

MYTHIC ENTERTAINMENT

**GUIDE TO CREATING SCENERY ART
FOR
WARHAMMER ONLINE**

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1 Overview

Purpose

This document is meant to outline the recommended techniques and processes that should be used when creating scenery art assets for Warhammer Online. The term scenery art refers to the textures and models used by a terrain artist to create the naturally occurring portion of the environment. You may be very familiar with making world art already, however making scenery art differs a bit and has its own set of special considerations. Follow the techniques in this document to allow your scenery art for Warhammer Online to be created easier and implemented efficiently while maintaining the art style already established in the game.

Scenery Art Assets

The scenery art in Warhammer Online is one of the most important parts of giving any particular region of the game its own unique personality. Because of this, the scenery art used in an area must be compelling and memorable. In order to accomplish these goals, it's imperative that any specific region uses unique and consistent art assets. Typically regions in Warhammer are divided into visually unique zones, but there can also be smaller areas inside of a zone with its own distinct visual appearance in order to give more variation.

Zone Packages

When approaching the creation of scenery art, it's important to compile a list of all the new assets required to make a region or zone look distinct. All of these parts must exist as unique assets: sharing assets from other packages is highly discouraged and should always be avoided. There are five basic types of scenery art used in Warhammer Online. Each of the asset types below are needed to make up a complete asset package for a single region.

Terrain Textures

A unique terrain texture tile set needs to be created for any package. Terrain textures are specially designed to work together in form and color. If textures from other packages were mixed, the benefits of the textures are lost and visual quality then suffers.

Environment Fixtures

These are the fixtures for the naturally occurring objects in the world. Examples of these are trees, bushes, rocks and cliffs. Ideally a unique set of fixtures would be created for each package, although in many instances geometry may be reused across multiple packages. If that is the case, texture variations are imperative as they are used to toggle different textures sets on existing geometry models.

Brush

Brush is also sometimes referred to simply as grass. Essentially the brush is the small three-dimensional plants that are “painted” on the terrain. Brush must be unique for each package; not only for aesthetic reasons, but because the game does not support using brush from multiple packages in one zone.

Skybox

Skybox art is always unique to each package. The types of assets used in a skybox include sky textures, lighting, and fog settings.

Water Surfaces

Water surfaces are the final type of scenery art asset, however there is more flexibility with cross-zone usage. It is important that water surfaces not be neglected, but some may be shared with other packages. Art assets for water surfaces work as a three part set that includes include water, fringe and wake textures that are specially designed to work with each other.

2 Scenery Art Workflow

Concept to Completion

A simple workflow has been developed to aid in the process of bringing scenery art from concept art to a successful end product. Scenery art has a huge effect on the game not only visually, but in game play as well. Other departments rely on the rapid and effective completion of scenery art and each phase in this workflow is designed to maximize the production of usable, effective artwork as soon as possible. By providing the package in phases of completion, it allows the scenery artist to accomplish three goals that help ensure the success of the project.

Benefits of Working in Passes

1. Rapid Turnaround

Scenery art is created to be used by Terrain Artists, which work in multiple passes when creating zones. Due to the processes they use, it can actually be beneficial for them to work with simple assets at an early stage. This allows terrain artists to work in early stages since most scenery art has a visual representation of its final appearance. This is important because it empowers terrain artists to simply focus on level layout without the waiting for completed finalized art assets, which may be time consuming to produce. By creating a rough first pass of all important assets, the entire package can be created quickly and given to the terrain artist preventing stopping points in production.

2. More Time

By providing the art package to Terrain Artists in multiple passes, it allows for more scenery art development time since the other departments are less dependent on receiving final art early on.

3. Better Results

Finally, there are traditional benefits for the Scenery Artist that comes from creating artwork in passes. Multiple passes work at the fundamental level of creating art in that they encourage the artist to build good foundations, while ensuring that the entire project remains consistent and in line with accomplishing both its form and function goals. Providing the other teams with rough versions early on also maximizes the option for revisions. It's much harder to address changes that may need to be made at a base level once the artwork is complete.

The following steps outline the phases the artist should go through while creating an art package. Phase 1 and Phase 2 need to be completed before the Terrain team begins working on the area. Assuming the concepts for the zone have already been done, about three days should be sufficient to complete these tasks.

Phase 1: Preparation

Before beginning the production of a new scenery art package, it's crucial to first have reference material ready. Most of the time this will be in the form of concept art, however photo reference may be provided as additional reference. In some cases photos alone may be all that is provided or even just a written description. History and lore may also be useful if there is very little visual information provided. No matter what sort of reference materials are provided, the first task is to take all of this information and boil it down into some very specific ideas. The best way to do this is to create a style guide. Mythic has a template style guide for this purpose which makes it easier to set yourself up with all of the information that you'll need throughout the project.

Making the Style Guide

The style guide will act as your master sheet for colors and textures. The purpose of the guide is not only to make sure you remain true to the aesthetic goals for the project, but it also serves as test bed for prototyping and approval processes. It provides a one page “*at a glance*” view of the look and feel of the intended area for directors, so basic judgment calls can be handled early on reducing potential rework. In the following section you'll find an outline of the process of making a style guide for a terrain zone using one of the pre-existing templates.

1. Assemble Resources

Gather all of the concept art and photos provided that may be of use while creating the entire region. You are encouraged to search the web for any addition pieces of art or photography that can serve as inspiration. Study all of these materials to understand the natural aspects of the environment which you are trying to create.



Example: Concept Art provided for Dragonwake

2. Choose Colors

The first art pass is meant to reduce the zone down to its raw essence. Our task is to decide how the basic building blocks will look.

