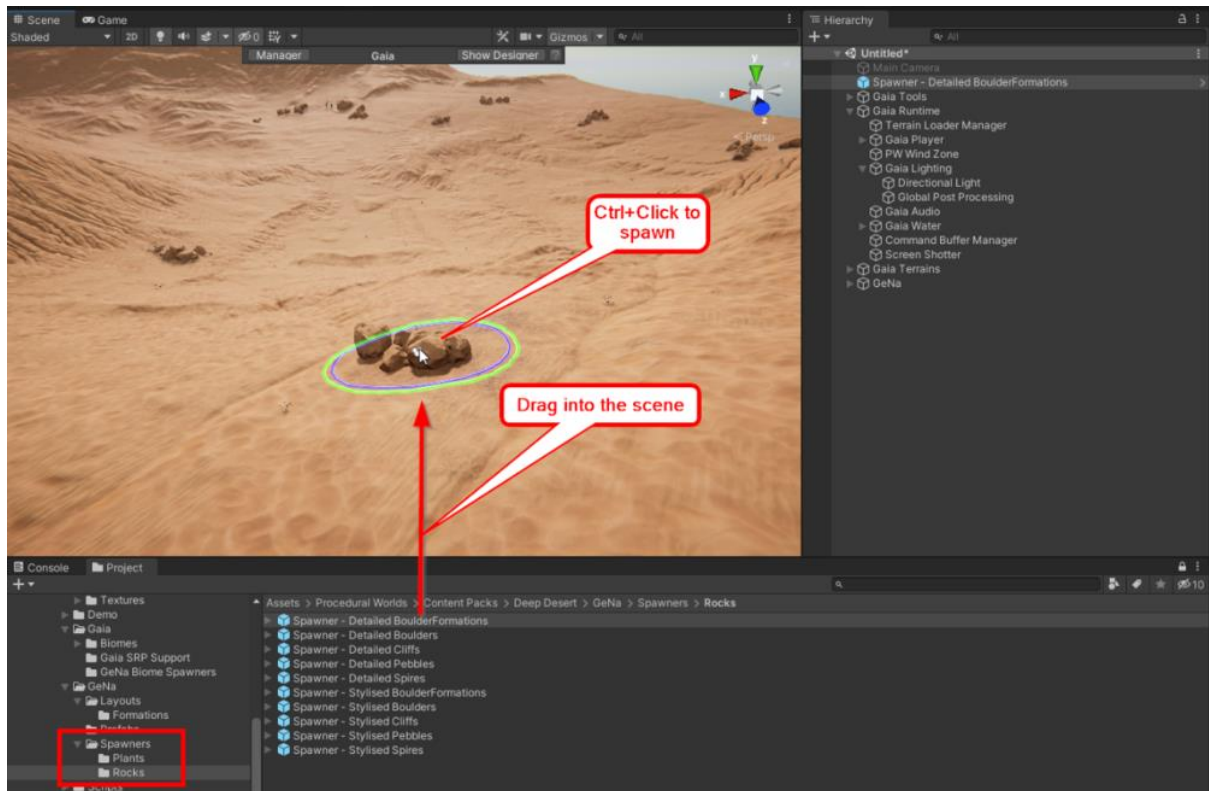
Gaia\Gaia SRP Support

Using the GeNa Spawners

When you have GeNa Pro installed in your project, you can also use the supplied GeNa spawners to generate your scene. To do so, simply drag the GeNa spawner prefabs found under

GeNa\Spawners

into your scene view window and spawn away.

Please Note: The GeNa spawners were created to support the two different styles "Detailed" and "Stylised", so you can find a detailed and stylised variant of each spawner.

Pro Tip: The GeNa spawners and Gaia spawners can be used alongside each other. If you e.g. want to 100% control where the rock formations appear on the terrain, use the GeNa spawners to spawn them in manually, then run the Gaia biome to automatically fill in the gaps.

Sample Screenshots
The following screenshots were taken in HDRP in scenes made with GeNa and Gaia: