

Ebsynth is a program developed by Jamriska Ondrej (Jamriska2018) and is described to be a “Fast Example-based Image Synthesis and Style Transfer” software, released in 2018. This tool can be a true revolution for Original War modders.

Installation.

1. Download **Ebsynth** from this address: <https://github.com/jamriska/ebsynth>
2. Scroll down to “Download” where you can find the pre-built executable file.
3. Create a directory and extract the .zip file at this location.
4. Inside **Ebsynth**’s folder, create another directory for your OW Mapping projects, give it a nice name.
5. Copy the folder “texbynum” from the “examples” directory and paste it inside your OW Projects folder you just created. Rename it to your liking, this is the folder where you will do the mapping work from.
6. Inside your folder, paste these files we provide you with: source_photo.png and source_segment.png

Map Design.

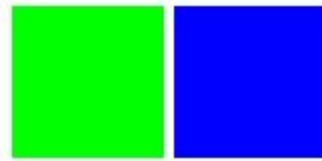
1. Open a painting software of choice (Paint.net for example)
2. Give the image a size of your liking (you can start with a small size to begin with, no bigger than 1700 x 850 pixels. Then you can try bigger sizes, do read the note below, though.)

Note: If you are using a CUDA capable video card (Nvidia), the software will select it automatically, but you might get an error if the map image you are using is too big and your graphics card can’t handle the processing. If this is the case, you will need to switch to your CPU. To do so, edit the “run.bat” file with Notepad, and add the following highlighted command in the same line the other variables are, like this:

```
-style source_photo.png -guide source_segment.png target_segment.png -output output.png -backend cpu
```

Save the file and you will be able to work with bigger sized maps as well. But remember that it will take a noticeably longer time to give your result, depending on your CPU power, compared to a CUDA capable GPU. If you want to go back to your GPU, remove the “-backend cpu” variable and the file save again.

3. We will use the following colors for our Design Process. Color codes are essential because they give a meaning to the program on what you are mapping. Do not forget to check what colours match what terrains on the source you are using (source_segment.png). Obviously, you have to choose one of the available sources provided with this guide as they will define the style in your final GBI render (you can also check the last part of this guide to know how to make your own source image). In general -for instance-, water is pure blue (RGB: 0; 0; 255), normal ground is green (RGB: 0; 255; 0). Later on we can use more advanced coloring depending on the map.

