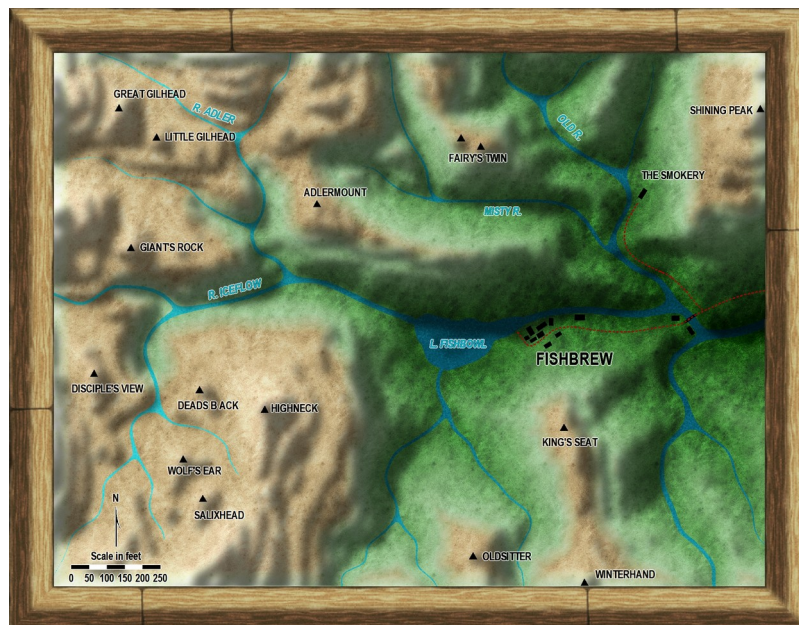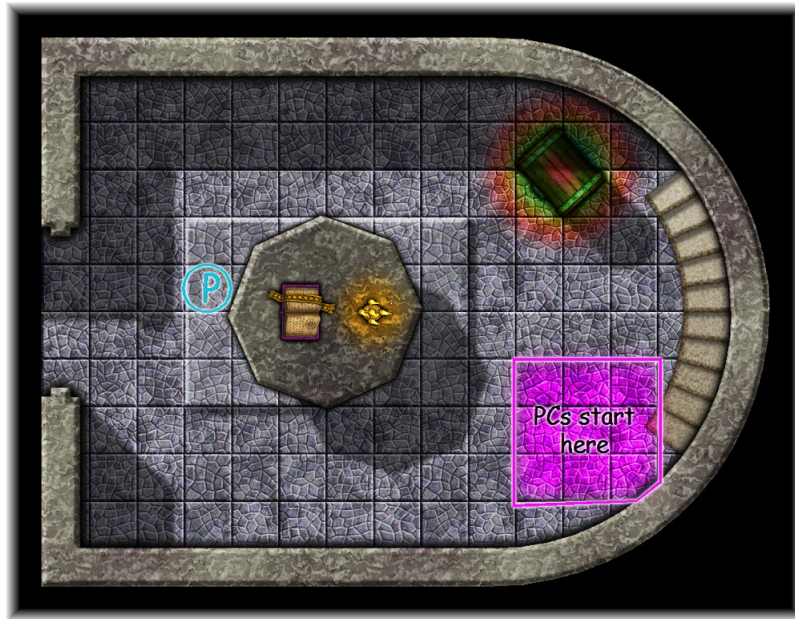# An overview of the Blend mode, Overlay effect
A Campaign Cartographer 3+ Article

Credits

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Proofreading and technical advice by KenG.

Introduction

The "**Blend mode**" effect has been released with CC3+ and has many sub-categories (modes). One of these is the **Overlay** option. With this effect enabled on a sheet, you can
- Slightly alter the colors of specific areas of your map,
- Create a custom "Bevel" effect,
- Simulate round shapes,
- Simulate depth,
- And probably many more...

1. Altering the colors

It's in fact the basic use of this effect, all the other points mentioned above derive from the way you will alter the colors.

For now, suppose you have a tiled floor and you want to color each tile to simulate a magic effect. You could add a sheet with a **transparency** effect but this will dull the fill style. By using the **Blend mode, overlay** effect, all the details of the fill style remain as sharp as the original but you gain the new colors:


From left to right: fill style with no effect, **Transparency** 50% effect added, **Blend mode, Overlay** with opacity 50% (the Blend mode parameter, not an additional effect). The effects have been added to a sheet with solid color squares (standard palette, colors 2: red, 3: blue, 13: green and 134: yellow). Please note how the shading remains more vivid within the last column.
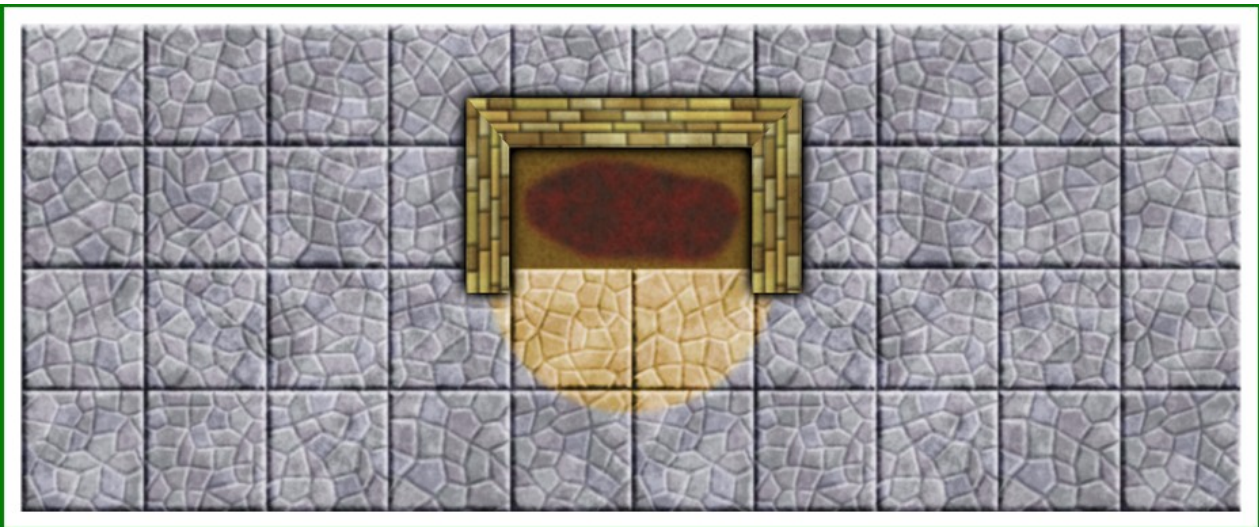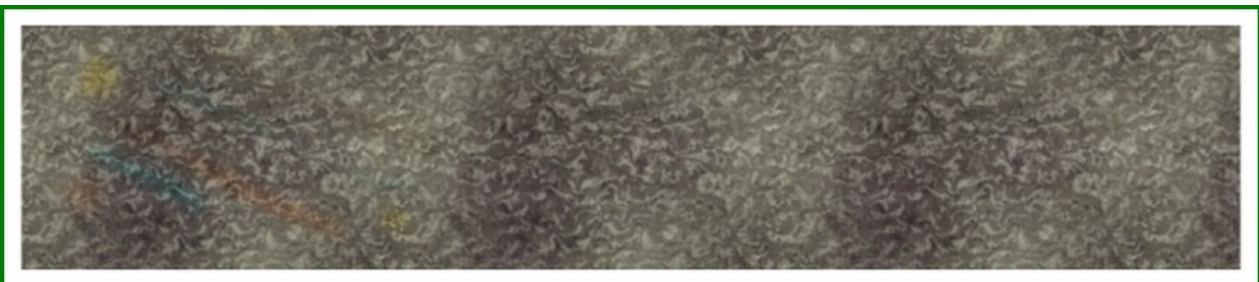
Other examples:
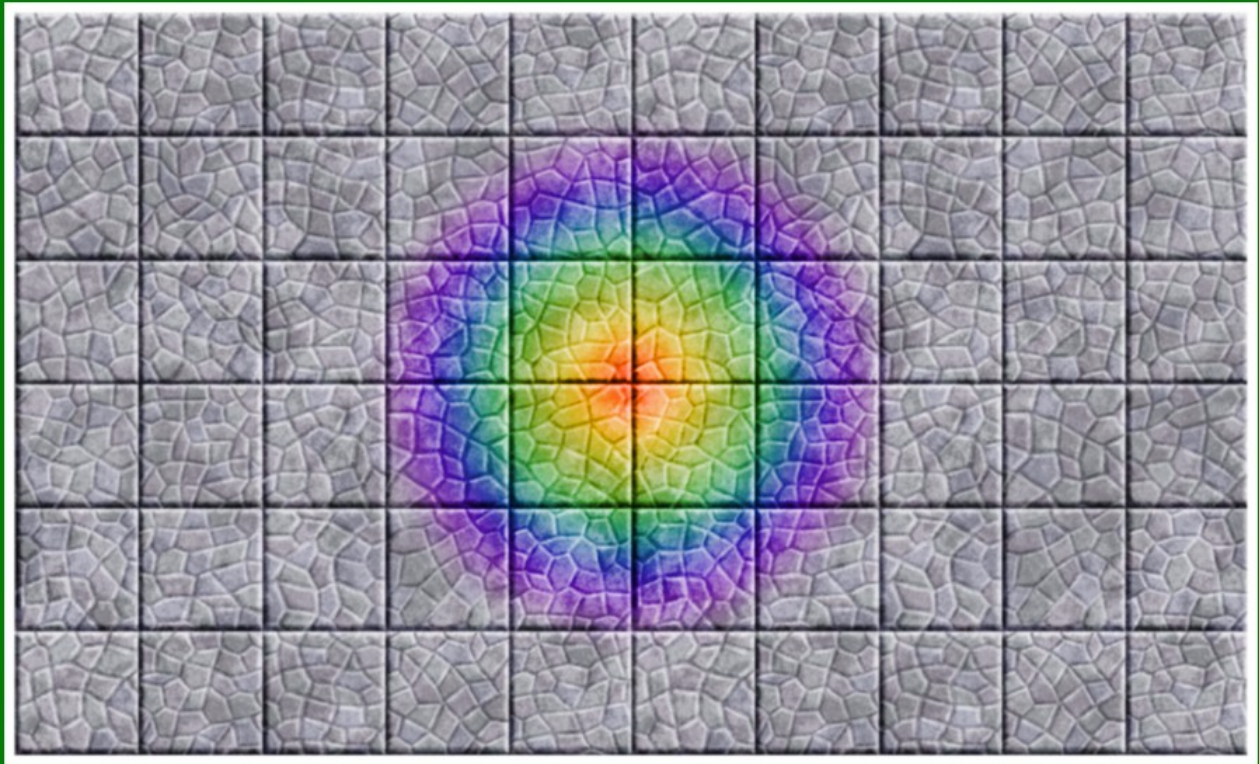
Rainbow effect (**Blend mode, Overlay** with opacity 100% and **Blur** effect).
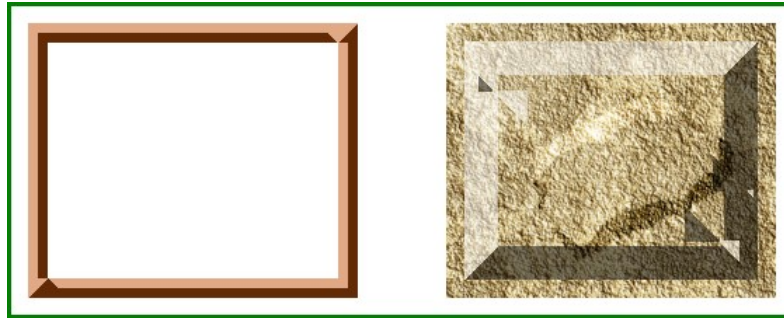

