

# Landscape Editing

Tutorial by: Olsor

This tutorial will teach you how to create new terrain from scratch. What this means is that by the end, you will know how to create the terrain itself in the terrain editor, texture the terrain the way you want it, and how to add some solids to it (trees, rocks etc.) to make it look more organic. Two things that I won't focus on for this tutorial is the sounds for the area you create and the weather system for cells.


Part 1: The Landscape Editor

Part 2: Texturing

Part 3: Adding Life

## The Landscape Editor

The first thing to do is find yourself an empty cell to build on. I went to Seyda Neen, and pressed the down arrow to move southwards through the cells until I got to -1, -12, which is part of the Bitter Coast Region. The reason for creating the new land so close to the original landmass is for ease of testing, as you won't be creating a teleport or travel script for your new place in this tutorial.

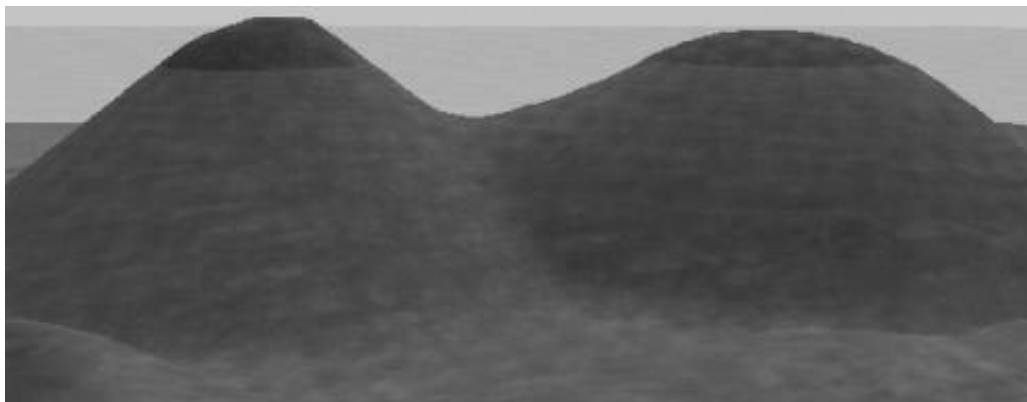
Once you have the cell you want to build on, click on the Landscape Editing button: 

This will bring up a box with three sections to it; Height, Texture, and Vertex Color. The one you need to concentrate on is the Height - you will be using the Texture and Vertex Color section a little later on.



Now, the options here are pretty simple once you know what they are about. The Edit Radius is how large you want your 'brush' to be when resizing the terrain; so a larger radius would mean that you resize more terrain at any one time.

The Edit Falloff % changes the way the height of the land looks. Higher values produce less steep slopes than lower values, giving you more hill-like terrain that jagged, steep cliffs:



(Mound on the left is with 1% falloff - one on the right has 100%)

Flatten Vertices doesn't just flatten the land. Clicking and dragging on the terrain with this option enabled results in 'leveling' the terrain to the height where you first clicked. This means that if you click and drag from the top of a mountain, it will bring the terrain up to that level as you pass over it. The same applies if you find a flat bit of land and click and drag - plowing into a mountain will flatten it (TES:CS - the ultimate bulldozer!).

Soften Vertices makes the vertices less sharp, helping to make the terrain look more smooth and natural (use this when you are happy with your landscape's overall shape)

Show Edit Radius, when enabled will display a red circle, indicating where your 'brush' is - helpful for precise editing.

### **Some Facts About the Landscape**

All cells are divided up into 8192x8192 units, and within these units, each vertex is 128 units

A vertex is any of the three points that make up a polygon (a triangle)

The landscape can only be modified in the Z axis (up or down). This is to save space when working out lots of vertex information.

You can get to the landscape editor via the button on the toolbar, or by pressing H on the keyboard.

Sea level is at a height of 0, and the land originally starts at 2000 units below the sea. This means that anything that you make that has a Z axis value of less than 0 will be underwater.