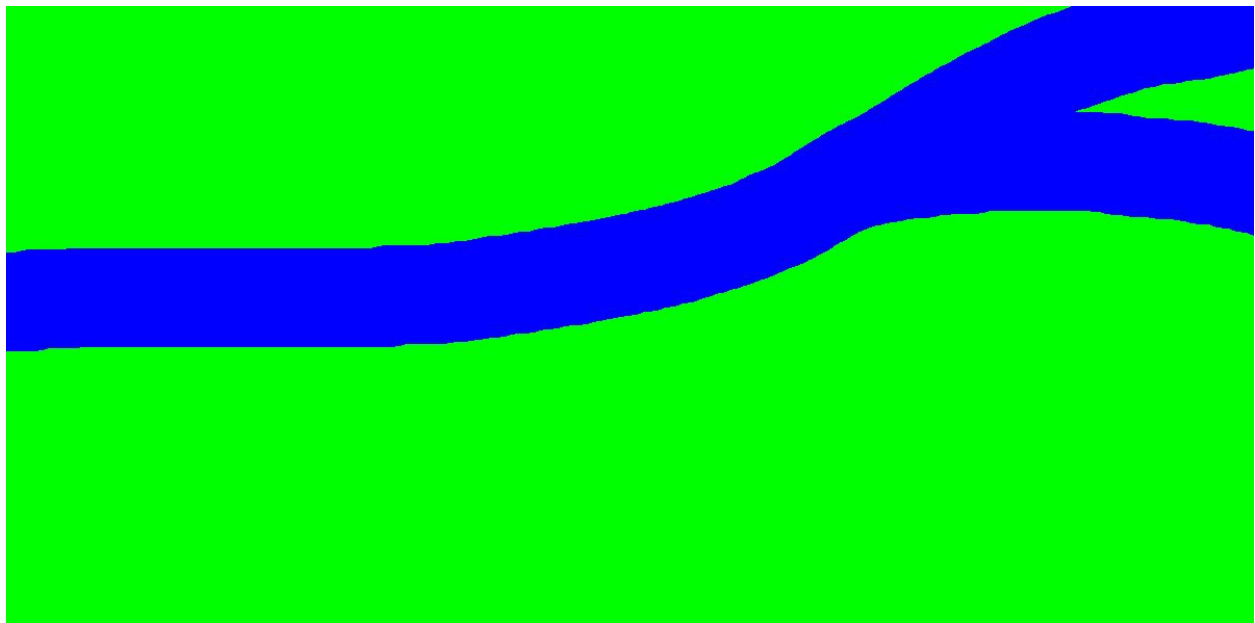


4. Paint your ground color first, that'll be pure green (RGB: 0; 255; 0), you can use the bucket-fill tool. Your map will be now a solid green color.

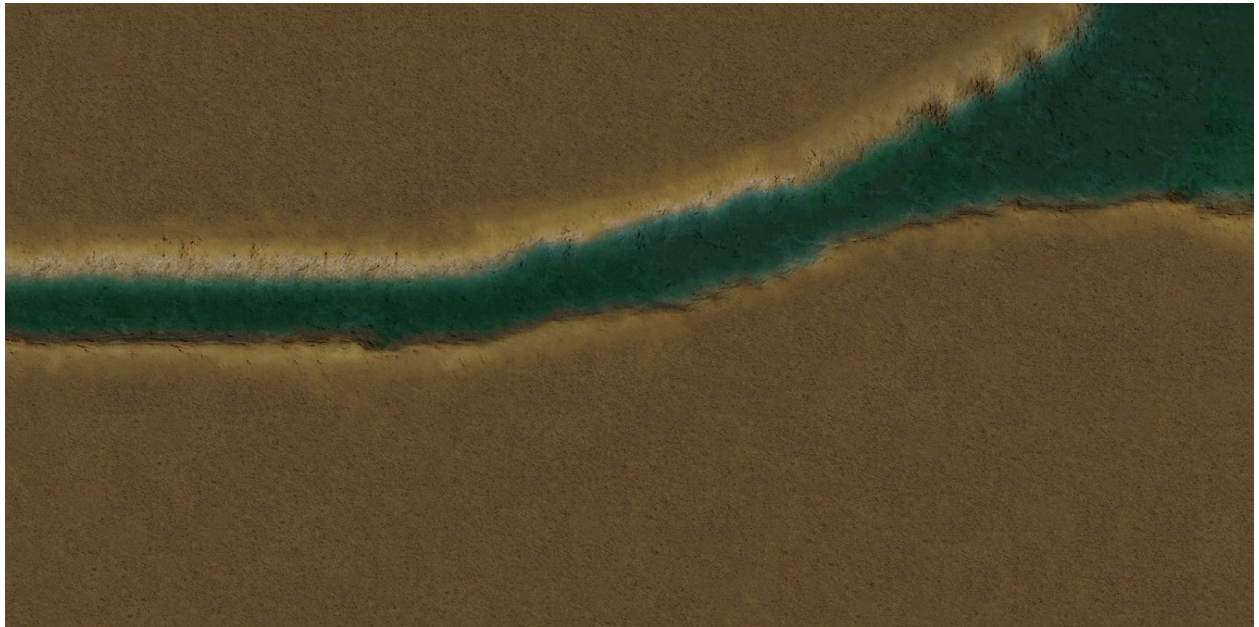
5. Now you can start drawing the water, make sure you draw it thick enough, otherwise it will look pretty thin. (Always try to be realistic with your designs!)

