

Stormy Weather Tutorial

My image “Stormy Weather” has been selected for the Terragen Calendar — see at the address:

<http://calendar.ashundar.co.uk/autumn.html>

An image presented by another member of <Planeteterragen@yahoogroups.com>, Olivier Cousinou, has been selected too:

<http://calendar.ashundar.co.uk/summer.html>

I’ve thought that explaining how I realized this image should be useful for the Terragen Community.

Note: as a native French speaker, I probably wrote much mistakes in this tutorial. If you want to correct my bad English, you can write to me at the following address:

<sea-ooh-see@wanadoo.fr>

THE TERRAIN

The terrain was entirely created with Terraformer2 (fig. 1):

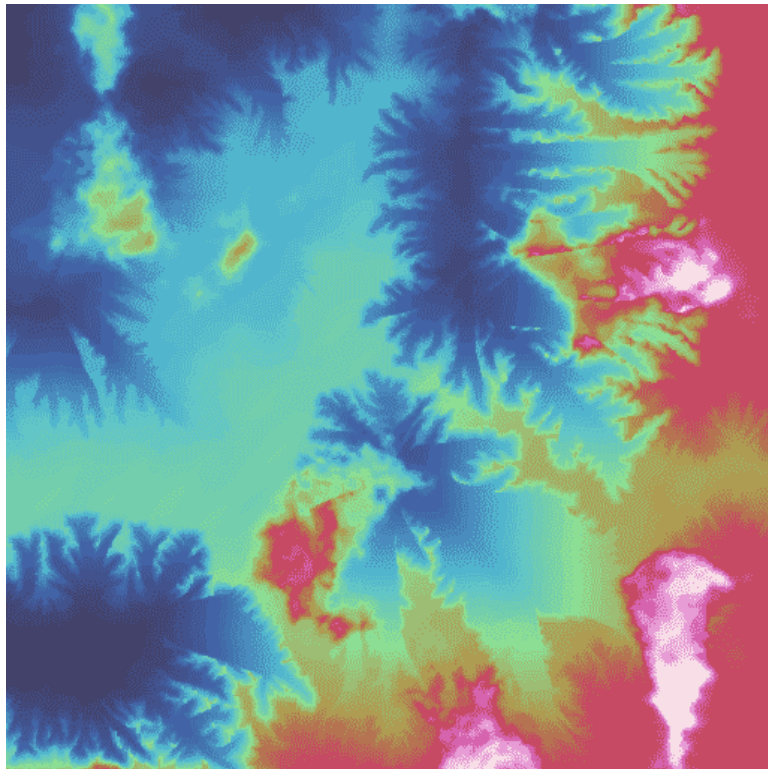


Fig. 1

I don’t remember how I exactly made it (some months ago), but I’m sure having used the Map filter called “Erosion” and I think I didn’t modify the default settings. Nevertheless, the people who should like to get the original terrain (2049 × 2049 pixels) can download it at the following address (zip file 7.6 MB!):

http://www.erotic-surrealist-paintings.us/Stormy_Weather/st_w_terrain.zip

(Note the underscores: Stormy_Weather/st_w_terrain.zip)

The properties of the terrain are in the window “Landscape”, buttons “Size” and “Modify”.

The terrain has a surface of about 944 km² (30720 metres × 30720 metres) and the “Metres point spacing” is 15 metres. “Planet Radius” (default value) is 6370 km.

The altitude (“Set Height Range”) goes from –250 to +2000 m.

SURFACES

The basic Surface Map has a medium Bumpiness and Mimic Terrain” is about 75% (see on fig. 2 the position of the sliders). I selected a salmon pink color (RGB: 256-147-96).



Fig. 2

This mother surface has 7 children:

- smooth low lands;
- dark rock;
- greenish sand;
- under water;
- dark grass;
- lighter vegetation;
- lower burnt grass.

Smooth low lands

Minimal values for Bumpiness and Mimic Terrain. Actually, I wanted a very transparent water and some sand on the light slopes under the water. This sand had to be smooth enough (scale depth: 7.56). That's the reason why the maximum altitude of this layer is 250 m, exactly the same as the water. Its color is an orange gray RGB 112-100-78. Fig. 3 shows the settings:

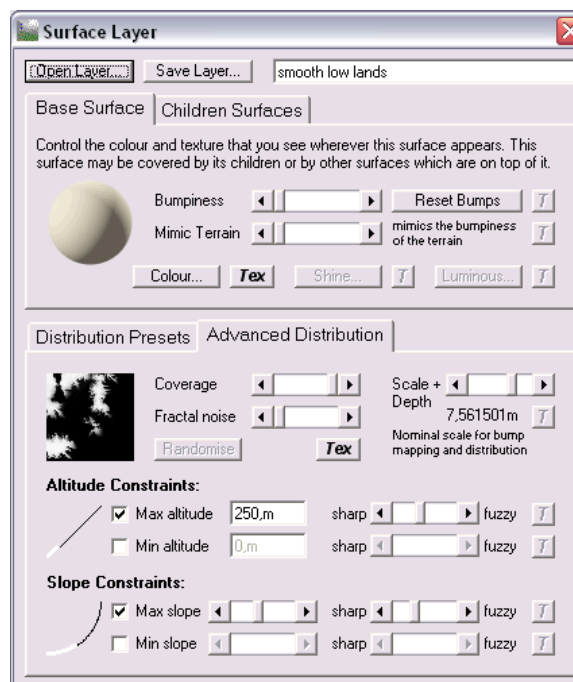


Fig. 3

SOME THOUGHTS ABOUT COLORS

People have often the unfortunate tendency to select too violent colors (I mean “too saturated”) for the ground layers. The first point for a good management of colors is to well know the basics. That's why I send you to the following address, where you'll found the basic principles of the color theory.

As a matter of fact, as it is not too difficult to find the very basic principles in this field, it's nevertheless not so easy to find something really useful for managing the colors in graphic programs, particularly in Terragen. Furthermore, many books explain theories absolutely out of date dating from the end of the XIXth century! (To be honest, I've ceased to search in the books since the years 2000, as I found some most excellent sources on the Web!)

http://www.erotic-surrealist-paintings.us/color_th.htm

(Mind the underscore: "color_th.htm"!)

When he'll have perfectly become master of the basic notions of the two main color systems (additive and subtractive systems), it'll be in the best interest of the "Terragenic" reader to go in depth into the pages on the grays, the browns and the not too saturated colors:

<http://www.erotic-surrealist-paintings.us/grays.htm>

(and the following ones).

A "trik" for the Terragenist: go on the desktop of your PC (hit the keys "Windows+D"); right-click somewhere in a place without icon; then choose:

"Properties > Properties of Viewing > "Desktop" tab > Color > Other"

(Perhaps this translation of my French Windows XP is not absolutely correct?)

Then you'll see the Windows Color Picker as in fig. 4:

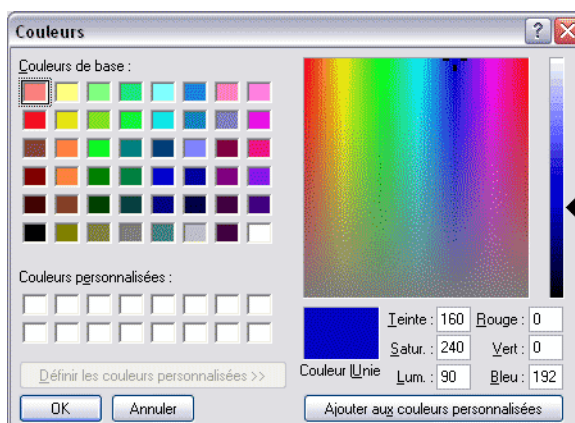


Fig. 4

At the bottom right, you can read:

<u>H</u> ue	:	<u>R</u> ed:
<u>S</u> atur.	:	<u>G</u> reen:
<u>L</u> ight.	:	<u>B</u> lue:

You can write different values in the corresponding fields. The quantities of Red, Green, Blue are very similar to these of Terragen (except that, for some unknown reason, Terragen goes to 256, which gives 257 different colors—from 0 to 256—, but this number is impossible with an 8 bits system, naturally limited to 256 different values).

But let's see the other three values.

- Hue: values from 0 to 239, i.e. from red to red, going through yellow (40), green (80), etc.
- Saturation: values from 0 to 240, i.e. from no saturation to total saturation. To be simple, let's say that a totally saturated hue can nearly only be found in the rainbow. The zero saturated go from black to white, going through all the grays. Little saturated hues are colored grays.
- Luminosity or Brightness: values from 0 to 240, i.e. from black to white. Note that the value of the saturated hues is "120" in the field "Luminosity".