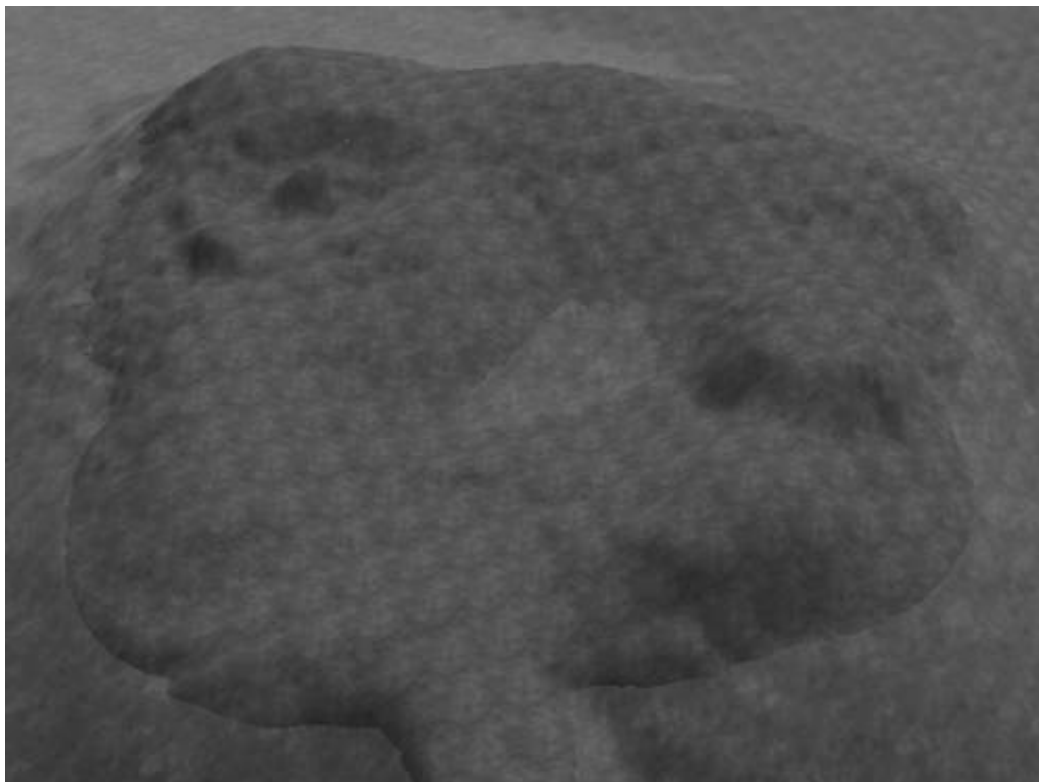
### **Start Landscaping**

In the landscape editor, make sure that Soften Vertices and Flatten Vertices are unchecked, then move the cursor into the render window, and left click and drag the mouse up or down to raise or lower the terrain. Before you do anything else, drag the terrain you want to modify above sea level - use a higher Edit Radius to make this a little quicker.

If this is still a little too tedious, go to the file menu, and click on the preferences option. Now, put the Land Sensitivity Multiplier up to 2.00 or 3.00 if you get bored really easily. Click OK and get back to your editing.

Once you have the terrain above the water, you can start to experiment with the editor at get different kinds of effects, using different edit radiuses, and falloff values.

When you are satisfied with the result (remembering that it doesn't have to be brilliant, and that it will look a LOT better when its textured), you should have something a little like the following:



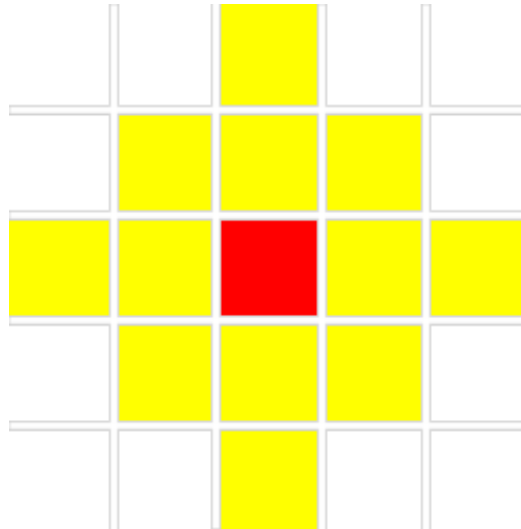
Now, before you go on to texture this nice new piece of land, you want to rename the cells that it occupies. This is for two reasons:

So you can find it in the editor much quicker

So the player can identify when they enter your new region

My land is connected to Vvardenfell by a causeway that heads north and meets up near Seyda Neen's lighthouse. It is also a little swim west of Ebonheart, as such I named mine 'Rylor Peninsular' no real reason for this, but it sounds semi-realistic for a land in Morrowind. To do this for yourself, click on the cell that you have modified in the Cell View window. Left click it again, and you will be able to rename it whatever you want.

The Construction Set buffers land as you move there and edit. What this means is that once you found your cell and started to fiddle, it will have loaded not just the cell that you are in, but also a two-wide cell buffer:



(The red square is the cell you are editing. The yellow squares represent the buffer cells)

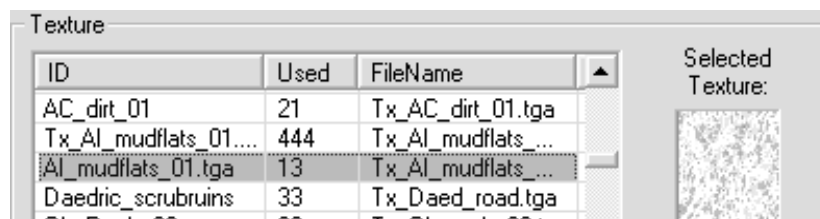
There you have your basic terrain. It looks kind of like a giant turd, but it IS playable - save the plugin and give it a go, just to make sure that it all looks and works to your liking.

If there are any problems with 'jaggedy' terrain, then use the landscape editor and turn soften vertices on. This will smoothen out all the jagged edges on the vertexes where the terrain has been moved about.

Next, you are going to learn how to texture your giant turd to make it look more like realistic terrain...