5.1. (For now we are just doing the ground and the water, but you can also do hills, cliffs, rocky land and much more depending on your source segmentation map and its coloring)

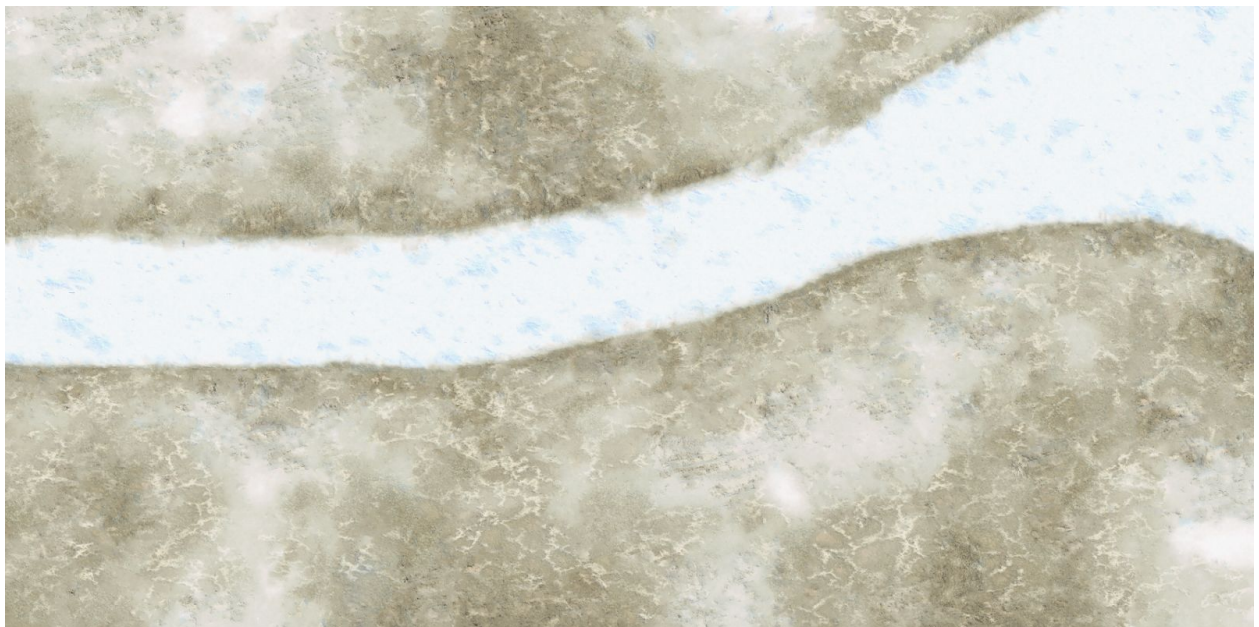
6. If you've followed these steps correctly, you will now have a result similar to this:



7. You can now export this image in .png format, save it with this name in your working directory: "target_segment.png".
8. Run the program and wait until your result is finished. It should be exported as output.png
- 8.1. You will obtain an image similar to this one:



Or... ..depending on your source files, an image similar to this one:



(If you don't, don't worry, you can polish your result. Edit your "run.bat" file and replace the contents with these ones:)

```
@echo off
```