You can find a similar type of window in various programs (e.g. PhotoShop, Paint Shop Pro, The Gimp, Corel Painter, EF Commander, Total Commander, etc.). But there are some differences: In PhotoShop and The Gimp, the saturation and the brightness are in "percent", and the maximum luminosity (brightness)

can correspond to saturated colors. In Paint Shop Pro, the values of Hue/Saturation/Luminosity go from 0 to 255, and the saturated colors have a luminosity of 128! However, these little differences in the numbers and their precise signification do not alter the principles which I'll explain now.

If you want natural looking hues in the Terragen surfaces, you'll have to select little saturated hues. For example, if you want red rocks and if you select 255-0-0 in the window "Surface Colour" of Terragen, you'll get rocks of which the red color will be so bright that it'll look nearly phosphorescent!

If you type the same numbers (255-0-0) in one of the tables I've just spoken about, you'll see that this red has a maximum saturation. Now you just have to reduce the value of the saturation, e.g. to 30 %, and you'll get a pink RGB 255-178-178, i.e. a red mixed with white, similar to the color of the pink granites of the Breton coast. Do you want a darker rock? Reduce the brightness (luminosity) to something like 50 % and you'll get a pinkish gray RGB 128-89-89. Do you want a more red gray? Increase the saturation, e.g. to 70 %, and you'll get the color RGB 128-38-38 (fig. 5).

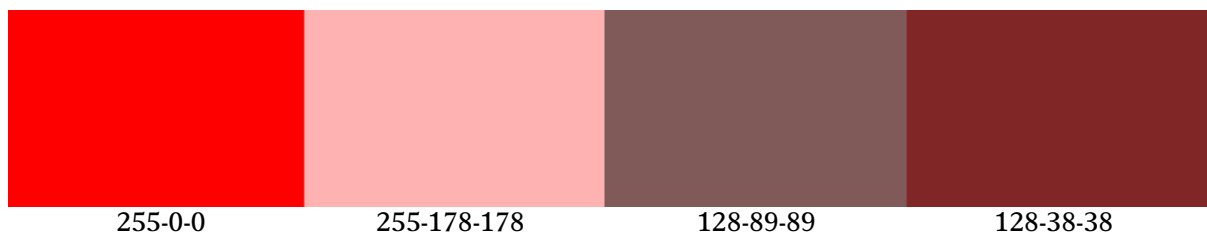


Fig. 5

If you want browns, start with saturated reds and oranges (e.g. from 255-0-0 to 255-128-0), and reduce the brightness (e.g. to 50 %) without modifying the saturation: 128-0-0 and 128-60-0 (fig. 6).

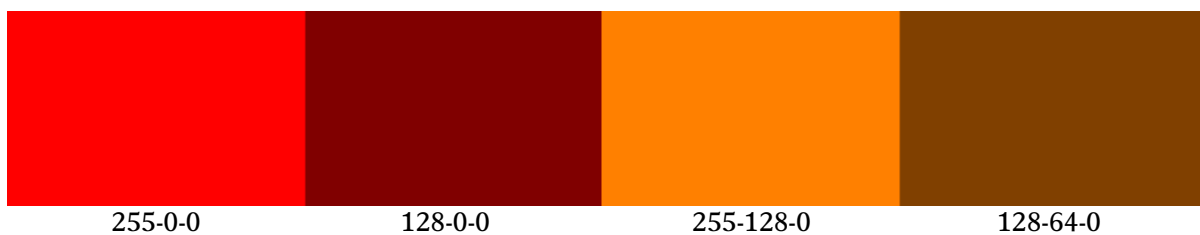


Fig. 6

Do you want olive greens for your grass or other vegetation? Start from pure bright yellow (255-255-0) and reduce the brightness without modifying the saturation. If you want more brownish olive greens, then reduce the green component of your yellow, e.g. RGB 255-220-0, before reducing the brightness. So, if you start from these two yellows and reduce the luminosity to 50 %, you'll get these two olive greens: 128-128-0 and 128-110-0 (fig. 7).

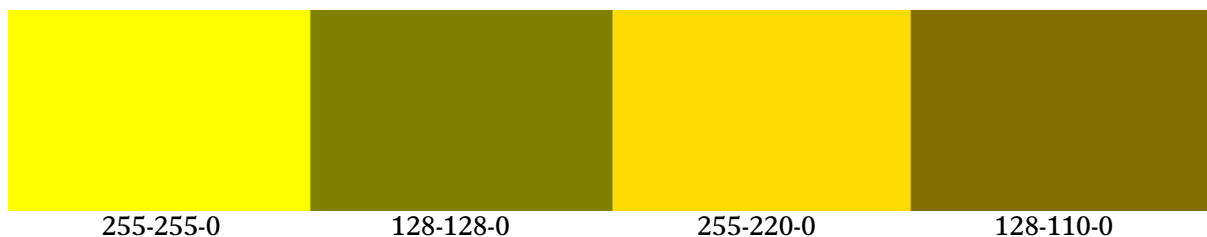


Fig. 7

After a little training, you'll be pleasantly surprised of seeing the ease with which you'll find the colors you want. But I give you an useful piece of advice: always work with the same color table, e.g. the one of The Gimp, or the one of Windows (both are free!), otherwise you'll run the risk of mixing all the numbers in your brain!

Let's come back to Terragen

The color of our sand (RGB 112-100-78) corresponds to an orange (RGB 255-163-0) with a saturation of 30 % and a brightness (luminosity) of 44 %.

As I wanted a total coverage of the areas which are specified by the other settings of this surface, I put the slider “Coverage” to the maximum and the slider “Fractal noise” to the minimum.

This is a good opportunity to explain how these two parameters work — too often indeed, this working isn't understood correctly. Suppose a white surface upon a black one. Our terrain is absolutely flat. The parameters of the black mother surface are “Coverage” 100 % and “Fractal Noise” 0 %, which means it is *absolutely* black. The parameters (settings) you can see in fig. 8 are those of the white surface.

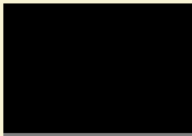



<i>Coverage</i>	<i>Fractal Noise</i>	
0 %	0 %	
50 %	0 %	
100 %	0 %	
100 %	100 %	

Fig. 8

So you easily understand that the parameter “Fractal Noise” generates a random distribution of the surface layer to which it is applied. On the other hand, “Coverage” defines in some way the *transparency* of this surface.

The parameters “Altitude Constraints” and “Slope Constraints” are self-explaining. It isn't necessary to dwell on this point.

Dark rock

This surface layer has a child: “light rock”, which we'll examine in a few moments.

We're talking about rocks of which the minimum slope is about 55 % (see fig. 9). The “Bumpiness” is rather high, because I wanted rather bumpy and rough rocks. “Coverage” and “Fractal Noise” are high too, so that a large area of the cliffs is covered (high “Coverage”), but leaving free areas too (very high “Fractal Noise”).

The color is a dark brownish gray 51-37-28 — which corresponds to an orange red (RGB 255-100-0) of which the brightness (luminosity) is 20 % and the saturation 45 %.

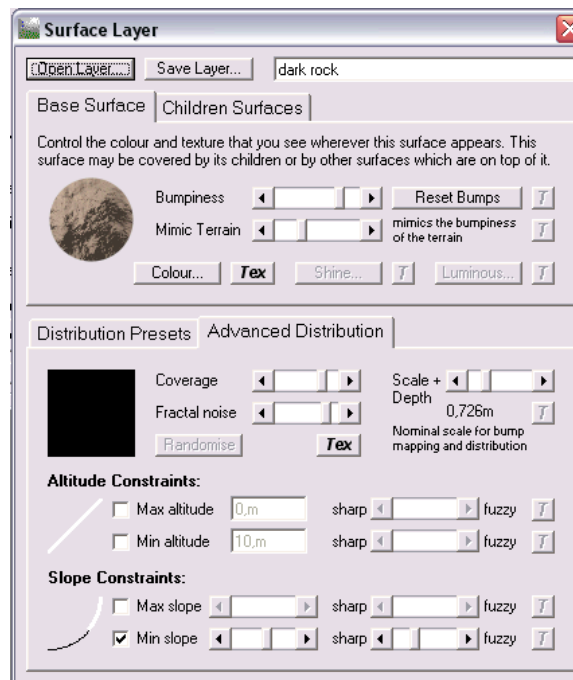


Fig. 10

LIGHT ROCK

The color (RGB 79-60-56) is a little lighter than the one of the mother. It corresponds to a less orange red but with a brightness of 31 % and a saturation of only 29 %. It is thus a less colored (= more gray) rock, but a little lighter than the mother.

Fig. 11 is self-explanatory for the other settings. No comment!

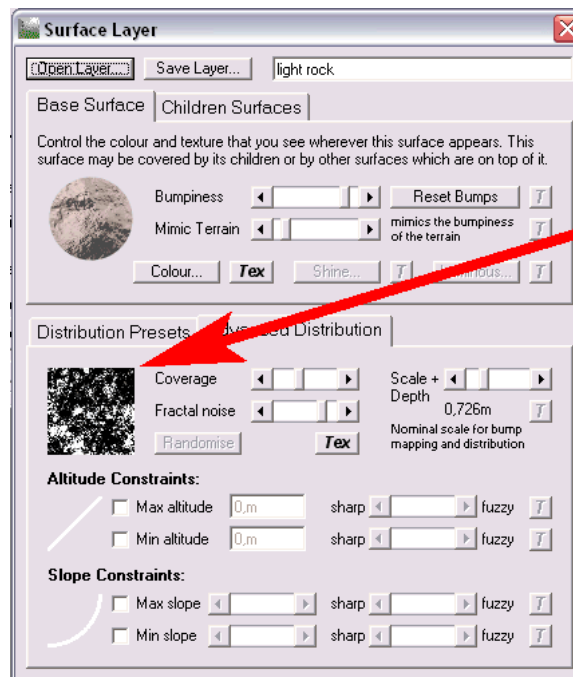


Fig. 11

However, I bring your attention to the preview window (red arrow on fig. 11): it doesn't show the actual distribution of this surface layer, because this layer is limited by the one of the mother, of which the distribution is much less important (on fig. 10, you don't even see it!).

Greenish sand

I've put greenish sand on the beaches. Thus the minimum altitude is 250 m, maximum 375 m. Evidently, the Slope is limited, the Coverage is maximum and the Fractal Noise reduced to zero (fig. 12). Because it is *sand*, the “Bumpiness” is zéro, it goes without saying. This sand can't cling to the terrain (“Mimic Terrain” = zero).

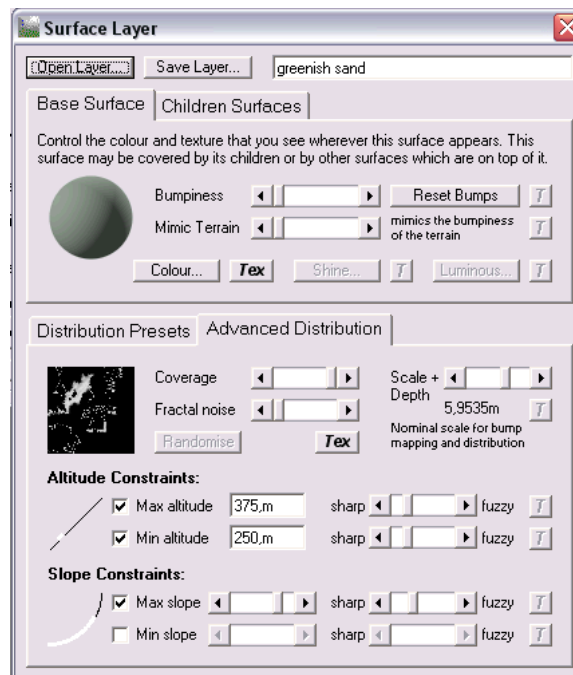


Fig. 12

Let's dwell a moment on the color: RGB 30-36-30. It's a gray (saturation 17 %!), with a little luminosity, thus a dark gray (brightness 14 %) but lightly colored with a green that's very green (hue n° 120 = RGB 0-255-0).

Under water

As I wanted a very transparent water, this surface became necessary. You can see the transparency of the water in the foreground on the left, where you can make out the underlying bottom under the form of a greenish trace, and under the right part of the rock which emerges on the left side of the image.

I wanted that the ground was as visible as possible through the water. So it had not to be too dark. That's the reason why I selected a very light base color: RGB 191-186-163, i.e. a light gray with an orange hue. (Saturation: 15 %, i.e. very little colored, and brightness 75 %, i.e. very light — this hue corresponds to an orange yellow RGB 255-209-0).

Fig. 13 shows the other parameters. I bring your attention on the altitude. I wanted that this texture came very near the surface of the water, so I selected a very important “Sharpness” (slider near the left end).

However, I wanted the rocks to keep their original color under the water. So I didn't authorize this surface to cover the rather vertical slopes (“Max Slope” at about 70 %, with marked “Sharpness” — slider at about 25 %).

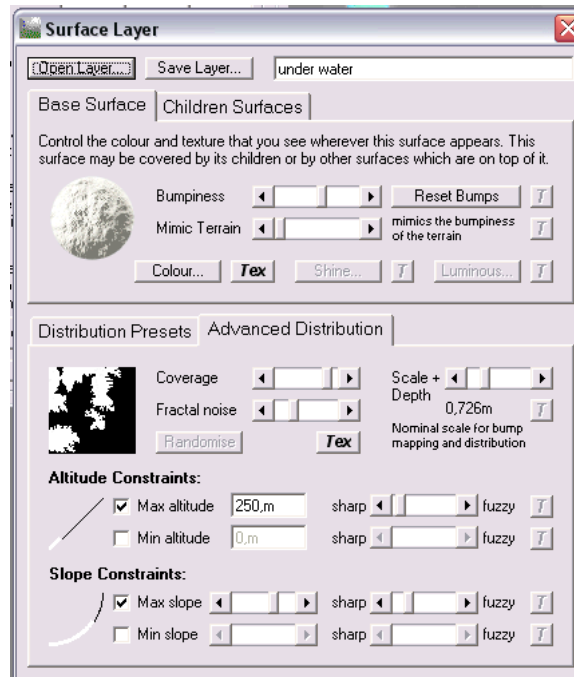


Fig. 13

This surface layer is the mother of two children: there exist aquatic plants indeed!

GREEN VEGETATION

Limited slope because I didn't wanted too much green plants on the rocks (see fig. 14). I don't want to repeat myself, so I ask you to study the parameters of fig. 14.

However, I bring your attention to the color: RGB 150-120-47. The interesting point about this hue is the fact that it corresponds to an orange yellow (RGB 255-181-0), of which the small luminosity (59 %) and the low saturation give the impression of a very brownish olive green

This is an opportunity of examining another color problem which manifests itself in Terragen.

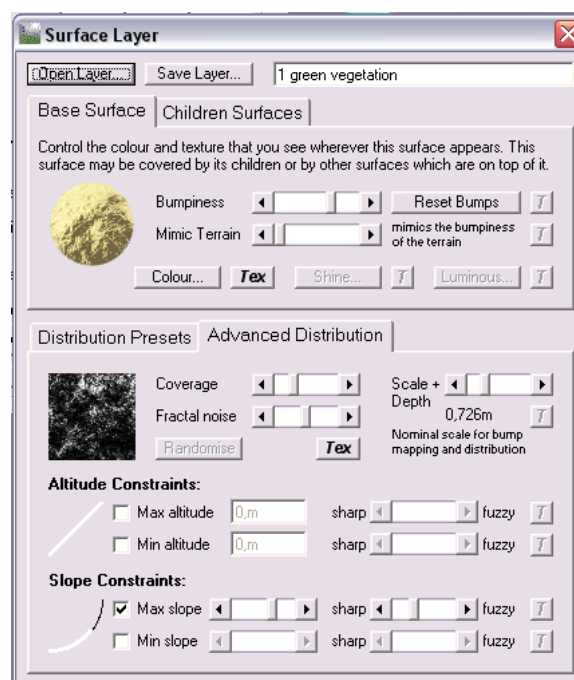


Fig. 14

Let's examine fig. 15 and fig. 16. Fig. 15 shows a preview of the so-called "Actual Colour", which should corresponds to the RGB values in the superior part of the window. Actually, it isn't true. I've put the

actual RGB 150-120-47 color in fig. 16: it is much darker! How is it possible? That's very simple: "Actual Colour" is the color *as you can see it in direct sunlight!* You can only see the actual 150-120-47 color in the second box of the upper color row after "Photographic Preview". This hue corresponds to an excellent illumination (about 1000 lux) of a sample of this color inside of a house or of another building.

As for the color which you see in fig. 14, under "Base Surface", it is still lighter: you can't really trust it.

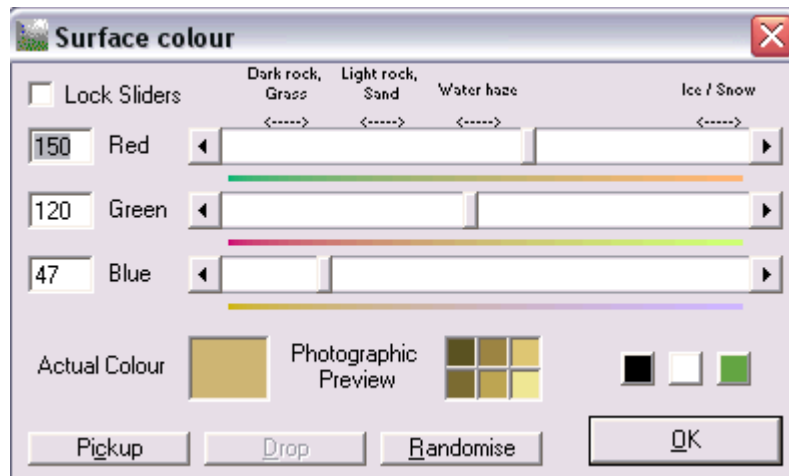


Fig 15



Fig. 16

BROWN VEGETATION

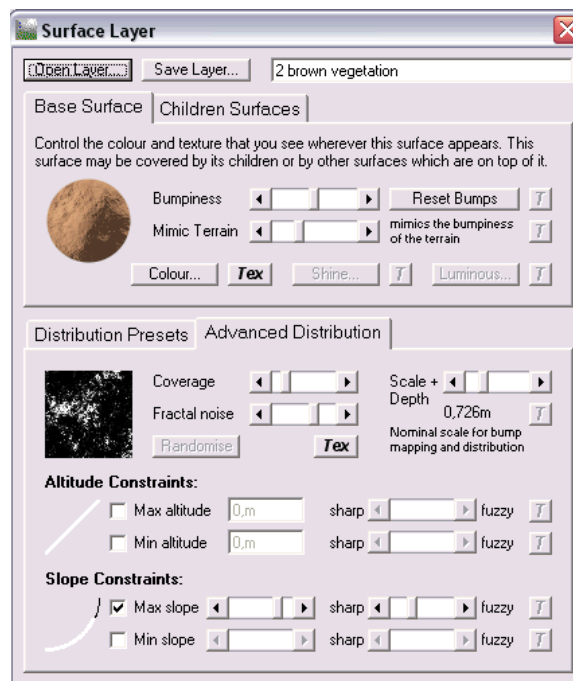


Fig. 17

These plants are authorized to climb on more abrupt slopes than the preceding ones but the "Coverage" is less marked. See fig. 17.

I selected an RGB 74-37-19 color, which corresponds to a red with a light orange hue (RGB 255-65-0), but with a limited brightness (29 %) and a saturation of 74 %.

Dark grass

Still a poor lighted orange (38-21-0), but this time the saturation is 100 %, with a low brightness (15 %). In fact, it's thus a brown grass, but this brown is more or less greenish! (With a 100 % luminosity, it should become an orange color RGB 255-141-0.)

See fig. 18 for the other settings.

This mother (dark grass) has a child: "light grass".

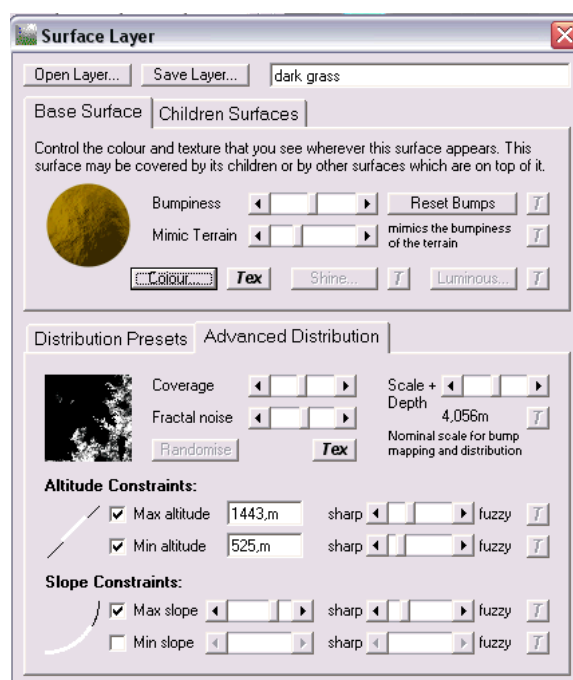


Fig. 18

LIGHT GRASS

Here I increased considerably the "Fractal noise" (to the maximum: 100 %) with the aim of getting a very randomized distribution of this light grass over the dark one (fig. 19).

Once more, let's be interested in the color: RGB 138-90-0, which is a completely saturated color (100 %), but with an illumination (= brightness, luminosity) of only 54 %, which gives to this originally orange color (RGB 255-166-0) a really greenish look.

The lesson to draw from all these olive greens

Now that we have had a close look at all these olive greens, we realize that very often the greens of the nature only are poor lighted yellows (or, if you prefer, yellows mixed with black). Besides, some day someone has said to me that the great surrealist painter Paul Delvaux had never utilized a tube of green color, because he contented himself with mixing some yellow and some black, sometimes with a very small quantity of red. I've visited several times his museum on the Belgian coast (in St-Idesbald, a little town near the French frontier) and I point out to you that there are some very interesting of his paintings in the

“Royal Museums of Fine Art of Belgium”, in Brussels, section “The Museum of Modern Art” (9, “rue du Musée”, near the “place Royale” — entrance through the “rue de la Régence”).

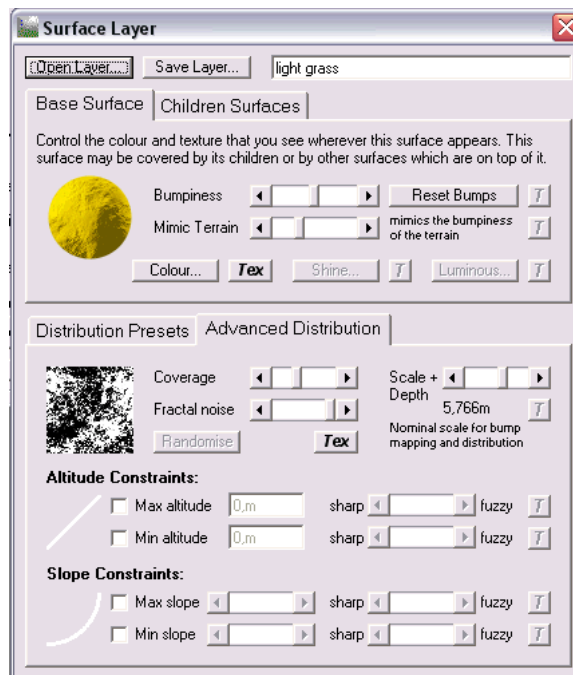


Fig. 19

Lighter vegetation

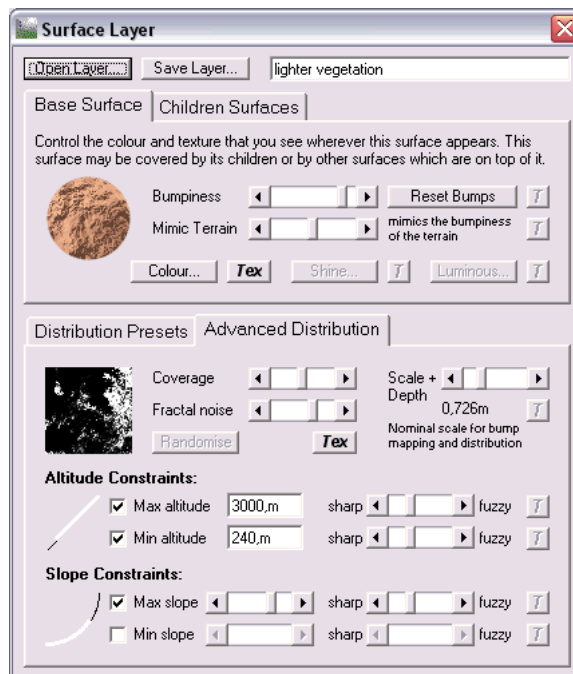


Fig. 20

This is a reddish vegetation, which has gone red under the summer sunlight — remember: we are in autumn. Fig. 20 shows its parameters. As for the color, RGB 115-51-30, it's once more an orange (RGB 215-63-0) a little desaturated (saturation 74 %) and poorly lighted (luminosity 45 %).