Fireplace with embers and lighting.

Left: Adding color touches to add diversity to a fill style. Right: no change.

2. Custom bevel effect

The CC3/CC3+ **Bevel** effect is a great tools that has lead to many fantastic maps over the years, but it has some flaws:

Left: Bevel effect on a frame. Note the top-right and the bottom-left corner.
Right: the dreaded bevel artifact that occurs with some bitmap fill style[1].

We have seen that the **Blend mode, Overlay** effect can alter the colors but a special mention must be made to gray tones. Color 248, which is sort of a middle-gray, doesn't have any effect at all, while all the lighter grays (colors 249 up to 255) and the pure white 15 will lighten the colors, and the darker grays (colors 240 to 247) and the full black 0 will darken the colors, and the **Bevel** effect does just that…

The **Bevel** can then be replaced by a **Blend mode, Overlay** at the cost of an additional sheet (the **Bevel** is added to the sheet containing the entities to bevel, while the **Blend mode, Overlay** is on another sheet, specifically designed for this effect. More about sheet handling can be found here):
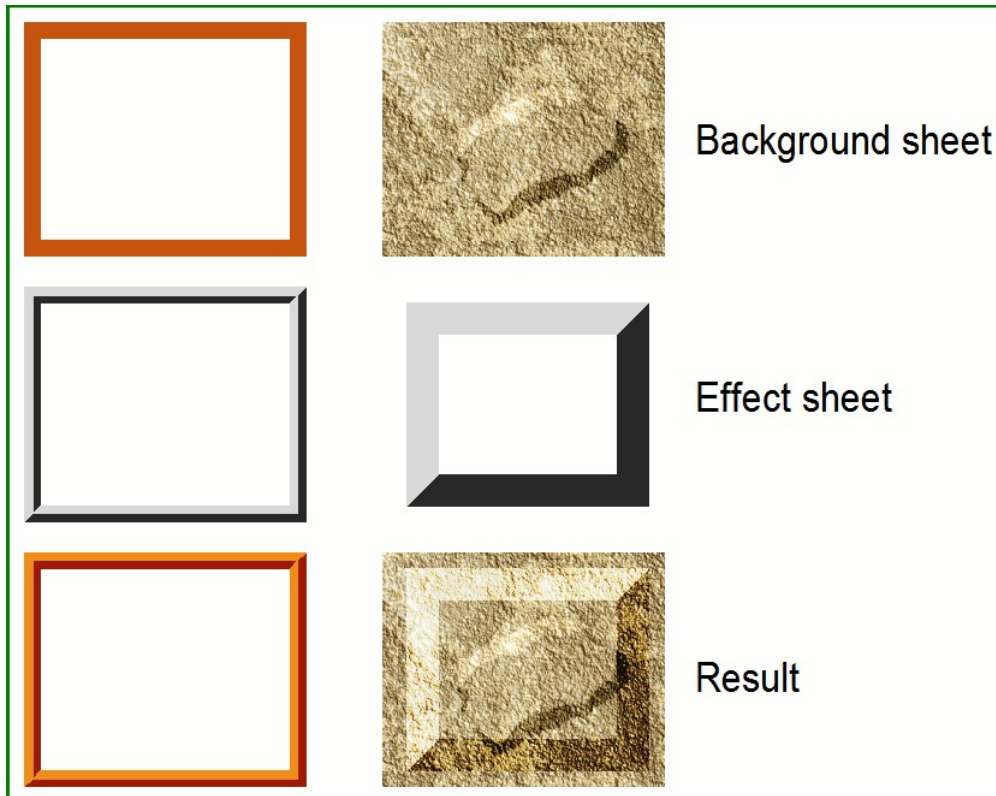
A bevel created by the **Blend mode, Overlay** effect. Colors used: light gray 254 and dark gray 241. Compare to the pictures above. The colors are not the same but you still have a nice bevel. By using other shades of gray, or even dark/light more saturated colors, you can alter the look of the bevel.