## Texturing the Land

If you don't already, have it, open up the Landscape Editor again. This time, from the texture part, select a nice texture. I chose AI\_mudflats\_01.tga because of the location of my land, but you can chose whatever you want.



To apply the texture to the land, in the render window just right click where you want to place the texture. If you want to apply it to a larger area than just one square at a time, hold down the right mouse button and drag the cursor around the terrain.

Notice how it doesn't matter what size your Edit Radius is, it will always only texture one square of land at a time.

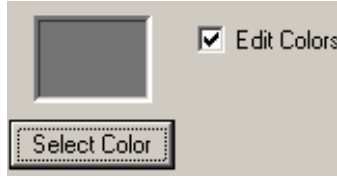
Also take note to the way that undo only undoes one action at a time. So if you clicked and dragged the brush around for a few seconds before releasing the mouse button, the undo option would not undo the whole of that action in one; rather you would have to undo about 50 times... For this reason, it is best to use individual clicks of the mouse to build up the textures that you want, then you can undo the stages that you don't like as you go :-)

Now select other textures from the list, and continue to re-texture the land until it looks satisfactory to you.

## Vertex Colouring

This part of the landscape editor is to do with rendering static shadows on the landscape. It helps to show darker or coloured regions of your land for realism. These effects will show up in-game, even with the shadows turned off in the Video options.

To colour the vertices, make sure the 'Edit Colors' checkbox is checked, otherwise you will be modifying the terrain more.



Now click the Select Color button and find a color that you want to use. I have selected a mid-grey colour for my shadows, but you can use whatever you like.

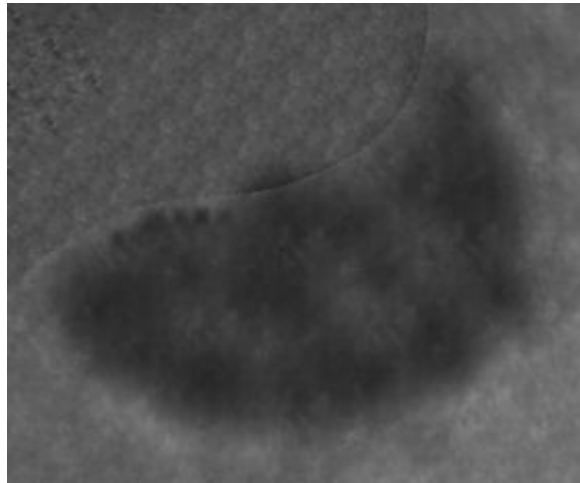
There are two colours that you can select. The first will be the foreground colour (placed with a left-click), and the second will be the background (placed with a right-click).

In my experience, if you want blackish shadows, they build up a lot better with a light grey as the colour, rather than black.

The edit radius for this part does define how much of an area you will be covering, so make sure you have the Show Edit Radius option enabled.

Before you go colouring everything under the sun, I should warn you that, much like texturing, when you undo your action, it undoes one bit of colouring at a time. One thing that the Construction Set is lacking, and could do with is a Vertex Colour Eraser, so you can rub out where you made mistakes before...

Now save your plugin, and play around with the colouring for a while to get a better idea of using it effectively.



(Hopefully if you have more time than I, you will do better than this ;-)

That about wraps up texturing landscapes apart from the Add Texture button, which lets you add your own .tga file to use as a texture.

Next you will go on to adding objects to the land to make it more realistic. Things like trees, plants and rocks help to make the land look more 'alive'.

## Breathing Life Into the Land

Now you can close the Landscape Editor and place some models onto the land to make it a little more realistic.

From the Object Window, select the Static tab, and in the list find flora:

Lockpick	Misc Item	Probe	Repair Item	Static
ID	Count	Model	Per	
 flora_bc_fern_02	232	flora_BC_Fern...		no

Open up the Preview Window by going to the View menu, and click on Preview Window. The preview window will open up where the

render window was. To get the render window back again, go to the View menu again, and click on Render Window.

Now, with the preview window open, left-click once on any of the flora in the list and a preview of what they look like will appear in the preview window. Cycle through them until you find something that you think will suit the area that you have just made. If you need to move the model around in the Preview Window to get a better idea, the controls for it can be found [here](#).

Once you have selected the vegetation that you want to add, left-click and drag it from the object window to the render window. Press F to drop it to the ground, then move it around until you are comfortable with its position.



You can take a little more time with your positioning than I did, as the picture above is just an example.

Next, you are going to add some rocks to the landscape. These can also be found under the Static tab of the object window. This time, scroll down to the items that start with 'terrain'. If you need to, open up the preview window again and find ones that suit your area, much as you did with the plants and trees.

Then, repeat the process of placing the rocks and boulders in places that you think best.

If you want to add some flowers or mushrooms, they can be found under the Containers tab. This is because they are classed the same way as barrels or crates etc. - they have the items within them.

That's about it for making new land. Save your plugin and go test it out. If things don't look all that good in the game you can always come back in the editor and sort them out to your liking :-)

If you want to add some buildings and things, check out the [House Building Tutorial](#).

Example Plugin: [NewLand](#)

Have something to say about this tutorial? E-mail your comments to the author