To this gingery mother, I gave a still more autumnal child: “Gold Yellow”, and this child will still get two children and a grand son (isn't it a beautiful family, is it?).

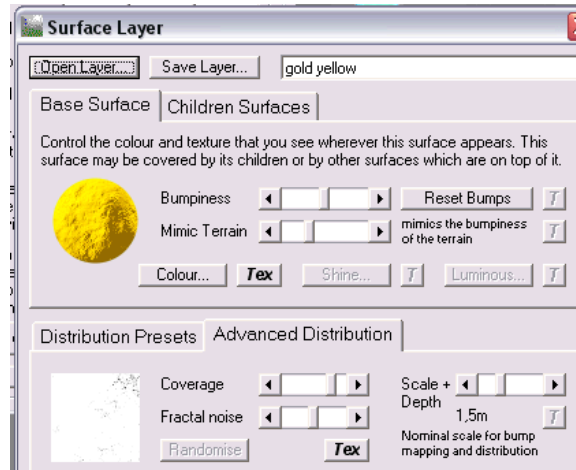
GOLD YELLOW

Fig. 21

Here the color is RGB 255-135-0, a fully saturated orange with a brightness of 100 %. See fig. 21 for the other parameters. No “Constraints”. This layer has two children and a grand son.

First child: dark gold (fig. 22)

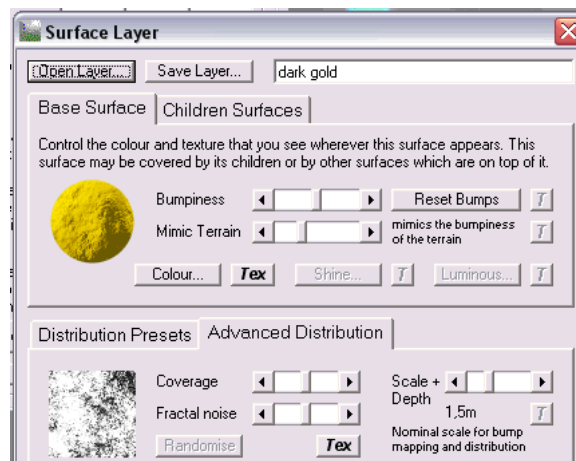


Fig. 22

Color: RGB 138-90-0, a 100 % saturated orange (RGB 255-166-0) but poorly lighted (luminosity: 54 %).

Second child: burnt sienna (fig. 23)

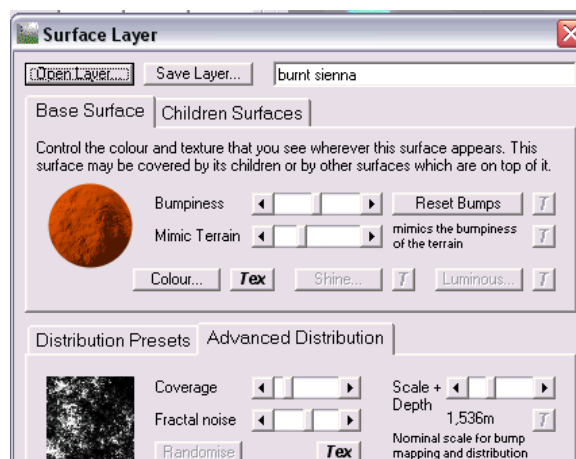


Fig. 23

The color of this earth, daughter of the preceding one (and grand daughter of “Gold yellow”), is RGB 80-8-0, a red with a very light orange shade (RGB 255-26-0), saturation 100 % but rather poorly lighted (luminosity: 31 %).

Grand child: burnt umber (fig. 24)

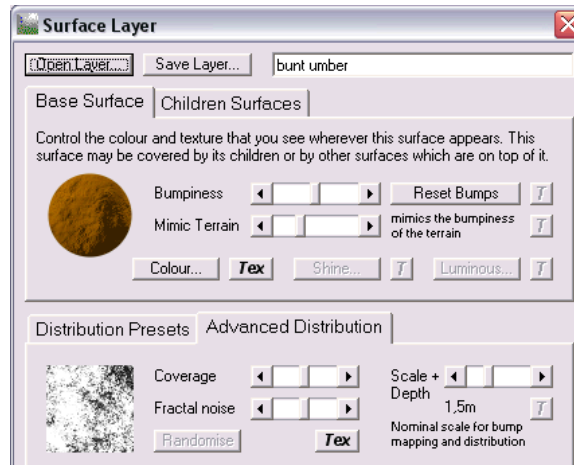


Fig. 24

Color: RGB 40-13-0, the orange shade of this red is a little more marked than in “burnt sienna” (RGB 255-83-0), saturation 100 % but much darker (luminosity: 16 %).



Fig. 25

On fig. 25 you can see the hierarchy of all these herbs and vegetals.

Lower burnt grass

Color: RGB 81-36-12, a grayish brown. In fact, it is nearly the same red than “Burnt Umber” (RGB 255-89-0) but saturated to 85 % and better lighted (luminosity: 32 %).

Why adding this layer to an already heavily loaded surface?

Because I wanted to add here and there some brown touches. So this even little saturated layer, which adds some shimmering to the former colors. Fig. 26, where this color has been replaced by RGB 255-0-150 (a very “fluorescent” magenta), show that this layer is *actually visible*.

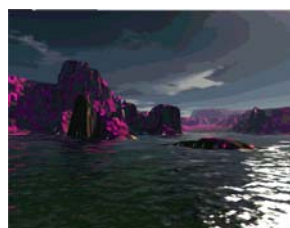


Fig. 26

You'll see the other settings on fig. 27.

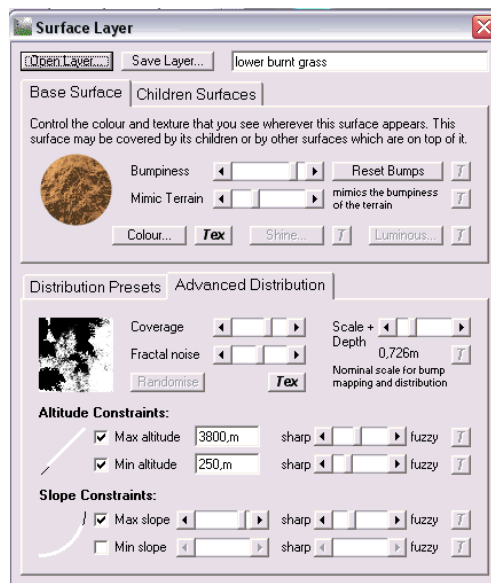


Fig. 27

GREENISH GRAY

Only child of “Lower burnt grass”, this surface makes up for the excessive distribution of the preceding one. See the parameters on fig. 28.

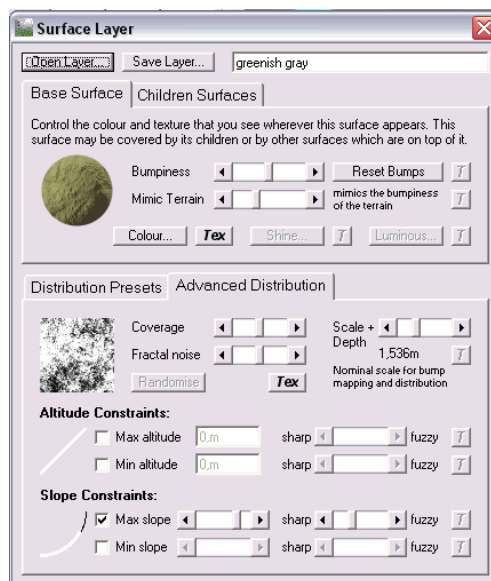


Fig. 28

The color is RGB 41-40-15. Once more, it's a poorly lighted yellow (RGB 255-245-0) (luminosity 16 %) and not too saturated (63 %), which produces an olive green. You may consider it as a gray with a little yellow hue (RGB 41-41-41 would be a neutral gray, indeed).

Now, the surfaces are over.

Maybe some people will reproach me for the complicated character of this “Surface Map”. But let's remember I made it for the light of the midday sun. At this time of the day, all these shades are much more visible.

It's advisable always to test the color of your surfaces under a midday sun, with the light coming from behind you. It's the only way to be sure that your colors are good.

