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GRASS TUTORIAL

This tutorial answers to a simple need: making grass. An architectural render, however beautiful it is, needs some good grass to perfect the final picture. Some of you fight with Photoshop in post production, while others keep it flat. Just imagine having great shadows projected on non-flat grass using SSS. This tutorial teaches you how to make such a thing in an easy & fast way. Enjoy!

1. Shooting the grass

A. Shoot preparation



Take some print papers, your favorite camera and take a walk to find nice green, tasty & LONG grass to shoot.

Put the paper on the back of the grass and wait for the sun to disappear behind a cloud.

For the story, this picture was taken in my own garden. Sometimes there is no need to go far ;)

B. Shoot



Your shoot should look like something like this (left).

The red lines define the cropping area, which brings us to the second part of this tutorial: the Photoshop work on the Picture you just took.

2. The Photoshop Work

A. Preparing the Picture



You should end up with something like this.

First of all, clean the background part from the Picture using the “selection by color” tool. The white paper should make the task easier.

You will probably still have some little white parts on the grass. A good trick is to add a green centered stroke to the layer.

B. Making the color map



Duplicate the layer with a transparent background for further use.

Then add a green background picking the color from a middle range green in the picture.

This will avoid any problems if your clip map isn't very precise.

Save the color map.

C. Making the clip map



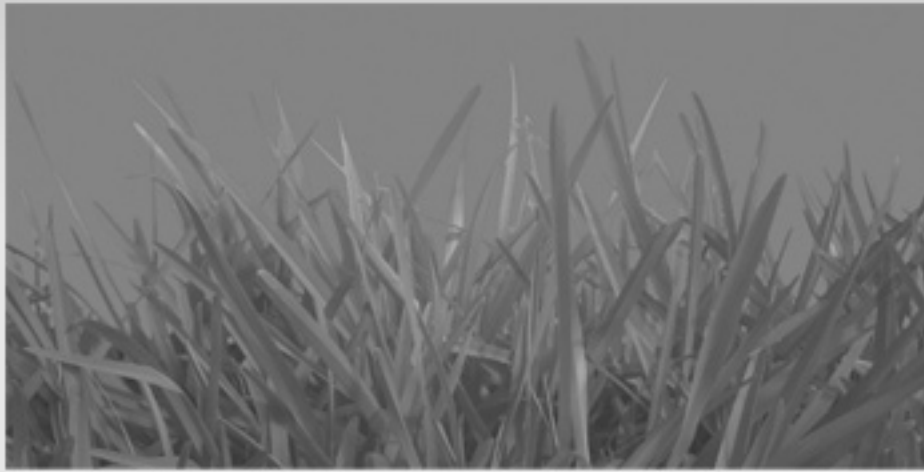
Take you transparent background layer.

Duplicate it to a new image. Add a black color overlay, then a white background using another layer. Flatten the image and then heighten the contrast to the maximum to be sure to only keep a two colored, black and white map

Save the clip map (png or tga).

2. The Photoshop Work

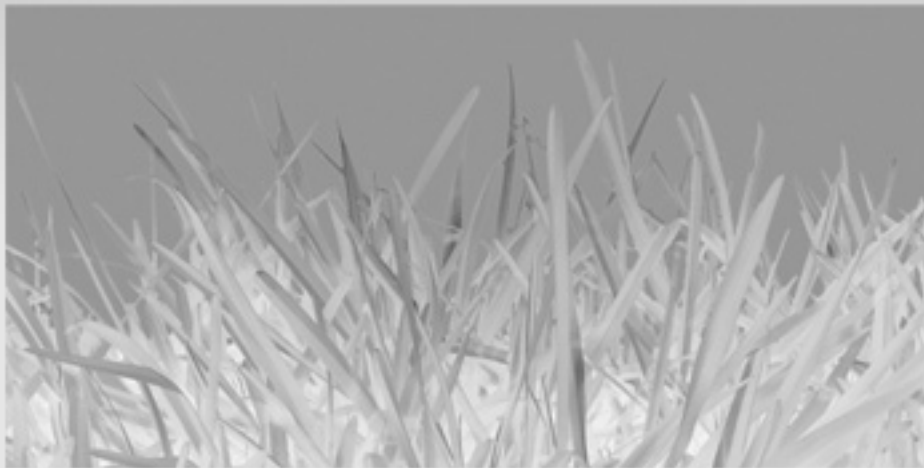
D. Making the bump map



Convert your color map to black and white and then go back to RGB. Level it if needed and your bump map is done.