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1 One classic way to get rid of these artefacts is to "sandwich" a sheet with solid colored entities above the background and beneath the offending sheet.

3. Simulate round shape

It's just taking the previous bevel a step further by making boxes of various gray hues and of sizes compatible with a circular (or even more elaborate) shape.

- Divide the outer circle of the size of the shape in wedges with the **Circular array** tool then project the outer endpoints of the lines on the rounded object, trimming them to the object.
- Use the endpoints to create gray polygons of increasing/decreasing lightness (depending on the way the light is coming from), on the **Effect** sheet. A slight **Blur** effect on this sheet will soften the edges of the polygons.
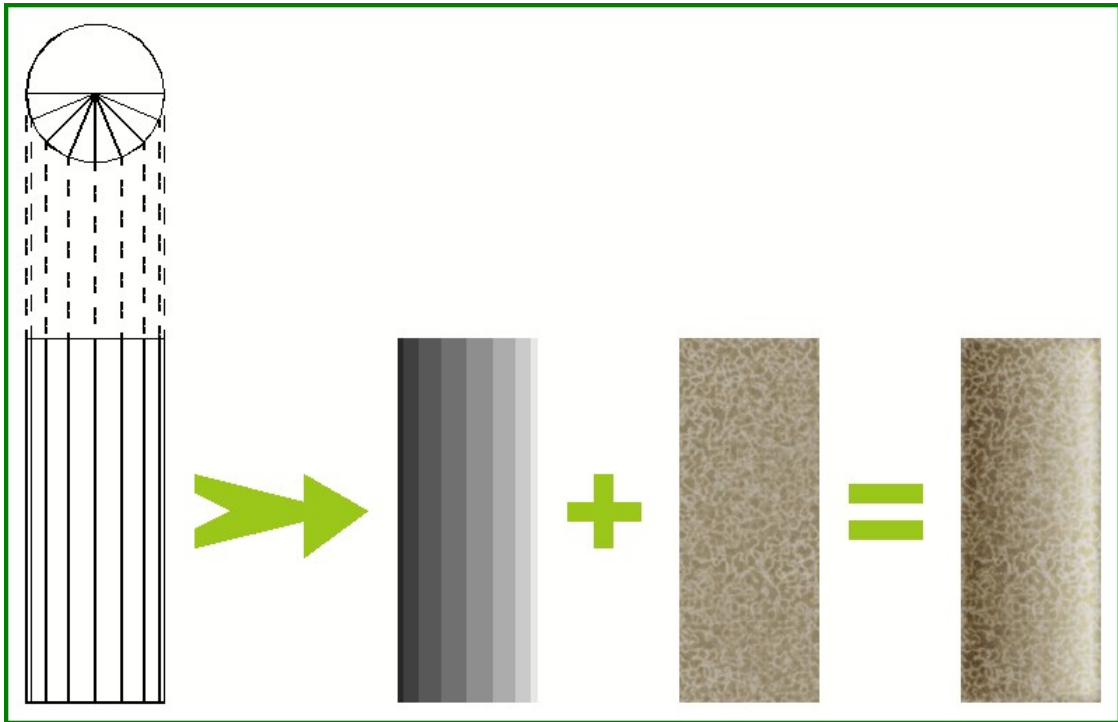
4. Simulate depth

With gray hues you can also simulate depth by using darker tones as the levels gets deeper. Dungeon maps with raised/lowered areas and/or stairs but also regional maps can use this feature:
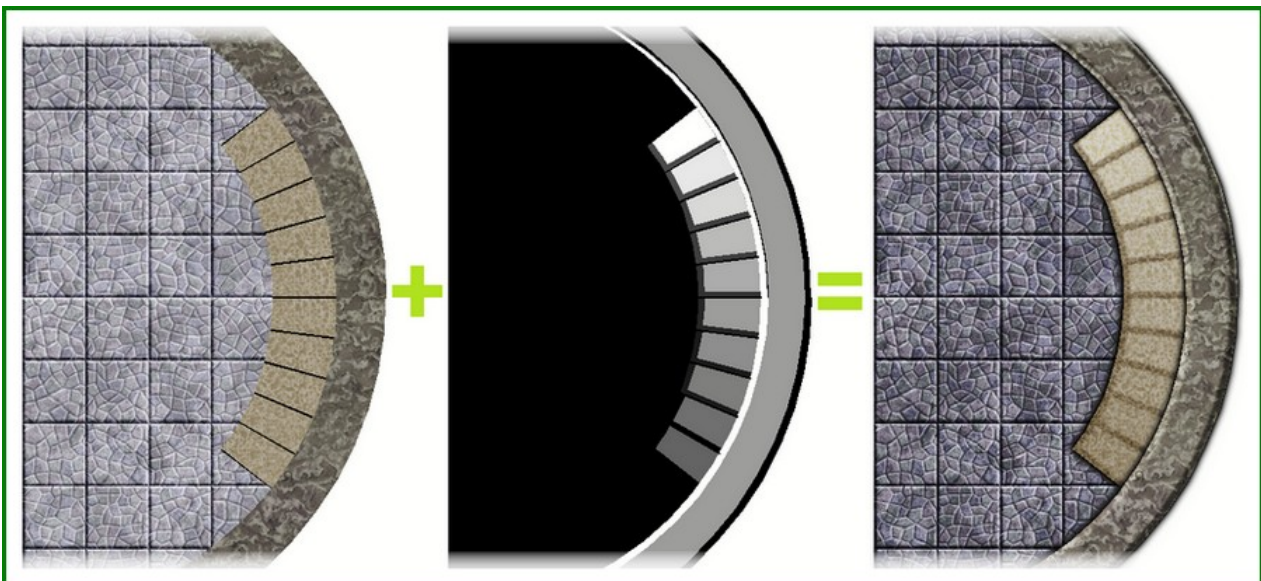
To create a regional map showing depth/heights I use the following steps:

1. Create a **BACKGROUND** sheet (if it does not already exist) and draw a box with the fill style of your choice filling the whole map area. I've used a sort of grass fill style.
2. Optionally add a **BACKGROUND2** sheet if you wish to add terrain variation to the background, but leave it empty for now.
3. Create an **EFFECT** sheet and draw a box with a **solid** fill style, a black color (0) and overlapping the background box by at least 10%. For the sample map (800×600), the black box is 900×700.
4. Create a **RIVER** sheet (if it does not already exist) and draw rivers and lakes.

5. Make the **EFFECT** sheet current, select color 240 (here shown in olive green for academic purpose) and draw a first contour, leaving only a little bit of black where the river is at it's lowest.
6. Repeat step **5**. with all shades of gray (241 to 255) ending with pure white. Each new area should be smaller than the previous one.
7. For the additional **BACKGROUND2** sheet, one way is to copy an intermediate gray entity to this sheet and trim it to the background.
8. Activate the sheet effects and enjoy.
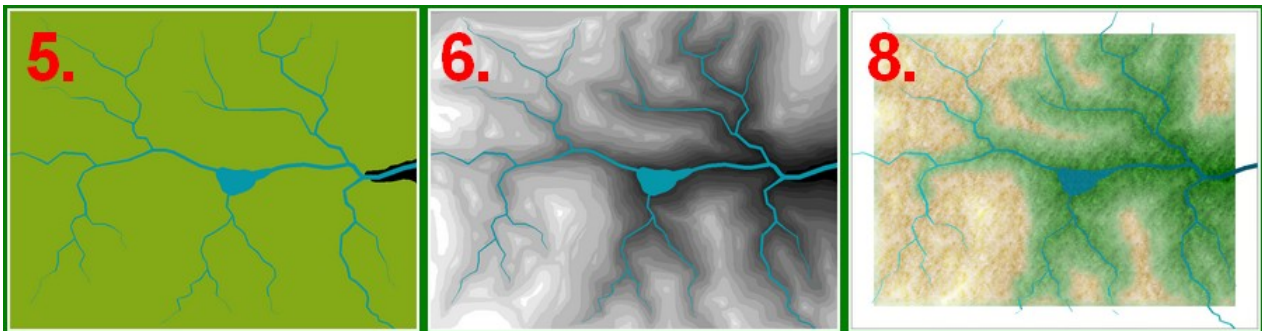
As a bonus, once you get all these nice contours, you can export the **EFFECT** sheet to get what is called a *height field*, what is exactly what some 3D renderer use to create terrains. Wilbur and Bryce can do it, and so can **Povray** that will be used here.

1. The first step is to export *only* the **EFFECT** sheet as a png or jpg picture file, using the same resolution than the final map. For example, if you create an 800×600 map that you want to export at 4000×3000 (resolution of 500), the height field export should be at 4500×3500 (900×500 by 700×500).
   Before exporting, uncheck the **Blend mode, Overlay** effect on the sheet, but a slight **Blur** is in order.

2. Using your 3D render, create the terrain. Here is the code for POVRAY. The resolution must be set to 4500×3500 or higher (adjust to your settings).

```
#version 3.7;

global_settings{max_trace_level 30}

light_source {<-10000,100000,10000> rgb 1 parallel}
               // adjust light settings if necessary

camera
{
   orthographic
   location<0,10000,0>
   look_at <0,00,0>
   right image_width*x
   up image_height*y
}

height_field{
   png
   "relief.png" // name of your export
   smooth
   translate <-0.5,0,-0.5>
   scale <4500,10000,3500> // 1st number is export length
                           // 2nd number is height field max height
                           // 3rd number is export width

   pigment{rgb 1}
   finish{ambient 0.25}
}
```

3. Use a picture editor, like **The Gimp**, to enhance the resulting render:
   a. Lower the brightness and raise the contrast (Colours→ Brightness-Contrast→ -30 / 50)
   b. Blur (Filters→ Blur→ Gaussian Blur→ 50 / 50, twice)
   c. Make white areas transparent (Layers→ Transparency→ Colour to alpha→ white to alpha)
   d. Crop to map area (Image→ Canvas size → 4000/3000/Centre/All layers)
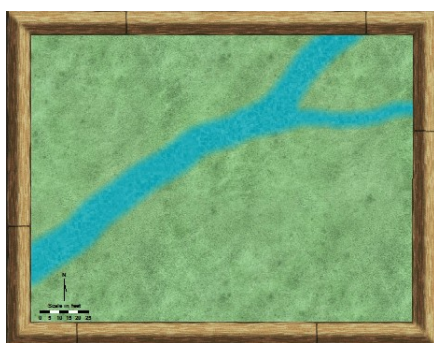   e. Export to png (File→ Export as).