Until now, with the help of this tutorial, we've been able to be making clear progress with the management of the colors in Terragen.

RENDERING CONTROL

Image Size

5280 × 4080 pixels. Length of the rendering: 06:39:27. I haven't had the time to get a larger rendering because it was the last day before the expiry date. I had to be sure the image would be ready in time.

Render settings

Quality

"Accuracy": "Atmosphere" & "Clouds Shading": sliders in the middle of their slides (= default values). I rarely modify these settings.

I've checked "Fast Sub-Pixel Smoothing" and "Ultra", but not "Extra Blended Detail". When Terragen's version 0.9.19 came out, I did some experiments and did see that "Ultra" really was a plus, but I founded that "Extra Blended Detail" needed much more time, without offering great advantage: the image was only a little more blurred. So this setting has become kinda rule of thumb in my renderings.

Options

Miscellaneous: the three options are checked.

Colour Settings: Gamma Correction: I put the gamma on "1" for getting less haze and a more contrasted image, because I wanted to give the impression of "stormy weather".

Image

Cf. supra "image size".

Advanced

Having at my disposal 1024 MB memory, I put the "Max Size of Render Buffers" on 350 MB.

REMARK ABOUT THE GAMMA

The higher the gamma and the more haze in the image: the more you have the impression that the colors are less saturated, more mixed with white.

If you want to get more "dry", more saturated, more violent images, the first trick is reducing the gamma. But it's impossible to go lower than 1! If you find you still get too much haze, what are you going to do?

A very easy way is playing with the parameter "metres point spacing": click the "Size" button in "Landscape": then you get a "Landscape Settings" window.

The default setting is 30 metres. I've already told I put it on 15 metres for this image. But you can go much lower. I've made experiments until 0.1 metre (= 10 centimetres!). As the terrain becomes then very small (204.9 × 204.9 metres), it's easy to conceive that the haze is less visible. Conversely, if you increase this parameter, you'll get a more intense haze, and even fog. (I'm living about 125 miles away from the Pyrenees, so the haze prevents me from seeing them, except for 4 or 5 days in the winter, when the air is particularly dry. If these mountains were only some meters away from my village, I think the fog wouldn't often be thick enough for hiding them.)

Camera Settings

Photographic medium: High contrast photochemical film (= default).

Exposure: 1.414 (= default).

Zoom: 1.31

Now's the time to point out that, when you choose the quality of the film (Photographic Medium), the setting "High Tolerance photochemical film (original)" gives more hazy images and conversely, the setting "Traditional computer graphics (linear)" gives more saturated images.

This is thus a additional and indirect way to play with the gamma.

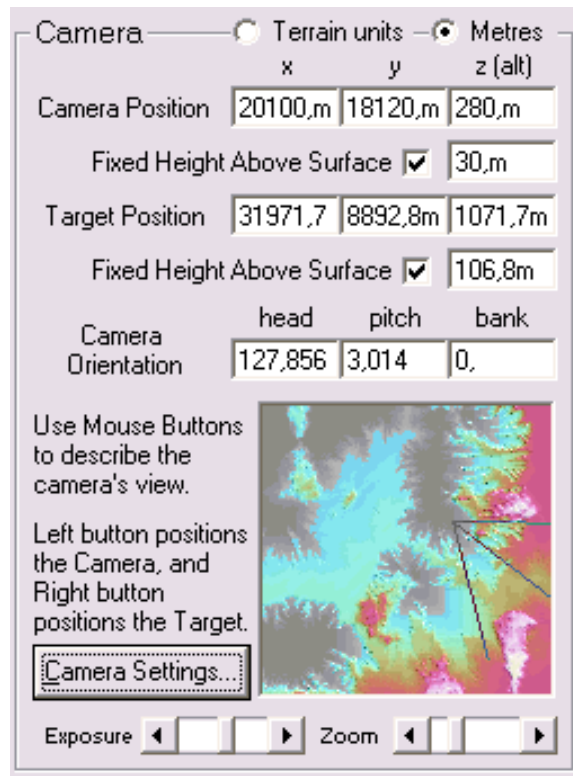


Fig. 29

Fig. 29 shows clearly the other camera settings (Camera Position, included its altitude, Target Position).

Camera orientation

“Head”: azimuthal direction of the axis of the camera in the horizontal plane, here: 127,856°;

“Pitch”: angle of the camera up- or downwards (in the sagittal plane): here: 3,014°, i.e. the camera points a little at the sky.

This is an often neglected point in the renderings we can see in the groups, where it isn't rare to observe a little interesting foreground overrunning the whole lower half of the image.

It is compulsory to do several tests for determining which angle of view gives the most aesthetical image. The preview thumbnail isn't enough to see it. You need a full-screen image, even a blurred one. It's my habit to do tests with 600 × 450 pixels images (often without putting the slider "Detail" on the maximum) and to look at them with IrfanView (set on "full-screen view"). This kind of test only takes minutes. The image is blurred but you get a good idea of the framing and the colors. You still can make all the necessary corrections before embarking on a whole night rendering.

If you're working with an image with visible sun rays (e.g. a sunset), it becomes essential to do numerous tests, each one differing from the preceding one by a small modification (less than one degree!) of the position of the sun in both planes ("Heading" and "Altitude"). Don't forget to save each ".tgw" file, giving

each file a name corresponding to the sun's position. (You can write down the parameters of each test on a scrap paper or in a text file made with WORDPAD.) Sometimes I did 50 to 100 similar kind of tests before making up my mind.

“Bank”: If the camera sways leftwards or rightwards (in the frontal plane): 0 = horizontal camera. (You rarely will have to modify the default parameter, except for special effects, e.g. for tilting the water surface sideways, as if the camera was on a rolling boat.)

Water settings

“WATER LEVEL”: 250 M

Fig. 30 shows the wave properties, which have been selected for giving the impression of a rather stormy water surface (not too turbulent however!), as it can be observed when intermittent wind puffs toss it before a thunderstorm.

“WAVES” TAB

Wave Properties

“Roughness” is the height difference between the crests and the troughs of the waves;

“Wave Size” relates to the length and the width of the waves (in the horizontal plane of the surface of the water);

“Visibility Effect”: if this number is high the waves will be very visible, particularly near the camera.

So I selected decidedly higher than default values for “Roughness”, “Wave Size” and “Visibility Effect”.

Here too, one has to do successive tests with images which are large enough for being able to judge correctly the result of these settings.

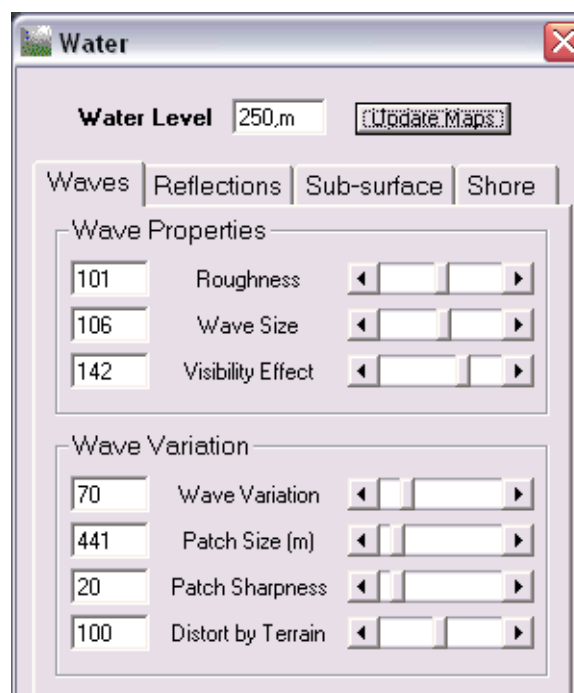


Fig. 30

Wave Variation: Patch

“Patch Size” and **“Patch Sharpness”**: for understanding these settings I suggest you think about a *patchwork* (fig. 31). Every patch is a piece of cloth of a different color.

“Patch Size” corresponds to the size of the pieces. Here it’s the size (in square meters) of the parts of the water surface were all the waves are of the same kind. In other words we’ll get 441 m² of waves type “A” next to 441 m² of waves type “B”, next to 441 m² of waves type “C”, etc.