The most important aspect of scenery art is color!

The color palette is more important than shape, form or texture. The first step is to create the region's palette; it is what will define the zone's unique character. There will always be the same basic set of assets that need to be made and only the number of variations of each type will change, expect for a few unique cases depending on zone type. For Warhammer Online, the terrain texturing process has been simplified into layers of just three types of materials:

- **Rock**
Rock materials are used to define mountains and cliffs. Usually rock textures help to communicate to the player visually whether an area of terrain will be impassable or not. Rock textures will always have at least two (2) variations (high and low), but most times you'll want to have 3.
- **Grass**
Grass materials will be any texture that contains plants and are almost always painted on somewhat horizontal ground. Same as with rock, there will usually be at least two (2) variations, but most times three (3). Grass textures are not always needed depending on the zone design. Some zones will only contain Rock and Dirt materials.
- **Dirt**
Dirt acts as the binding agent that ties Rock and Grass materials together. Dirt materials may contain trace amounts of rock or plants. Dirt is usually painted in Atlas as a buffer between Grass and Rock materials.

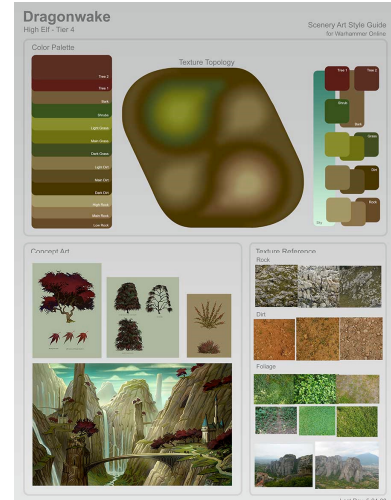
Terrain sculpting and texturing all boils down to being able accurately describe two basic concepts: material and height. Each type of material typically has three sub-variations that will differ in color and texture.

These extra textures are meant to further aid the terrain artist in the task of visually communicating a realistic environment by providing them with tools to better express these variations.

Gravity, time and weather are the main factors that contribute to what the variations will look like. Due to the byproduct of erosion and moisture gathering, low textures are usually darker, more saturated and visually complex. Elevated textures are usually lighter, less saturated and smoother. We'll talk more about terrain texturing topology methods and theories later on.

As you can see in the example template on the right, there are three basic sections: the Color Palette, Concept art, and a section for Textural Reference. To make things easy, a style guide template has already been set up with all the color swatches. The scenery artist merely needs to fill in the three sections. First, grab the concept art; merge it into the Photoshop file, fitting it all into its section. From there you can go about selecting the various color swatches by color picking from the concept art until all the swatches are set up.

Keep an eye on the Texture Topology tool to be sure all the colors are working well together as a full set. The colors that are chosen here will be used for a set of placeholder textures that will be given to the terrain artist in the first scenery art package.



Example: Style Guide built from standard template.

3. Gather Texture Reference

The final step in creating the style guide is to gather some textural references. These will serve to communicate to other teams a rough estimation of what the final textures and forms will look like. Search the web and other resources you may have to assemble some samples of how you intend for the final textures to look. Try to find a good variety by accounting for the various sub-levels of topology described in the previous section.

Phase 2: Prototyping

Now that a style guide has been created that encapsulates the visual themes of the zone, we have one more task to complete before the zone is ready to begin production. Usually scenery art is designed to be used in a specific way. Beginning a new zone from a completely blank slate can be a daunting task. To further aid the terrain artist that will begin working on the zone, the scenery artist will create a small proof of concept area so that there is no question about how the assets are designed to be used. The proof of concept and prototypes also serve to further demonstrate to directors the appearance the zone will take at a very early stage.

Placeholder Art

Before creating the proof of concept zone, the artist needs to generate placeholder versions of all of the assets that will be used in the final package. Carefully examine the style guide and make a list of all of art assets that will be needed in order to complete the proof of concept. This step also helps to make sure that no assets are forgotten accidentally. At this point, the artist just needs to make their best guess at listing all of the assets, but if during the prototype creation phase they find more assets are needed, they can always add more. Below is a sample list of the three categories of scenery art that ended up being created for the sample zone above; Dragonwake.

Terrain Textures	Scenery Fixtures	Brush
he_dw_dirtAlt01.dds	he_dw_tree01_var03.NIF	he_dw_grassAlt01.NIF
he_dw_dirtMain.dds	he_dw_tree01_var02.NIF	he_dw_grassAlt02.NIF
he_dw_grass_to_dirt.dds	he_dw_tree01_var01.NIF	he_dw_grassMain.NIF
he_dw_grassAlt01.dds	he_dw_rock03_var07.NIF	he_dw_Plant01.NIF
he_dw_grassAlt02.dds	he_dw_rock03_var06.NIF	he_dw_Plant02.NIF
he_dw_grassMain.dds	he_dw_rock03_var05.NIF	
he_dw_pathBrick.dds	he_dw_rock03_var04.NIF	
he_dw_pathMain.dds	he_dw_rock03_var03.NIF	
he_dw_rock_to_dirt.dds	he_dw_rock03_var02.NIF	
he_dw_rockLower.dds	he_dw_rock03_var01.NIF	
he_dw_rockPlants.dds	he_dw_rock02_var03.NIF	
he_dw_rockTop.dds	he_dw_rock02_var02.NIF	
he_dw_rockUpper.dds	he_dw_rock02_var01.NIF	
	he_dw_pillar03.NIF	
	he_dw_pillar02.NIF	
	he_dw_pillar01.NIF	
	he_dw_ledge03.NIF	
	he_dw_ledge02.NIF	
	he_dw_ledge01.NIF	
	he_dw_cliff02.NIF	
	he_dw_cliff01.NIF	
	he_dw_bush03_var01.NIF	
	he_dw_bush02_var01.NIF	
	he_dw_bush01_var02.NIF	
	he_dw_bush01_var01.NIF	