4. Back to CC3+, create a **RELIEF** sheet and import your png file (Draw → Insert File, from 0,0 to 800,600 or adjust to your settings).
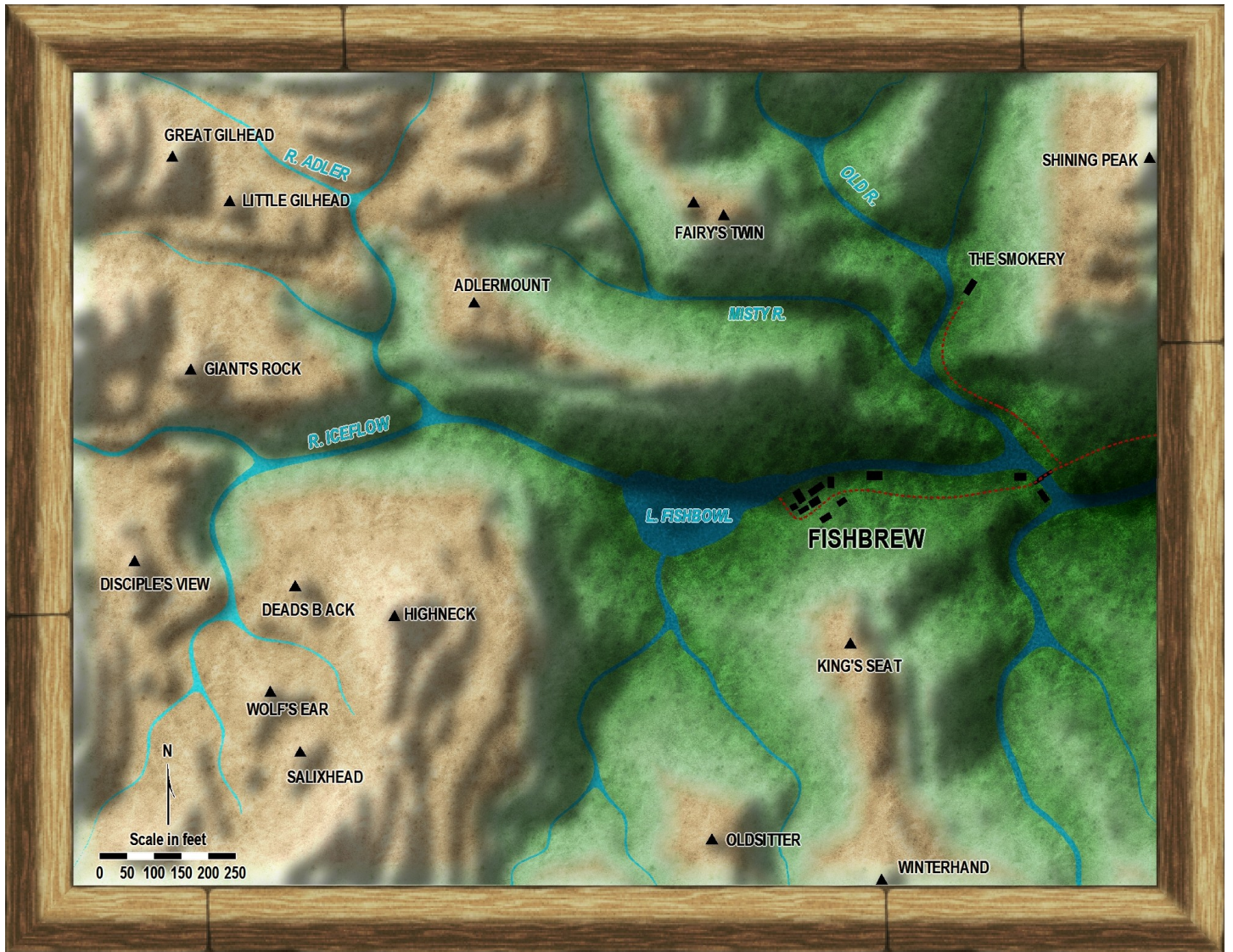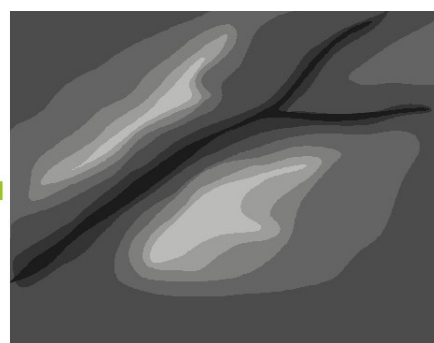
On a smaller scale, you can obtain similar results with a **Transparency** or a… **Blend mode, overlay** effect**!**
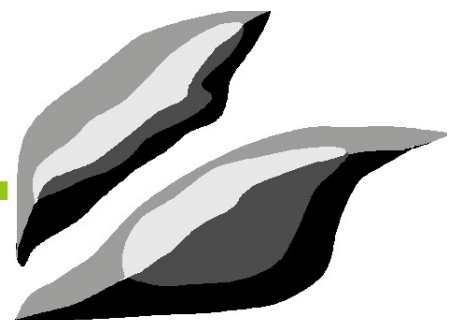Just add some white and black polygons on an **EFFECT2** sheet with a blur and there you go:
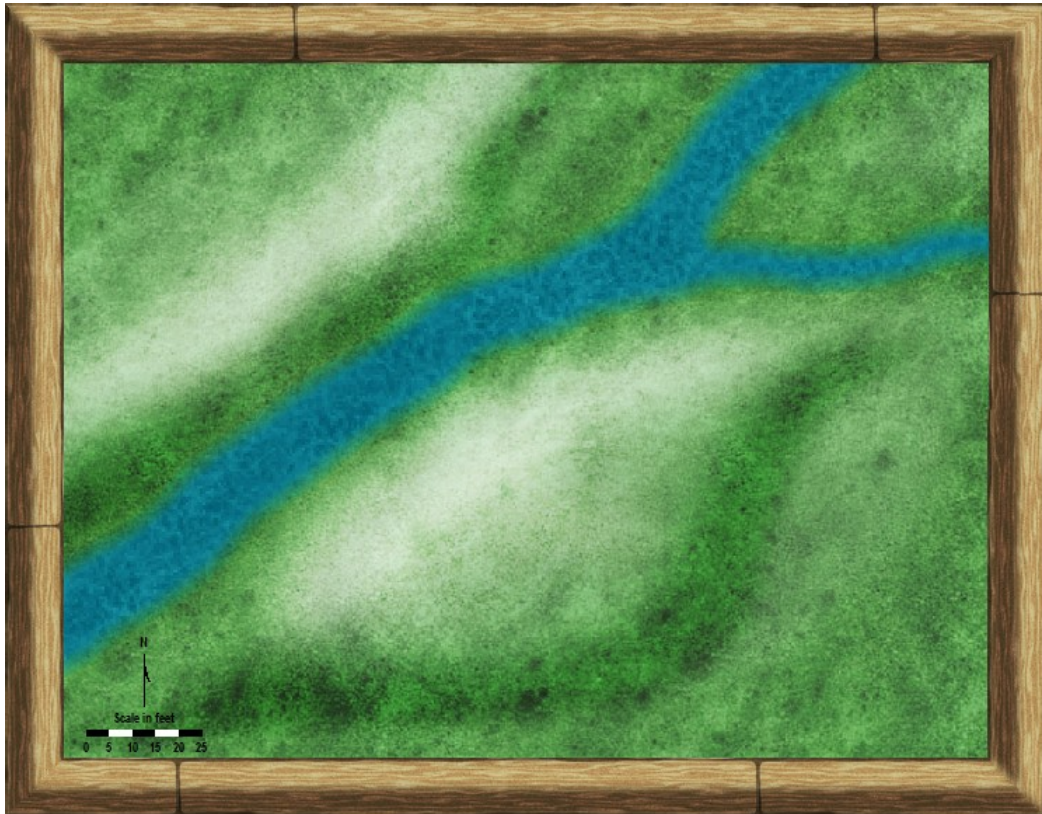