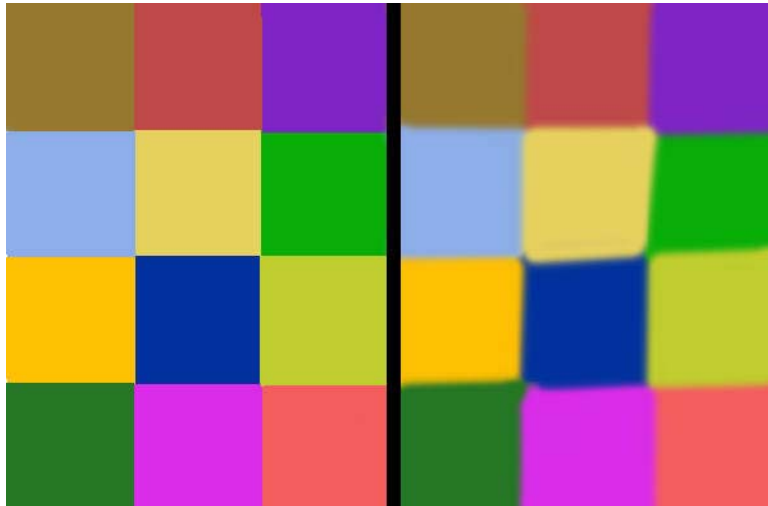


Fig. 31

“Patch Sharpness”: On the left half of fig. 31 you can see sudden transitions between the colors of the patches = high value of the “Sharpness”. The right half shows blurred transitions = low “Sharpness”. It’s the same thing with the water surface: the transition between the different wave types may be progressive (low “Sharpness”) ou sudden (high “Sharpness”). Fig. 31 bis illustrates these différences. The top image has a zero “Patch Sharpness” and the bottom one a maximum (200) “Patch Sharpness”.



Fig. 31 bis

Wave Variation: Wave Variation

Going further with our comparison with the patchwork, this parameter corresponds to the contrast between the different colors. A high variation corresponds to a high contrast — as the one between the light yellow patch of cloth and the dark blue one, in the middle of the patchwork on fig. 31 —, and a low variation corresponds to a reduced contrast — as between the magenta and the brick red patch on the bottom right-hand side.

In Terragen, the various wave types may be very different from one another too (high “Wave Variation”), or their differences may be softened (low “Wave Variation”).

Wave Variation: Distort by Terrain

This parameter corresponds to the influence of the terrain on the wave type. The higher this value, the more the waves will vary with the underlying depth.

I selected a little lower than default “Wave Variation”, but a rather high distortion of the water surface by the underlying terrain by putting “Distort by Terrain” on 100, which means that the waves will be very different according to the depth. You can easily verify it if you look at the final image (fig. 40), on the bottom left hand side, in the region of the shallows you can make out by transparency.

It’s unnecessary to emphasise that all these settings are rather subtle and that they necessitate numerous tests (full-screen: I’ve already stressed on it) before getting the desired result.

I didn’t use any plug-in for the waves.

“REFLEXIONS” TAB

Here the parameters are very easy to understand. I used the default settings.

“SUB-SURFACE” TAB

These settings are about the water transparency (fig. 32).

Diffuse Colour

The darker this color, the more transparent the water will be. I selected a very dark color: RGB 18-26-10, a dark grayish green (saturation: 62 % and brightness/luminosity 10 %; the original green is 128-255-0, i.e. a very yellowish green).

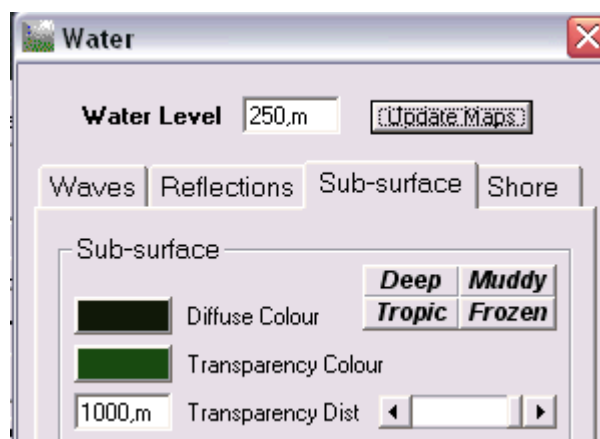


Fig. 32

Transparency Colour

Strictly speaking, this is the color of the water (as if you had diluted some ink in the water). I selected a green water RGB 22-64-19. It’s a 70 % saturated green, but rather not very bright (brightness 25 %). The original green is very close to the neutral green (RGB 17-255-0: I means it contains very few red).

Transparency Dist

“Transparency Distance”. I selected “1000 m”. This does neither mean that you can see the objects through the water until a 1000 m depth, nor that a submarine will make out a ship distant from 1 km by transparency through the water! You’ll have to consider those numbers as purely indicative of a more or

less marked transparency of the water. 1000 m indicate a very pure water and low numbers water with much dust in suspension.

“SHORE” TAB

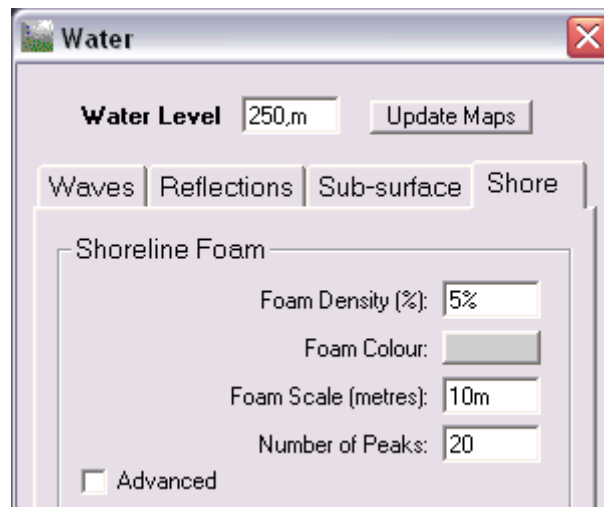


Fig. 33

Here it comes to the foam which can appear along the strand. I decided to increase the “Foam Density” to 5 % and to keep all the other parameters at their default settings (fig. 33). The result is a faint light green strip at the edge of the water, the effect of which is to soften the boundary between earth and water, which is often a little too clear-cut in Terragen.

There are some images where I still increase a little more this strip, and where I put its color closer to the color of the nearby ground, so that I get a kind of “fading into one another” between earth and water, but this was not necessary here.

Atmosphere

Simple Haze

Fig. 34 shows the settings I’ve selected for getting a threatening sky. I selected a rather dark gray (RGB 64-64-64) as the color of the haze and of the clouds (Simple Haze). Density: 30 %, Half-Height 1448,15 (default value).

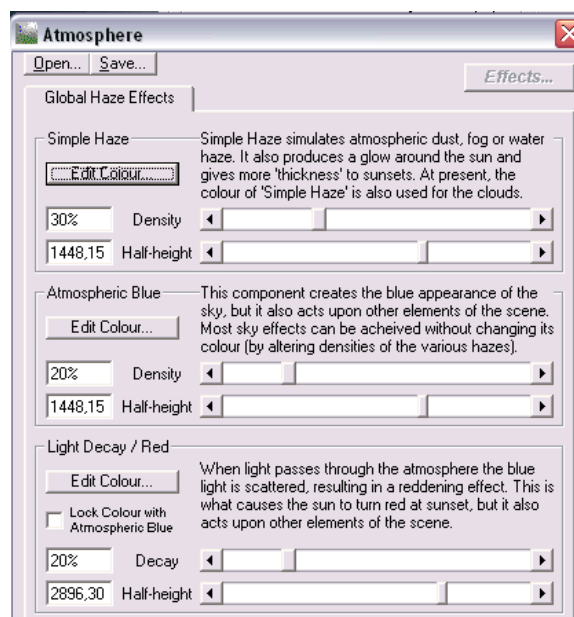


Fig. 34

Atmospheric blue

A little more grayish than the default setting. I selected RGB 45-106-204, i.e. 78 % saturation (default is 87) and 80 % brightness (default is 100 %). So my sky will be more gray (= less saturated) and darker than the default sky. In addition, its color has been moved lightly towards green.

Density is 20 % (= default) and Half-height was lowered to 1448,15. The lower this value, the blacker the sky indeed.

Light Decay / Red

This color is very little redder and brighter than the default one. I selected RGB 226-163-71 (default: 218-171-71).

The default “Decay” (20 %) hasn’t been modified. But the Half-height has risen to 2896,30. Actually, the lower this number is and the bluer the sky, but the higher the Decay will be and the more the sky color will be mixed with the selected orange — but this is a subtractive mixing (*). In the present case, this little rising of the Half-height is enough to make the sky even grayer, thus more threatening.