You might notice on the list that the terrain textures don't directly correspond to the color swatches that were originally used in the style guide. Some of the name are a bit different, some material variations were omitted and some auxiliary textures were added (these will be discussed later on in the Finishing section. Additionally, there will also be other textures used in the fixtures that this list doesn't account for as 100% accuracy at the level is difficult. Once the list is created, it's time for the artist to set about creating usable placeholders for all of the pieces that will make up the final art package. All of the placeholder assets should have approximately the same function and memory footprint that they will have when they're finalized; only the aesthetics will change. Here's a brief listing what a placeholder asset for each of the art types would consist of.

1. Terrain Textures

Terrain textures should be made of 1 1024x1024 DXT1 DDS file for each texture. Their contents should consist of one solid color as determined in the style guide.

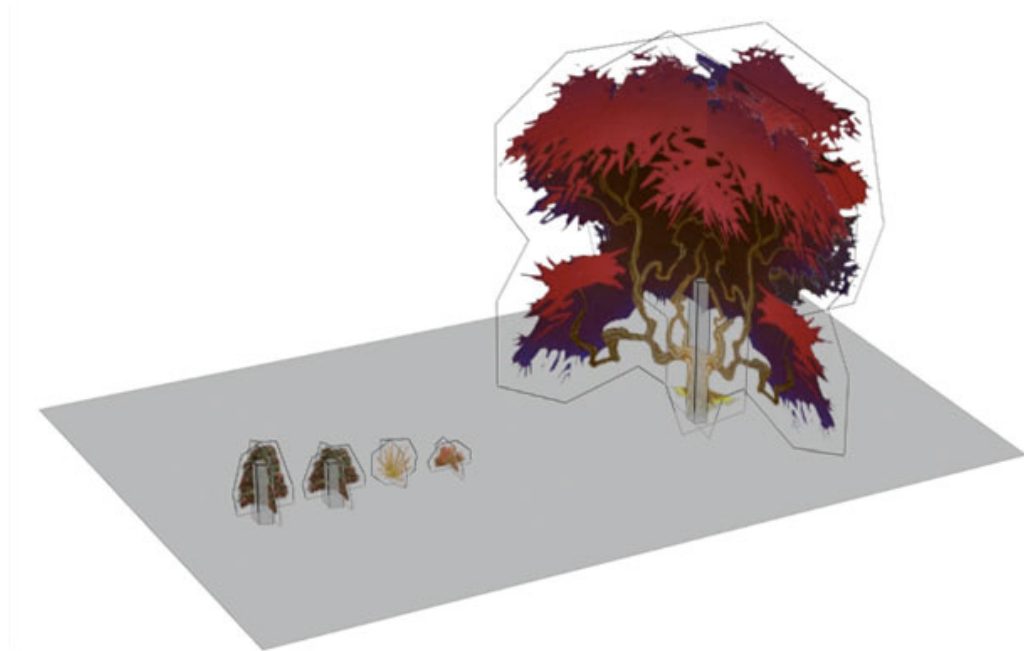


Placeholder Terrain Textures.

2. Scenery Fixtures

Placeholder assets for scenery fixtures differ based on the type of object they are.

- Earthly objects such as cliffs and rocks should be modeled out with collision close to the size and shape of their final versions, so a fair amount of thought should be put into their design. Textures can be copies from the placeholder terrain textures.
- Models for foliage such as bushes and trees can be displayed in a “cutout” alpha plane method. To do this, create a texture that has a 2D (side view) drawing with a close approximation of the final objects silhouette. Then create a simple “cross-plane” model displaying this silhouette at a scale close to what the final will be. Finally, give the object simple collision if appropriate.



Placeholder Scenery Fixtures

3. Brush

For each new zone, we create a single 256x256 DXT5 texture sheet. You'll want to have one brush model that corresponds to each grass terrain texture used in the zone. Their colors will closely match those of the terrain texture that they will be placed on. The placeholder textures can merely be solid colors and shapes. You may want to create two or three additional brush variations as well. To make the brush model, map the grass texture to a single square polygon and clone it around a few times to create a cluster. Maximum polygon count is 28 triangles.



Placeholder Brush Texture

The Proof of Concept

Once placeholder objects have been created for all of the scenery assets, the next step is to create a 'proof of concept'. The PoC is like a "mini zone".

proof of concept (PoC) -

A prototype that is built to demonstrate the techniques or designs of a proposed application or system in a successful manner.



Proof of Concept: Dragonwake (in game)

There are three goals for the PoC. First, is to have the Atlas file all set up with the appropriate files and settings before it is handed off to the terrain artist. Second is to demonstrate to the terrain artist how the scenery art assets and terrain should be implemented. This process streamlines communication and production, while ensuring proper artistic implementation. A picture is worth a thousand words, but an example is worth a million. The final goal is to demonstrate to the directors the zone's visual potential early in development. Allowing directors to preview a zone in this manner helps prevent conceptual errors or problems before development is in full swing, thus reducing the chance of time consuming rework in many cases. The PoC is a perfect way for people to see at a glance what the zone will be like when it's finished.