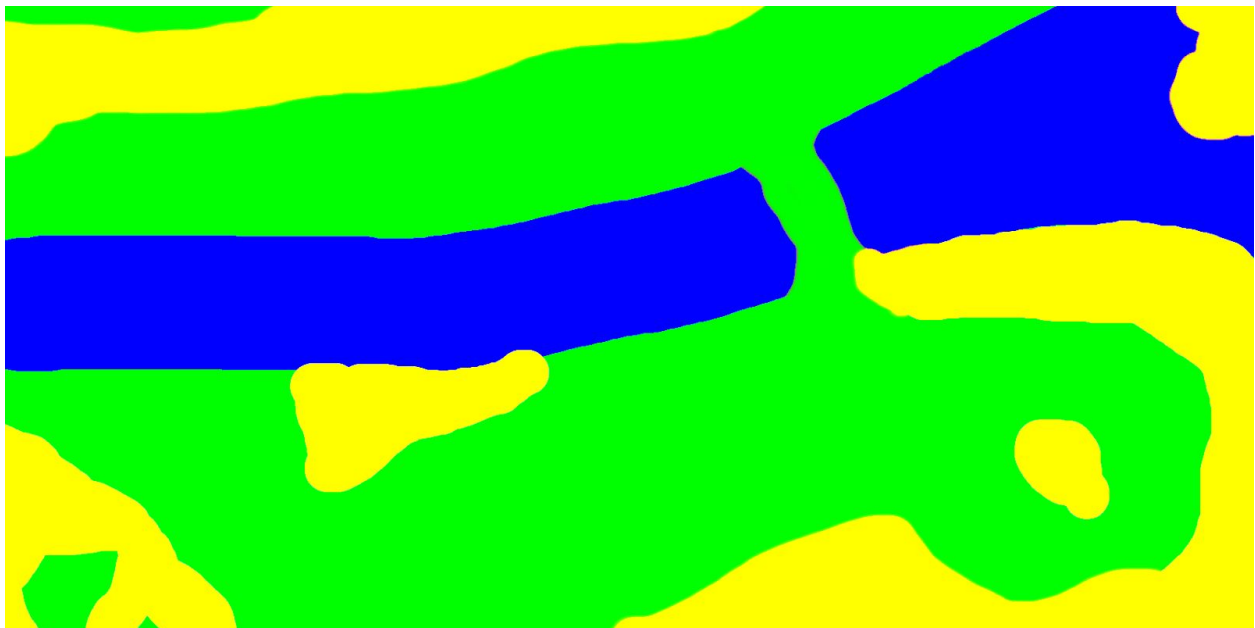
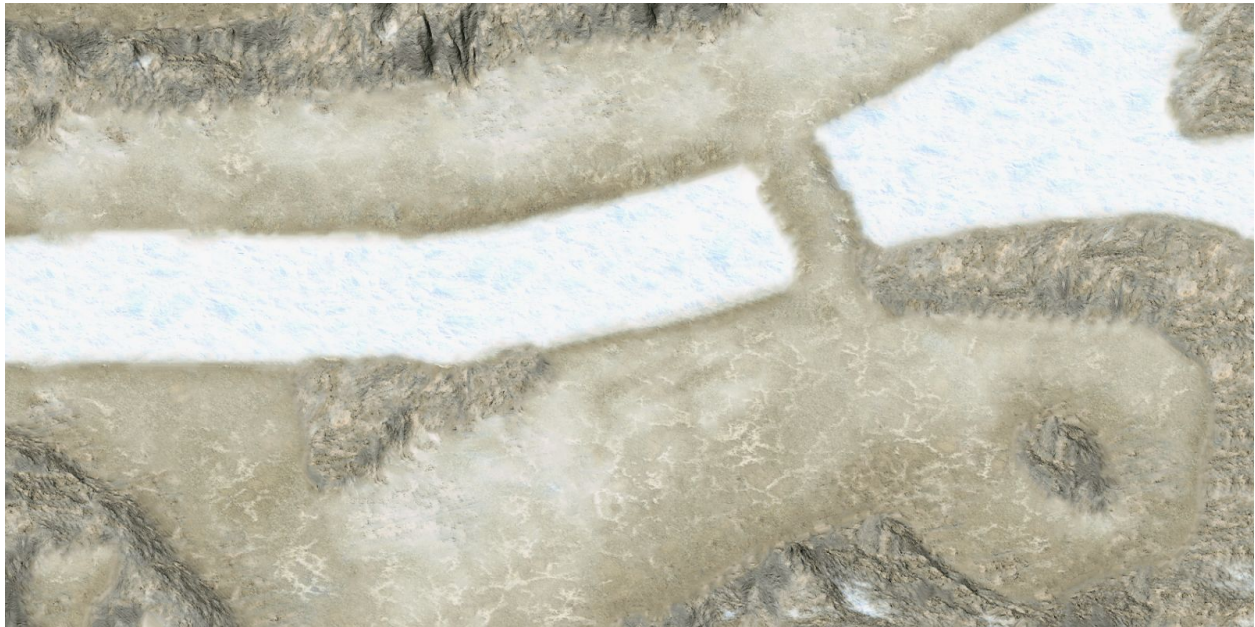
```
setlocal
```

```
set PATH=..\.;%PATH%
```

```
ebsynth.exe -patchsize 7 -uniformity 500 -style source_photo.png -guide  
source_segment.png target_segment.png -output output.png
```

Great! You are now able to create rivers to your liking!