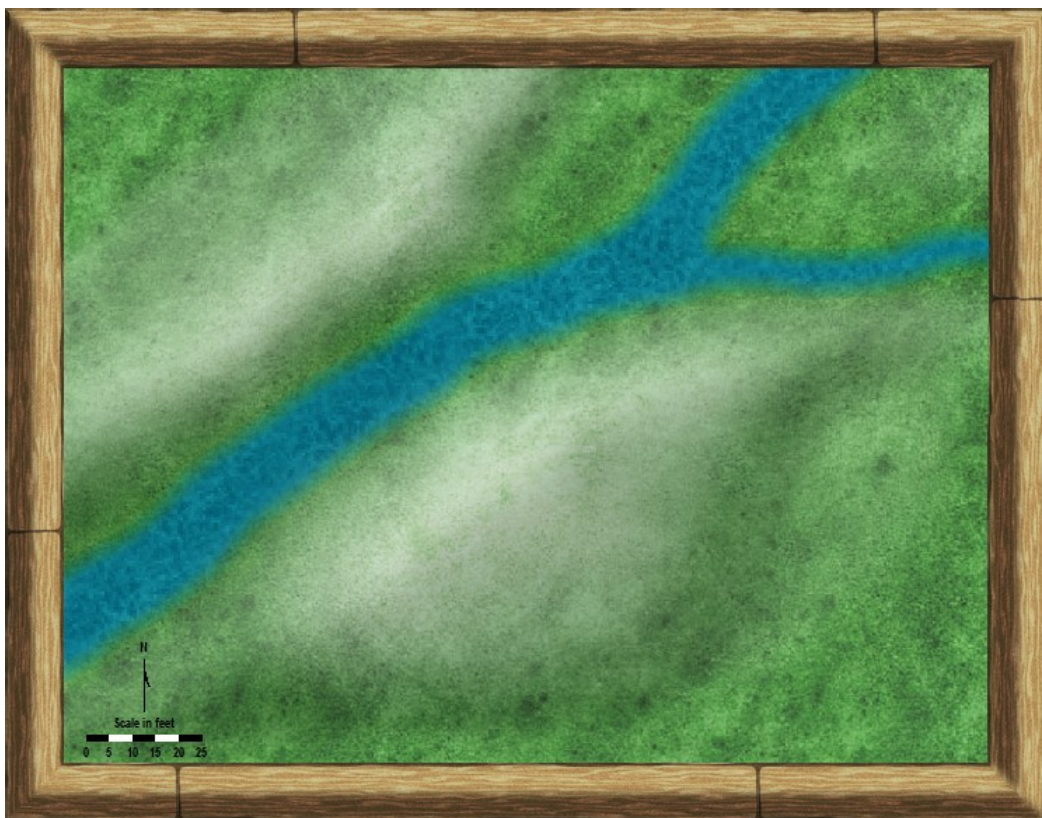**BACKGROUND**   **EFFECT1**   **EFFECT2**