1. Recreate Concept

The following list states the most important points to create a PoC. Keep in mind this document is not intended to give the technical specifics of Atlas, but only to teach the proper workflows to develop proper aesthetics. Please refer to the “Atlas User Guide” for complete technical information.

a. File Setup

Create a new Atlas file with appropriate naming conventions and directory structures for archiving. Set up all of the art assets that were created for the zone. Ensure all terrain layers are in their proper order. Preset all Brush templates.

b. Terrain Forms

Lay out an area that is similar to the concept that thoroughly demonstrates terrain forms. Sculpt out topology to show elevation changes and key environmental forms. The area that is created will be not be used in the process of creating the zone, so move swiftly. Keep it as small as possible; an area approximately 500 feet square should suffice.

c. Texturing Techniques

Show proper terrain texturing practices by showing where and when they should be used to achieve a naturalistic look. Demonstrate how layers interact with each other and set down the rules for how they relate to the topology (steepness). Illustrate proper painting techniques for achieving proper layering with the terrain forms.

d. Fixture Placement

Fill out the area with scenery fixtures to let the Terrain Artist see how to populate the area in a natural way while complimenting the style of the concept. If available, use racial specific buildings to further confirm the look.

e. Brush Painting

Show how the brush should be used in relation to the terrain textures and forms.

2. Hand Off Assets to Terrain Artists

The entire package is now ready to be handed off to the terrain team. From here, a terrain artist will begin roughing out the zone in its entirety while using the style guide and the PoC for stylistic reference. They will use all of the placeholder art that has been provided for them to complete the next few phases the zone will go through: terrain rough and content rough. While these phases are being completed, the scenery artist will work on finishing the placeholder artwork for the zone. After the artwork is finished the package will be delivered again, at which time the zone will move on to the final two phases: terrain finishing, content finishing and finally polish.

Phase 3: Finishing

The following sections will outline some of the recommended techniques for creating finished scenery art assets for Warhammer Online. Following the methods used in these tutorials will help maintain better consistency with existing game assets as well as improve efficiency.

Terrain Texturing

Warhammer Online has an established art style for terrain textures, so it's important to maintain this style for consistency purposes. Ultimately it doesn't matter what process you use to reach the end result, however the following walkthrough may aid in the achievement of that goal. Warhammer's texture style could be described as stylized realism. We seek so attain a naturalistic look, while maintaining the air of being handcrafted. Making terrain textures has its own set of special considerations. Before going into the practical tutorial, review the following list of core concepts that need to be maintained throughout the texture creation process. The tutorial that follows will demonstrate specific painting techniques by creating a tiling rock texture.

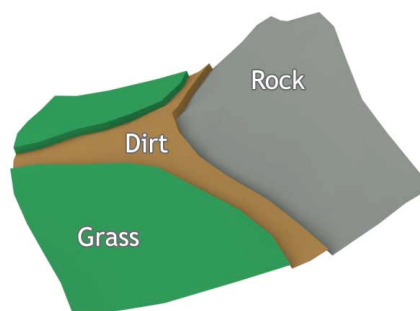
Core Terrain Texturing Concepts

A. The "Clean" Look

In Warhammer we strive to maintain what we call a "clean" look. When multiple terrain textures are layered they can easily appear "muddy", "busy", or "dirty". This is not the desired look. This effect happens when textures that are very different in color, style, or forms are layered on top of each other. To prevent this keep in mind the following concepts:

a. Shelling

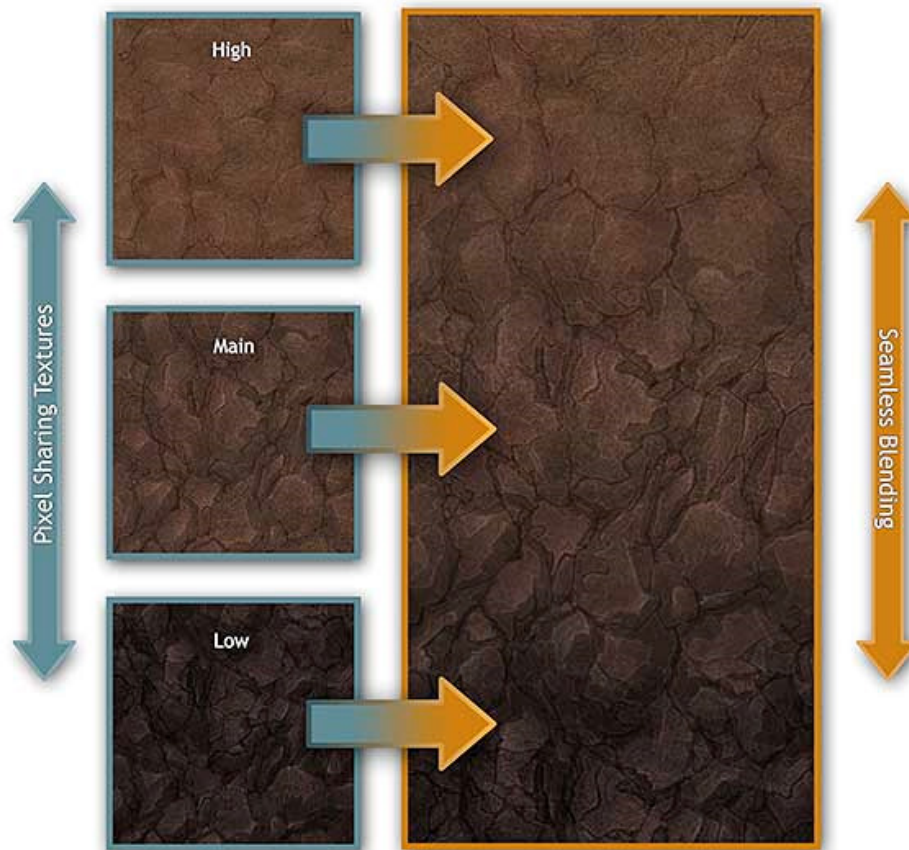
Textures should be designed to be blended specifically with other textures. Meaning certain textures will only be painted next to or on top of others. We control what textures are layered (or blended) with each other through a concept called "shelling". For example, the layers of a jawbreaker reveal themselves as each layer is worn down, in much the same way the earth also shows these layers as they are naturally revealed. As erosion occurs, each layer is worn down revealing the next. To achieve naturalistic topology, we need to strive to demonstrate how the layers "shell" with one another consistently. Just like the real world, grass and plant textures are layered on top, followed by dirt, and finally the rock is exposed below.