Save the bump map

E. Making the roughness map



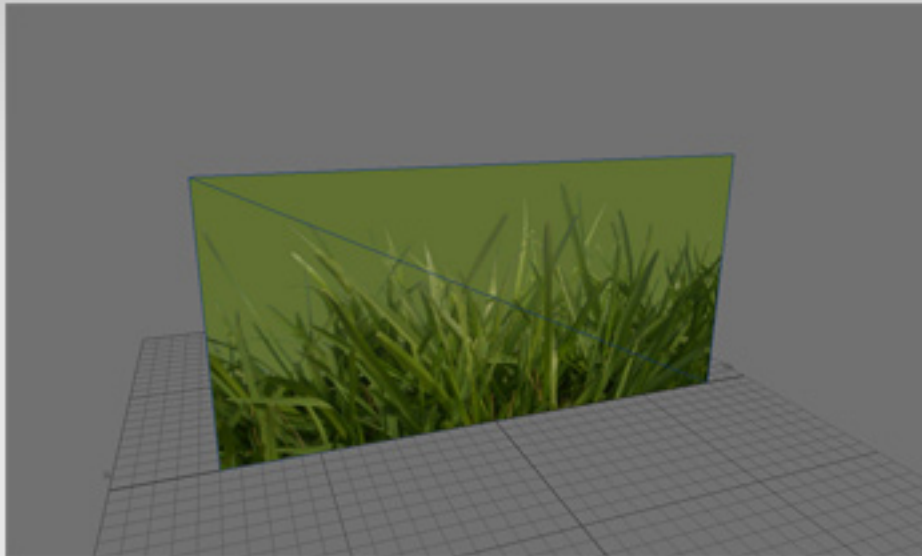
Take your freshly done bump map and invert it. As the white represents 100% roughness and the black 0%, your roughness map should be of a bright grey.

Level it until you have something similar to this image.

Save the roughness map.

3. Going into 3D

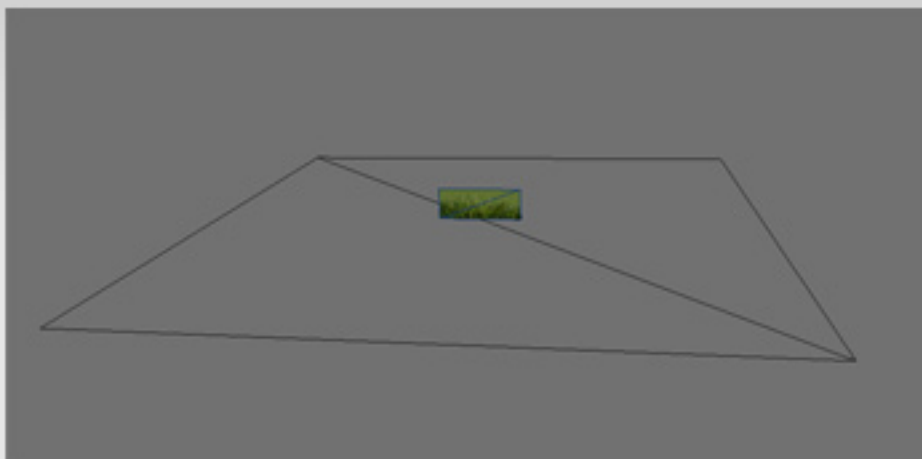
A. Making the plane & UV map



Open your favorite 3D software and begin by making a simple plane. The size depends on the picture.