Result with the **Blend mode, overlay** effect on the **EFFECT2** sheet.

Result with the **Transparency** (25% opacity) effect.

In both cases, a **Blur** and an **Edge fade, inner** effects have been added to the **EFFECT2** sheet.

Conclusion

The **Blend mode, overlay** effect is a CC3+ effect that modifies the colors of selected parts of a map without dulling the textures. It can be used to
- add a color filter to just add some variations or colored area to a map,
- simulate a bevel effect at the cost of an additional sheet,
- simulate curved surface, again at the cost of an additional sheet,
- simulate depth with lighter and darker areas
- and even create shaded maps.
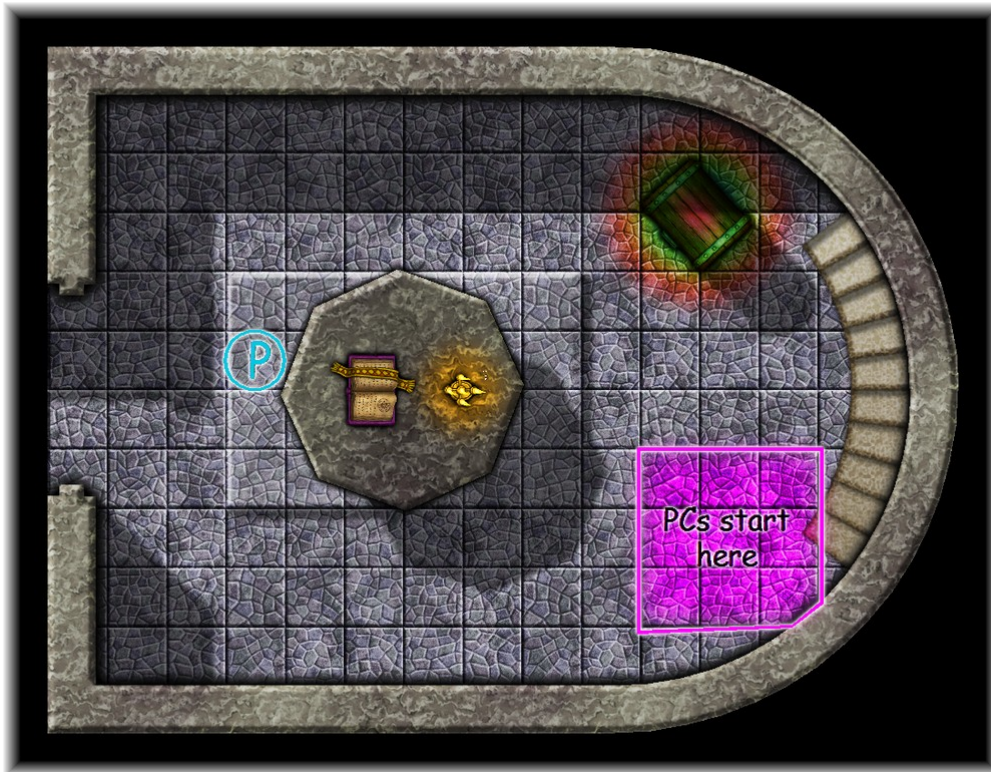
This sample dungeon room has two **Blend mode, overlay** sheets: **EFFECT1** which deals with depth (stairs, floor and raised area) bevels (stone table, raised area and walls) and round shape (chest), with a small blur, and **EFFECT2** for coloring (candle lights, magic effect on the chest, "PCs start here" area) with a larger blur.

If you enjoyed this article, or have other ideas about the **Blend mode, overlay** effect, please leave your feedback here. I'd also like to see your maps on the Profantasy Forum!

Happy mapping!
Joachim de Ravenbel
January 2017

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Map Bits as Fill Styles: how to use exported parts in a dungeon map.

False Spirals: how to create and use them.

Light Effects: an article to reach enlightenment.

CC3 and Perspective: a tutorial to create a top down view of a room.

Multiple use of Multipolys: an article on… multipolys…

Shaded Polygons: Roofs, Rotated Fill Styles ans Perspective: all you can do with shaded polygons in a regional or dungeon map.