Example of Material Shelling

b. Pixel Sharing

Pixel sharing means that textures are “paired up” (shelled adjacently) in order to share pixels with each other. The term *share* merely means that the paired textures have similar foundations and because of this they share certain forms between one another. When the textures that share pixels are blended together, the shared sections overlap producing a cleaner blend. Textures of similar material types (grass, dirt, rock) should all use the same base foundation. The high and low variations are based off of the main texture. Pixel sharing is also used extensively in “transition” textures (explained below)



Example of Pixel Sharing:

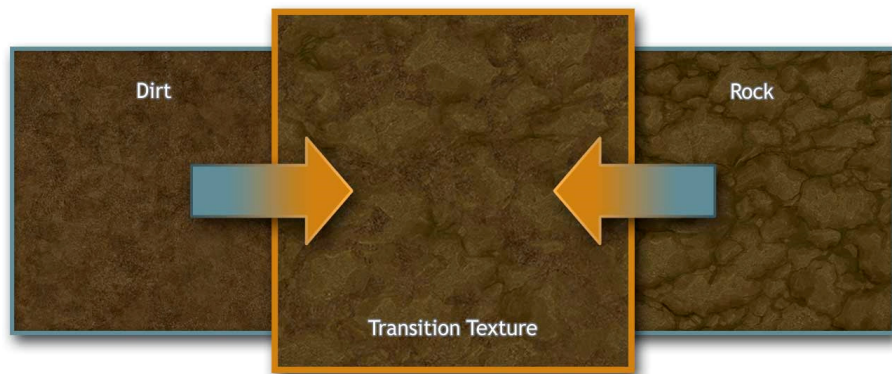
The “main” texture was made first, while keeping in mind that the “high” and “low” were going to be based off of it. Less detail was added to the “high” and more to the “low”. Because all three textures share the same base pattern and were made simultaneously, when painted down they blend seamlessly.

B. Auxiliary Textures

We can also create extra textures to add realism and detail. These are additional textures beyond what make up the core set of materials (i.e. rock, grass, dirt). Use them to hide boring or harsh transitions between textures or add variety and contrast to otherwise bland regions. Below two types of commonly used auxiliary textures are described.

a. Transitions

Textures which are used to smooth the blend between two separate types of textures (i.e. dirt to rock) are known as *transition textures*. These are auxiliary textures painted between the two materials. They help to create a cleaner, more naturalistic blend between them. Take a look at the example below. The “low dirt” texture and the “low rock” texture are combined to simulate the dirt filling in the recesses of the rock. Layering this texture over the blend produces a much clean transition between the two.



Transition Textures

b. Alpha Window

This type of texture works like a normal texture, but it contains alpha (transparency) properties. They have the benefit of being able to transition on another texture with a crisp edge falloff. They can be used to improve the transition between two textures or add detail and variation to be painted in specific areas. Alpha window terrain textures should be saved using DXT5 (grayscale) alpha DDS format. Atlas contains clamping values that may be set for each alpha window layer. A lower clamping value will essentially sharpen the alpha and create a much sharper blend edge when painting the layer down. A higher value will clamp less, retaining more of a traditional soft blending characteristic.



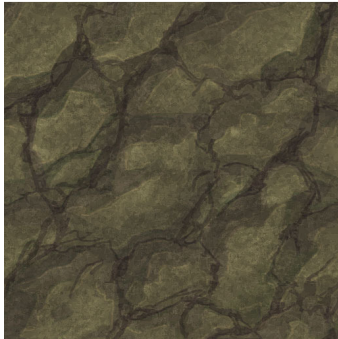
Example of Alpha Window:

Alpha window textures react similar to how they are shown here. Paint freely across any layers to seamlessly add detail where ever desired. Combine “pixel sharing” with alpha window textures for even greater integration.

C. Detail Levels (Macro versus Micro)

It is important to make sure your terrain textures read well at varying distances. Test your textures by zooming out to make sure that they still read well. Most of the time the player will be viewing the texture reduced in scale by at least fifty percent. When creating a texture, it's best to nail down the "macro" level of detail (large forms) first, and then add the "micro" (texture) details after. Beware of allowing the texture to "tile" too much also. If the macro details are too unique, they will begin to repeat obviously when viewed at a distance.

Rock Texture Walkthrough



Finished Rock Texture

This section will describe the recommended techniques involved in the creation of rock textures for Warhammer Online. On the right you'll see the finished rock texture. As described earlier, this would be the "Main" rock texture. The "Low" and "High" would be based on this version. You'll want to download a tool called **AMP Tile Viewer** for doing this tutorial. You can get it at <http://www.ampsoft.net/utilities/TileViewer.php>. This viewer will allow you to view your PSD seamlessly tiling infinitely. See the accompanying video tutorial for a real-time demonstration.