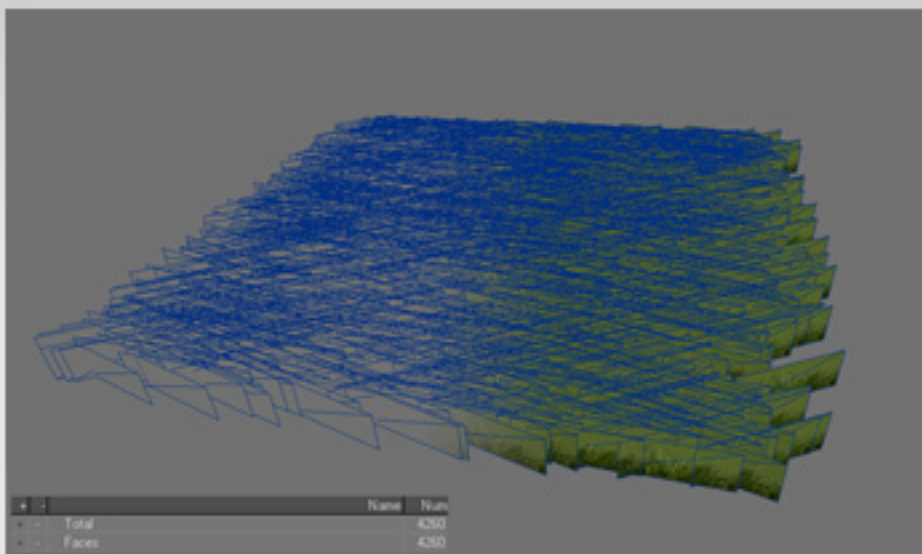
Make a planar UV map & add the color map to it.

B. Preparing for Multiplication



On another layer, create a 1 or 2m² plane to have a base area for duplication.

C. Duplicating



Duplicate the plane on the area with the appropriate tool, depending on your 3D software.

Then copy-paste to another layer, give it some rotation (30-45°), then copy-past to your main layer

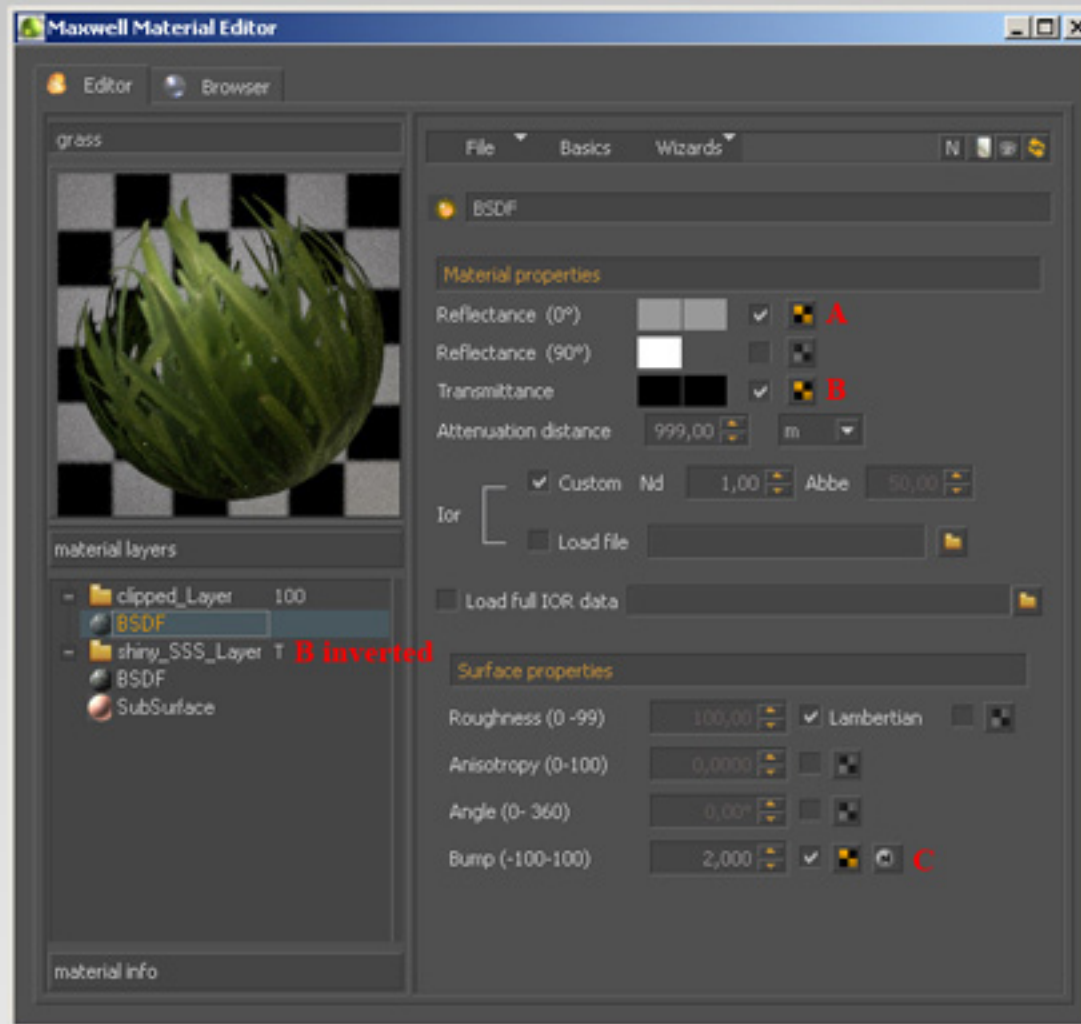
You should end up with something like this (left). Here I have 4260 tripled polygons for 1m², which is very reasonable.