(*) An additive mixing of blue and orange gives a white with a more or less magenta shade. But mixed subtractively, RGB 45-106-204 (= CMYK 82-60-0-0) blue + RGB 226-163-71 (= CMYK 11-38-83-0) orange gives CMYK 93-98-83-0 (= RGB 69-56-71), which is a rather dark gray (brightness 28 %) with a slight violet shade (saturation 21 %).

Cloudscape

Let’s go to the clouds, fig. 35.

Sky Size: 50 000, Altitude 5 000. You’ll have to do several tests before reaching a satisfactory result.

Actually, it is often necessary to generate new clouds before playing with both these parameters. It is even possible to generate a perfectly dull and uninteresting sky, which becomes great as you modify these numbers. But I cannot give general rules. Here the preview thumbnail can be of some help in a first stage, but rapidly you’ll have to test your sky in about 600 × 450 pixels images so that you’ll have an actual idea of the result.

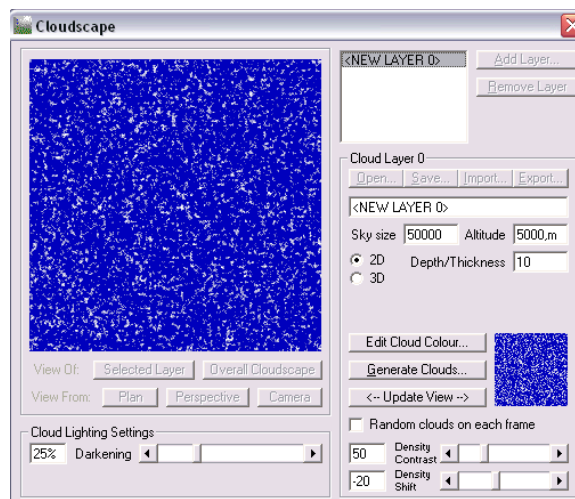


Fig. 35

Fig. 36 illustrates the parameters of **Cloud Genesis** I selected: “Persistence” 25 and “Largest Cloud Size” slider at the second position.

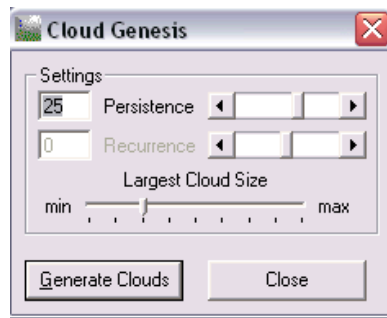


Fig. 36

The other values are the default ones, except “Depth / Thickness”, which has been raised to 10 and “Density Shift” lowered to -20, which reduces the number of visible clouds in the sky.

I very rarely utilize the cloud setting “3D”, because it is evidently not quite ready yet in Terragen’s version 0.9.19, so that it often generates strange “pyramides” in the sky. Thus I kept “2D”, the default setting.

But it’s necessary to insist: in Terragen, rendering clouds is the point over which the artist has the least hold. That’s why he finds himself forced to do much tests at random, until he comes to a satisfying result.

Lightning conditions

I selected a contre-jour with the Sun Heading at 168,311° and its Altitude at 36,098°. I kept the default settings of the shadows (fig. 37).

“DIRECT SUNLIGHT” TAB

Default settings. Base Sun Colour: white.

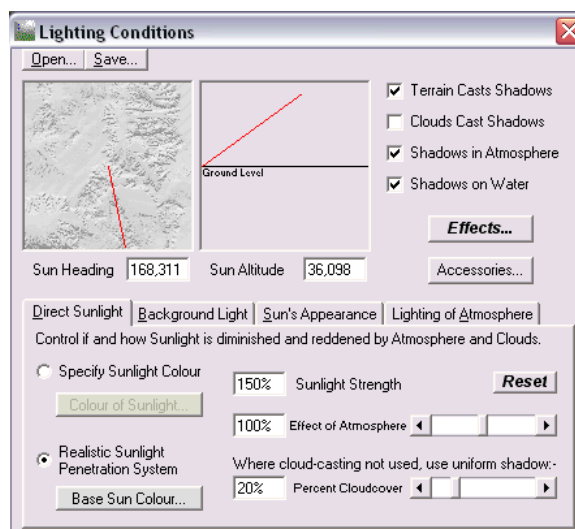


Fig. 37

“BACKGROUND LIGHT” TAB

I didn't modify the “Shadow Lightness” setting (25 %) (fig. 38).

I selected “Multi-directional Shadow Lightning” with its default settings (“Diffuse Sunlight”, “Light from above” and “Reverse Light”).

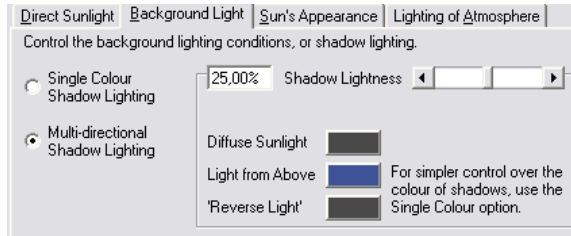


Fig. 38

“SUN’S APPEARANCE” AND “LIGHTNING OF ATMOSPHERE” TABS

Default values.

RENDERING AND POST-PROCESSING

As I already said in the beginning of this tutorial, the urgency compelled me not to make a larger rendering than 5280 × 4080 pixels.

Post-processing

Done with Photoshop.

1. Image/Adjustment/Auto Levels: this setting has increased the contrast of the image and made the general mood even more stormy than the original rendering.

The kind of post-processing I usually use depends on the character of each image and on the restrictions which are laid down in the contests. I always begin with testing the “auto” adjustments: Auto Levels, Auto Contrast, Auto Color. I keep what I best like. Sometimes I don't use any of these adjustments. Sometimes I content myself with an Adjustment Layer with the default “Auto” setting, and I set this layer opacity on some percentage (e.g. 50 or 65 %) of the original so that its working is reduced. On the other hand, after having set the “auto setting”, sometimes I duplicate this Adjustment Layer and I leave the first one's opacity on 100 %, and put the second to 15 or 20 %, etc., with forces the auto setting to 115 or 120 %, etc.

Sometimes, when I have no limitations, I go far beyond these auto settings — see some examples in the tutorial Esteban Glass and I made in close collaboration: “*Terragen images colour correction and other adjustments*”:

<http://ea-brc.netfirms.com/tutors/colour/aindex.htm>

2. Downsizing to 3300 x 2550 pixels

3. Image/Mode/Lab Color

4. Filter/Sharpen/Unsharp Mask, only on the L (luminosity) channel — settings of this filter:

- Amount: 50%
- Radius: 14.1 pixels
- Threshold: 0 levels

5. Back to RGB mode

6. Save as a JPEG

CONCLUSIONS

The most determining elements for giving the impression of a threatening thunderstorm are:

1. The settings of the Atmosphere windows, particularly the Color of the Sky (Atmospheric Blue) and of the clouds (Simple Haze); but the Half-height of the Decay is important too.
2. The gamma.

Actually, let's compare a rendering with the settings I've just explained (fig. 39, left side) and another where the "Atmosphere" window has kept its default settings, and where the gamma has raised to 1.5 — let's remember that the gamma default value is "2" — (fig. 39 right side).



Fig. 39

Furthermore, as I already said here above, the post-processing (Auto Levels) has even increased the threatening character of the stormy mood.

Final notes:

1. Links

You can click on the "http" links in this document for going to the concerned webpages.

You can easily copy and paste the email addresses (and the URL's too) with the "Text" tool of Adobe Reader.

2. Recommended programs

For post-processing, Photoshop remains the king, whatever the supporters of Paint Shop Pro can say (actually the "Lab" mode doesn't exist in Paint Shop Pro, but one must concede this program has some interesting functionalities which are ignored in Photoshop). But it is an expensive program.

For those who like "free programs", I strongly recommend "The Gimp" and "Irfan View". "The Gimp" hasn't all the functionalities of Photoshop (e.g. Lab mode), but it is a high-performance program. IrfanView (images viewer), it is a high-performance program too, and many other programs for which you have to pay are hardly better. Furthermore, its algorithms for image transformation (e.g. "Resize" or "Sharpen") and for saving image to JPEG format are of a very high standard.

THE FINAL RESULT (FIG. 40)



Fig. 40

Thanks for having read this tutorial until the end!

Useful addresses:

<http://www.gimp.org/>

<http://www.irfanview.com/>

Last modification Thursday July 29, 2004 at 23 h 50