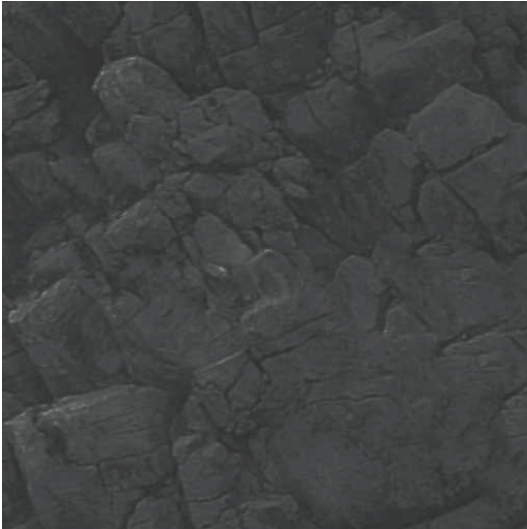
1. Choose a source

The first step is to find some photo good texture photo reference that resembles what type of texture we're looking to make. I got this texture from www.cgtextures.com. It doesn't need to be very high res because we're only going to use it as a guide. This reference image won't exist at all in the finished product.



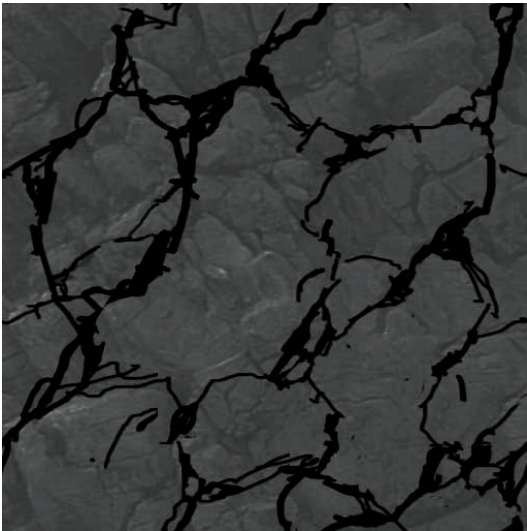
2. Crop and fix seams

Create a new document of the final dimensions your texture will be in. Warhammer terrain textures are typically 1024x1024. Drop the photo reference in and pan and scale it around until you find a spot that looks similar to what you want. You're looking for a good variety of size in the forms and patterns.



3. Prepare for Outlines

Next, add some adjustment layers to desaturate and decrease the contrast. Pull out the large shapes and deep shadows making it more two dimensional. The depth in the texture will not be used; we're only going to use the shapes in the cracks to create our base pattern.

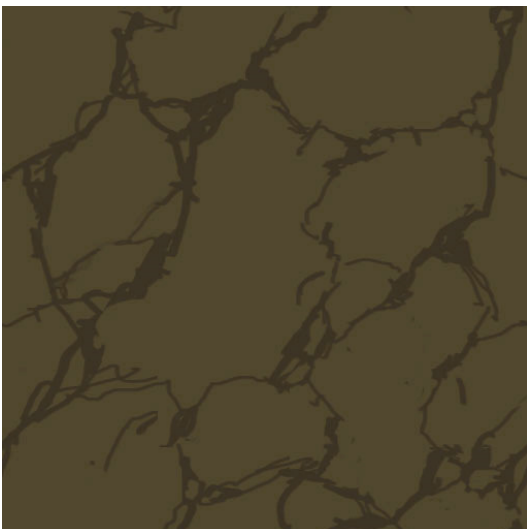


4. Trace Cracks - Shadow Layer 1

We'll primarily be using adjustment layers for creating this entire texture. Create a new "Solid Color" adjustment layer on top. Quickly trace in some rough outlines of the cracks in the image. At some point, once you've traced in a good amount of cracks, you can discard the photo ref and replace it with a solid color. Use the "Offset..." tool to get the cracks to tile nicely. Double check your image in AMP periodically.

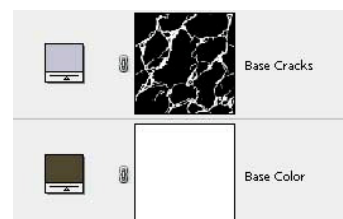
Important:

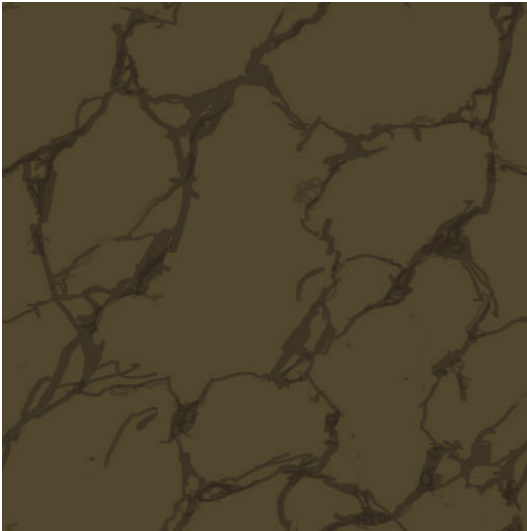
Unless otherwise specified, paint the alpha in these layers in solid black and white. Doing this lends itself to more three dimensional rock in the end.