Your grass carpet is done.

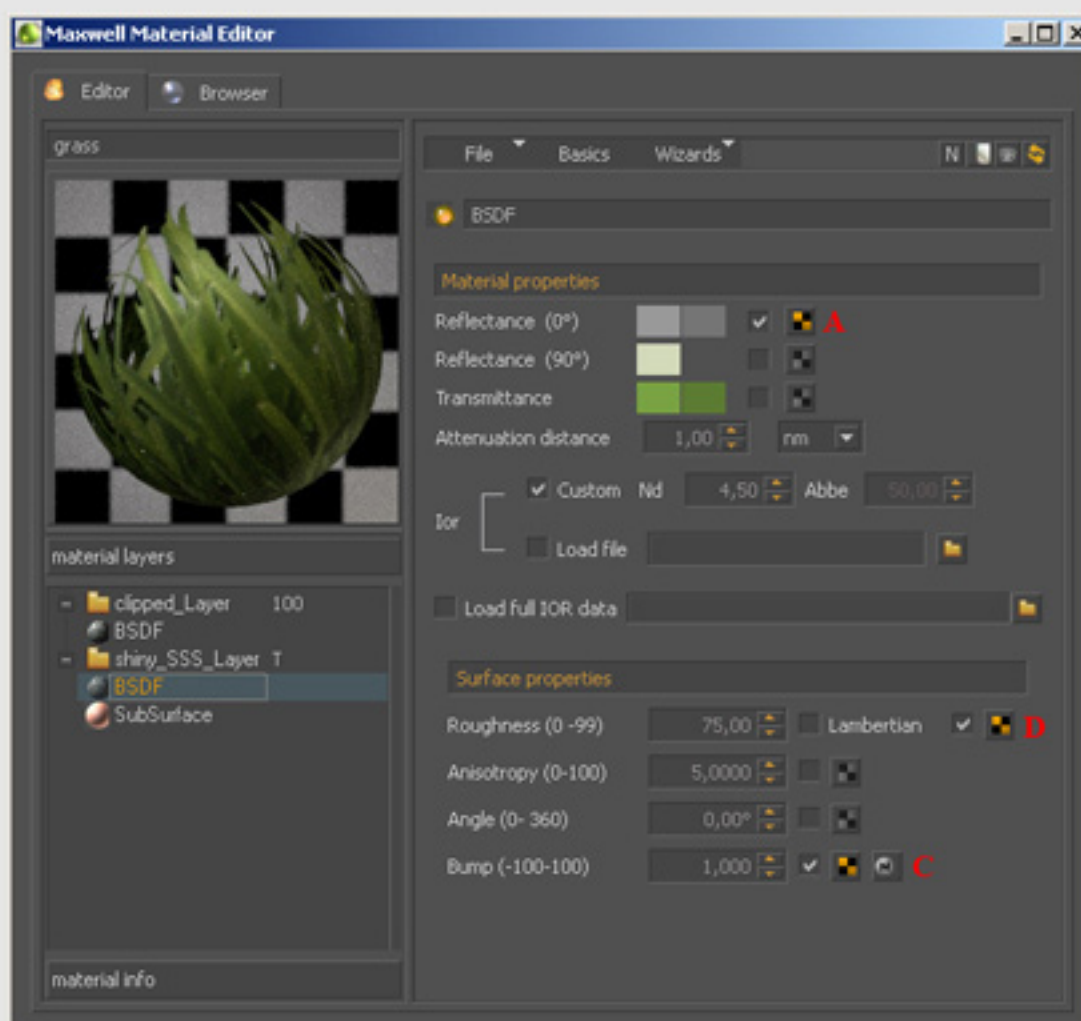
Next step: Making the MXM

3. Making the M-R Material (MXM)

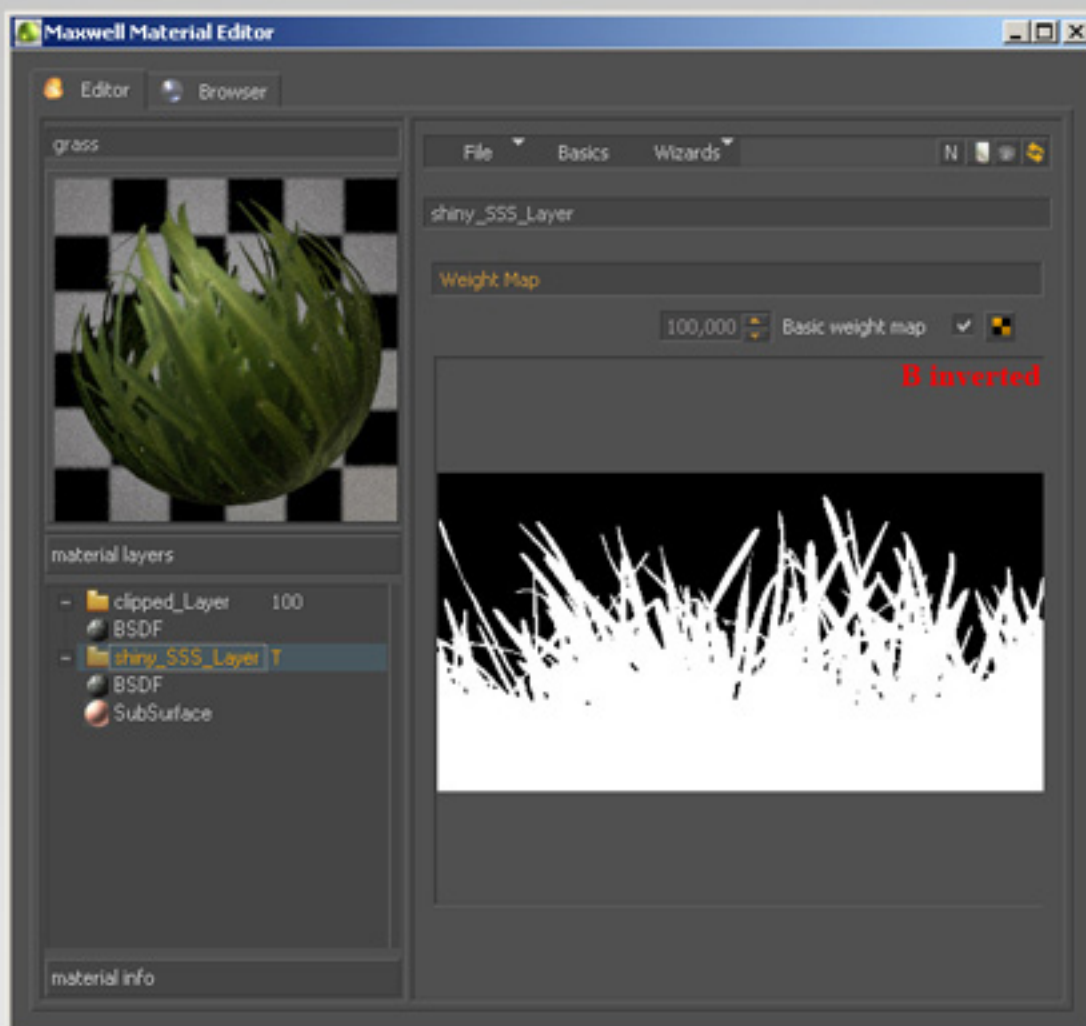
A. Making the plane & UVmap



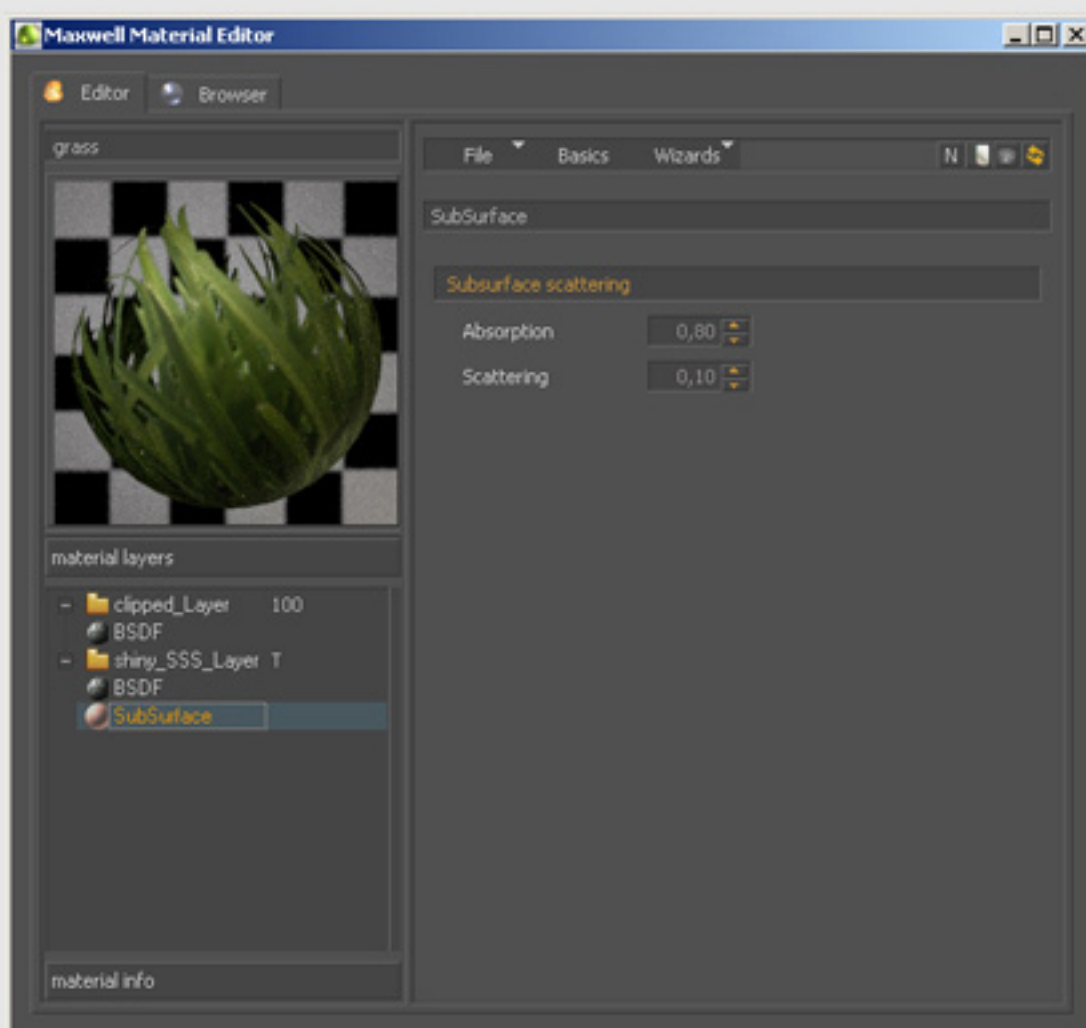
- A. Color map
- B. Clip map
- C. Bump map
- D. Roughness map



The green color on the transmittance is very important: it defines the color of the SSS.



Use an inverted clip map as a weight map for the second layer.



The SSS settings mostly depend on the thickness of the grass you want to reproduce.

The less thick, the more absorption you need.

5. Importing into scene & rendering



MXM Link

http://mxmgallery.maxwellrender.com/news_scripts.php?mode=0&id=1074

From this point, your grass carpet is done. You just have to duplicate it in the scene to cover the grass area.

It is better to use a grass map under the carpet to avoid problems with holes.

Hope you enjoyed