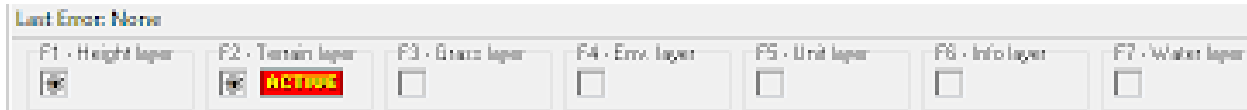
You can also do things like these, by using other colors.



The above image is a more advanced “target_segment.png”. Here yellow (RGB: 255; 255; 0) represents hills/mountains.

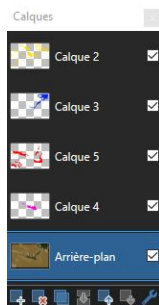
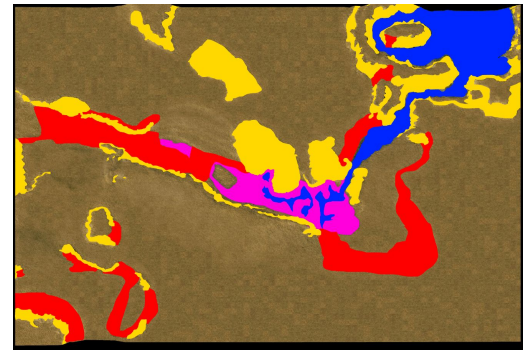
How to create your own GBI sources.

1. Open Original War editor, create a new mod and extract all missions, then select a mission of your choice. Proceed to hide every layer, from F3 to F7.

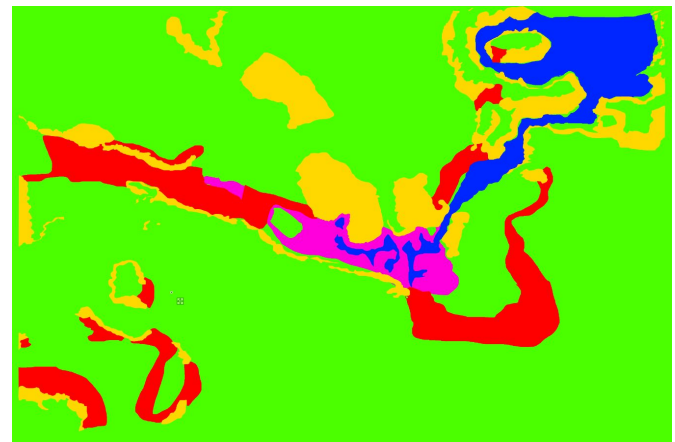


2. Click on Files, Export, Map Visual and open the map visual image on your editing software (such as Paint.net).

3. Create new layers. For each new layer, you want to apply a colour on all different kinds of terrain types. For instance, you want to apply a blue colour filter on every water part... yellow for hills... red for cliffs... purple for swamp... green for ground, etc.



4. Merge every layer starting from the highest one and remove the actual GBI. The final end result should look like this:



5. Save this picture as "target_segment.png" in the folder where you saved **Ebsynth**. You also want to save the original GBI terrain (without any colour filter) in the same directory as "source_photo.png". Both images need to be the same size.

6. Go back to Part 1, Line Guide 3 that explains you to start to draw your new map using colour filters only and run "run.bat" to generate your new terrain.

Credits: **Gwren1** for the first part until "How to create your own GBI sources", **Morgan** for the "How to create your own GBI sources" and snow terrain.