5. Create Base Layer

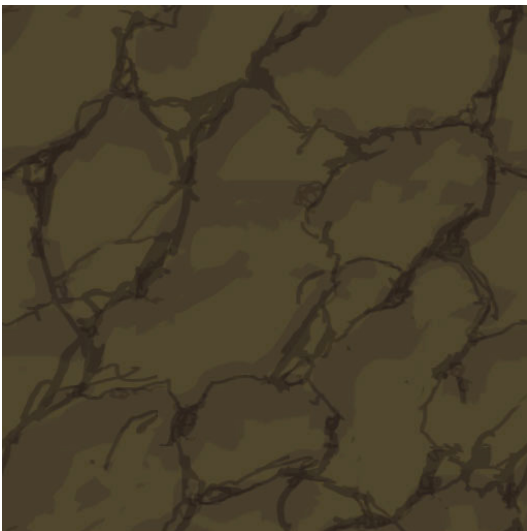
Create a new Solid Color layer below your main crack layer. Set your crack layer transfer mode to multiply and change the color





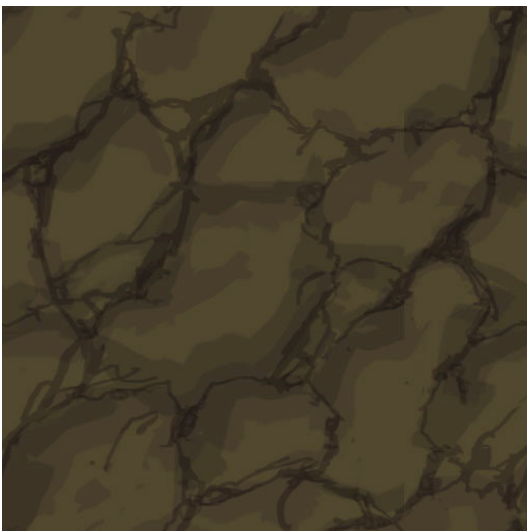
6. Add Shadow Layer 2

Create a new Solid Color layer above your main crack layer and set it to multiply. On this new layer, paint some smaller cracks inside the main cracks. This is to simulate a little bit of depth in the cracks. Remember, accuracy and finesse is not important, a little messiness is fine.



7. Shadow Layer 3

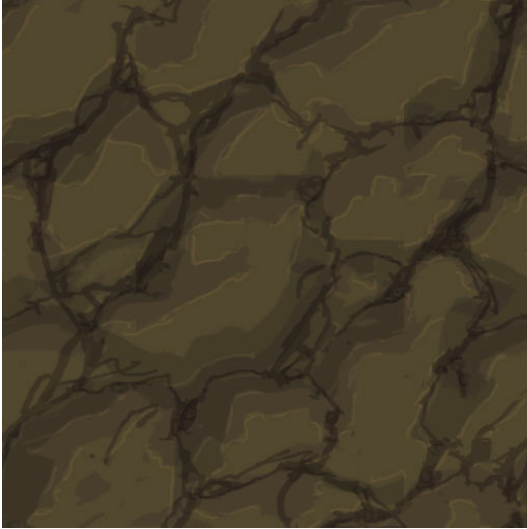
At this point we'll continue to layer on some shadows. In this layer, lay down some large crisp swatches. The shadows should follow the cracks and gravitate towards them. At this point some rudimentary depth should begin to show.



8. Shadow Layer 4

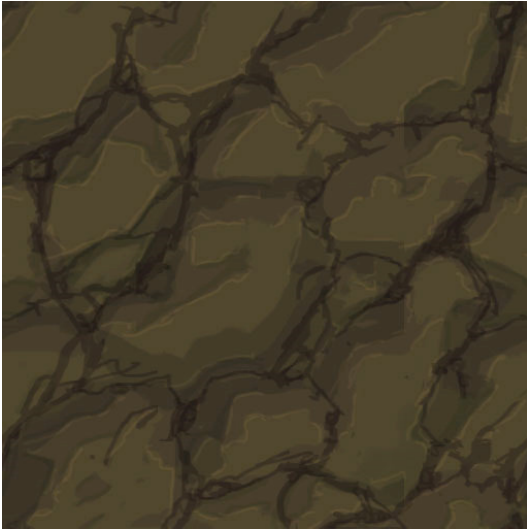
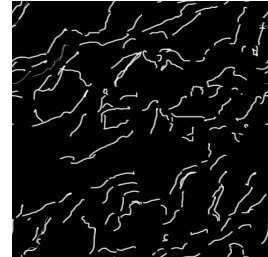
Add another layer on top and do something similar to the last step. We're looking to build up the shadows here while creating some more volumetric forms.





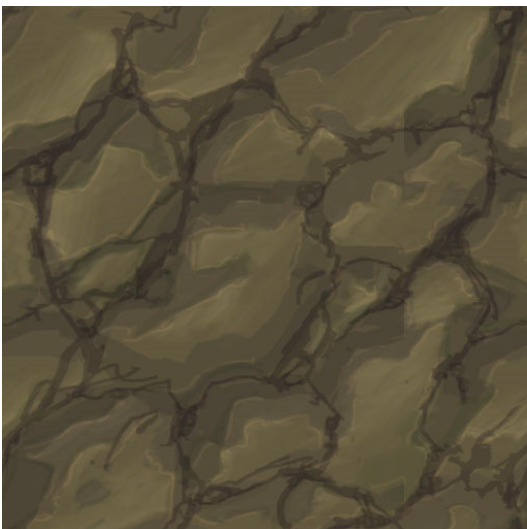
9. Highlight Layer 1

Now add another Solid Color layer and this time set its transfer mode to Color Dodge. With this layer, just create a thin outline along the edge of where the lighter forms end. The effect is to highlight the edge making it pop.



10. Shadow Layer 5

One more multiply shadow layer will be added to slightly increase the intensity of the highlights we added in the last step. Take a solid brush and give a slight shadow to the opposite side of the highlight edges.

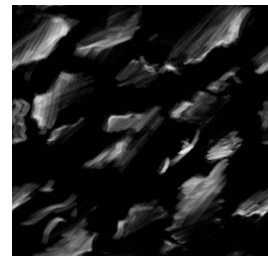


11. Highlight Layer 2

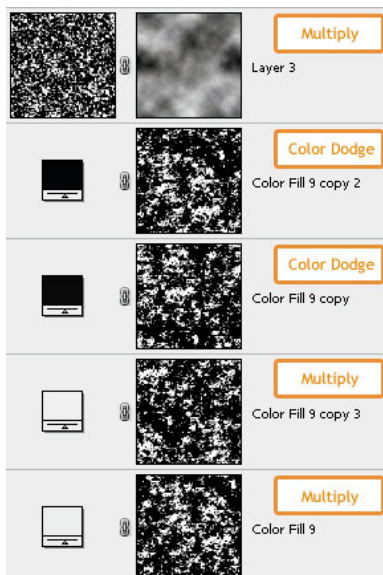
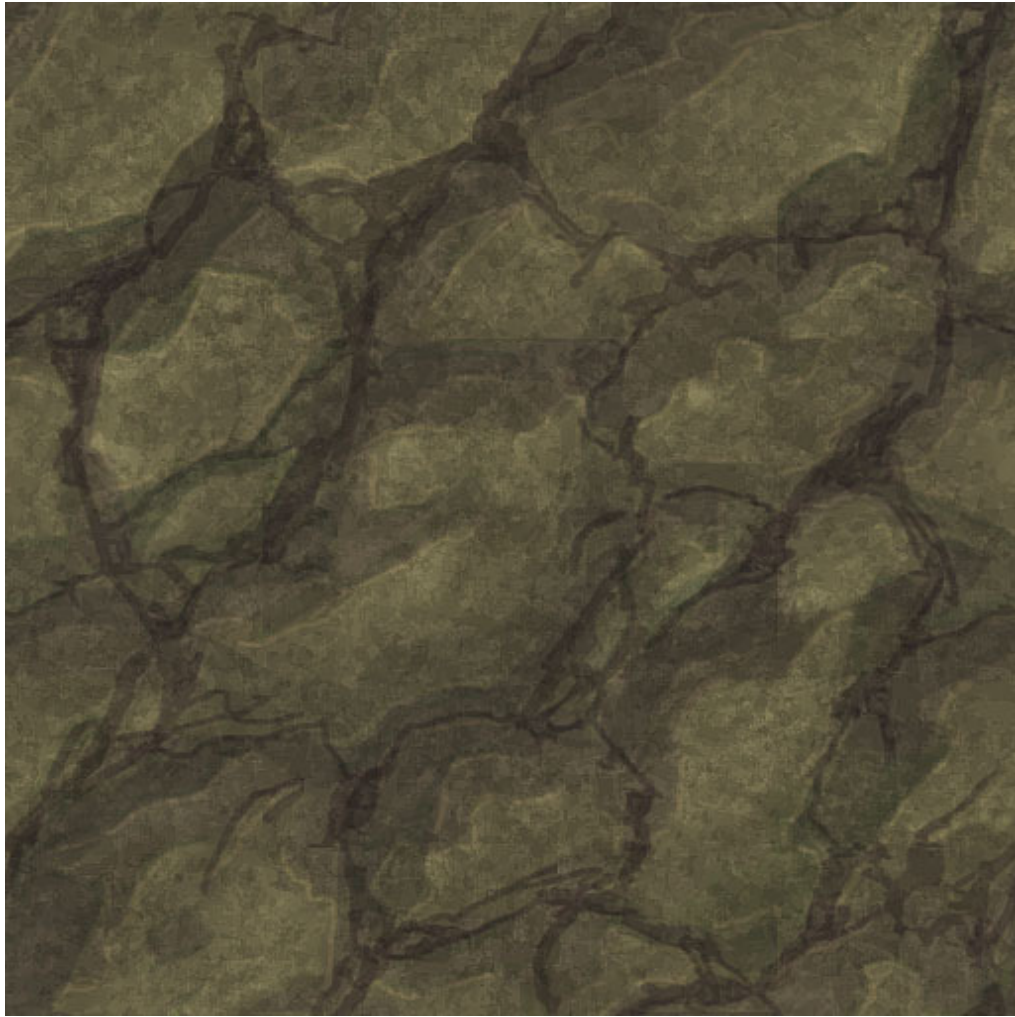
Most of the forms are blocked out now, but the image is kind of flat overall. We'll add one more Color Dodge Highlight layer to bring out more depth. In this layer try to shade the large forms toward the one edge so as to cause the surface to seem angled.

Important:

During this step you should periodically rotate and or flip your image to make sure that it is not too directional. Terrain textures are viewed from all angles, so they shouldn't look upside down ever. They need to be omnidirectional.



12. Detail Pass



After the last step we should have some pretty good rock forms, but it's lacking realism in the surface detail. Step 11 brings us to the completion of the "Macro" detail level. Now it's time to add the "Micro" detail. To do this, you have two options; you can either overlay some photo maps or add detail using color layers. For Warhammer it's usually best to opt for the latter. Adding detail using Solid Color layers is quick and easy. Just add a few color layers set to Multiply or Color Dodge and fill their alpha masks with various types of noisy patterns.

On the left you can see that five layers were used to add detail to the texture. Each layer's effect is subtle, but when added together they make a realistic surface. The alpha masks for each layer were generated by using Photoshop filters.

As a final step, all layers were collapsed and Unsharpen Mask was used to slightly pop out the details.