



Starter's guide to **Myth map making**

-by Jeff Fridberg

To make a myth map can be a bit tricky and even though you know almost exactly what to do you always experience some unexpected (and unwanted) problems. But that also means you'll feel even happier and more satisfied when your map finally is finished. This tutorial will explain in general how to make you're own map and how I did my map called "The 3 Rivers". Since a lot of graphics work with very big files is a part of making a map, you'll probably want to a PowerMac with plenty of RAM. Now let's get started!

First we need the right tools. The tools I use for map making are freeware and easy to get. You can find all of them on the internet and on hotline (www.hotlinesw.com for client software). Well the tools we need for this map is:

Mythed
MythTech
Textura
Bartók
HexEdit
(MONSedit)
(PROJedit)

And we also need a graphics program, for example Adobe Photoshop.

Now we need 4 files form the Myth CD. The files we need are a mesh file, a texture map, a pregame graphic and an overhead map. We're going to extract these files with Mythed from tags.gor and art-sound.gor on your Myth CD. It's important to get the files from the CD because we want "clean" files which nobody has messed around in (except for Bungie that is).

Decide how you want your map to look like, the most important thing is to know what size your map should have. For my map I chose Spiderweb, since I was making an FFA map and it had the size I wanted.

To extract the files:

Launch Mythed and choose "Extract objects", from the "Objects" menu. Now choose tags.gor from your Myth CD. Now scroll down to "meshes" and press the little arrow next to the name to open it (like in Finder). You have to use you're brain when you're going to get the right files here since the guys at Bungie chose to name them a bit different than you would think. I'm going to get the mesh for Spiderweb since my map is based on that map, but you can get whatever map you want (though it's best to choose a multiplayer map since there's a bit more work to convert a single player map to multiplayer). Spiderweb's mesh is called "58 King of the Hill" with the four letter code of: "thhi" (everything has a four letter code, you see it on the right side of the window in Mythed). When you've found the file -double click on it to save it onto your harddrive.

Now we need the 3 other files that this map uses, the pregame, overhead and texturemap.

Choose "Extract objects" again and choose the file artsound.gor. It may appear that it hasn't been opened but that is because the window appears right behind tags.gor's window, just move that one to the side and there you have it.

Now locate those 3 files, 2 small files (about 200K) and 1 big file (over 2 MB). Since I worked with Spiderweb I extracted (double clicked on to save) the following files:

"52 King of the Hill"

"52 overhead map"

"52 pregame map"

As you've noticed, it might be a bit hard to find the right files. As you remember the mesh file had the number "58"...

Ok, now when we got those files, we need to get them out so we can work with them. Open up MythTech's folder in Finder. Here you see a number

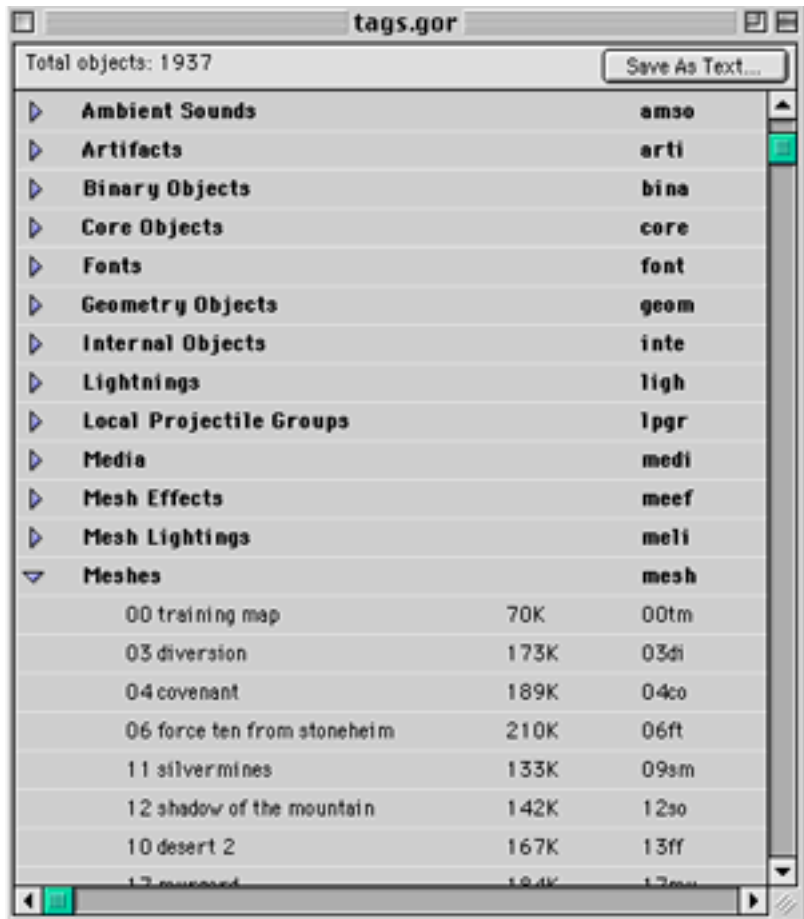
folders (for more specific info, read the Read Me file), among these there should be one called mesh and one called .256. Put the mesh file you extracted (in my case "thhi") in the mesh folder and the 3 other files in the .256 folder. Now launch MythTech. Choose Open from the File menu and choose your mesh file from the folder called mesh (you can open a mesh from anywhere on your disk, but I prefer to do it this way since it easier to track the files when you need them). Choose Extract All from the Extract menu, after a while it's finished and you should find a lot of files inside the folder called Graphics.out. The files, and what they do are described here:

texture.bmp	-the texture map
shadowmap.bmp	-a shadow map, show where there's going to be shadows.
overhead.map	-the little map on the right side of the screen when you play
elevation.bmp	-a greyscale representation of the elevation (aka bump)
waterfx.bmp	-a greyscale representation of the water effects locations
watermask.bmp	-A black and white representation of where there's going to be water
passability.bmp:	-a color representation of the passability data
slope.bmp:	-a greyscale representation of the terrain slopes
pregame.bmp:	-the graphic from the pregame screen

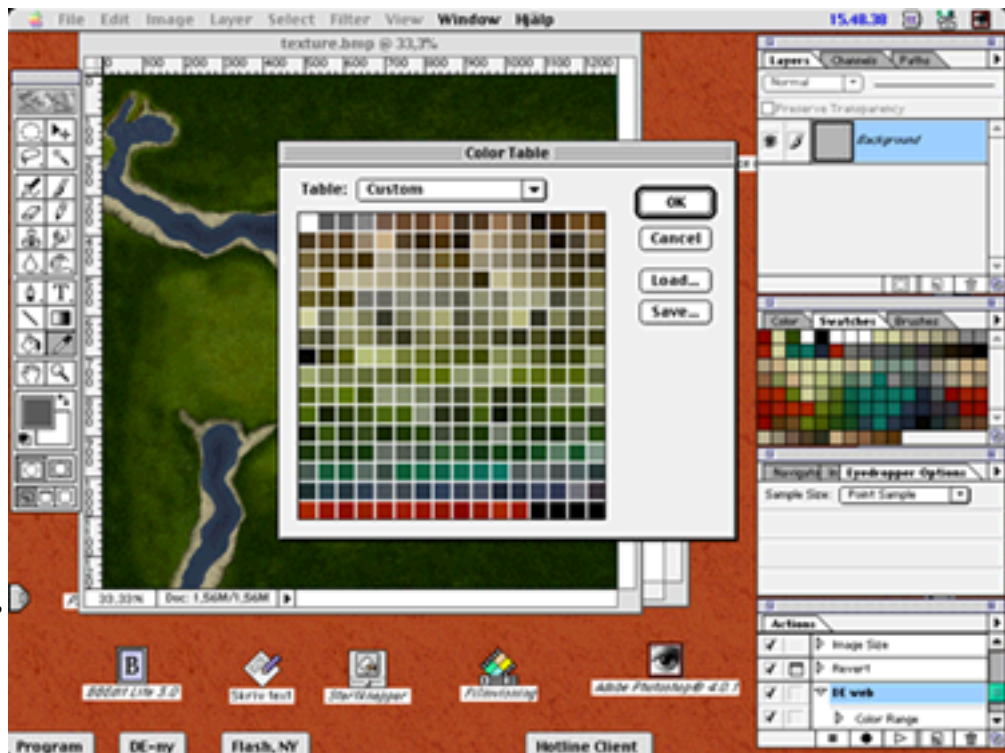
These are the files we're going to edit, and yes it will take a while. But it isn't that hard once you've figured out how, and hopefully you'll know that when you've read this article.

The different parts:

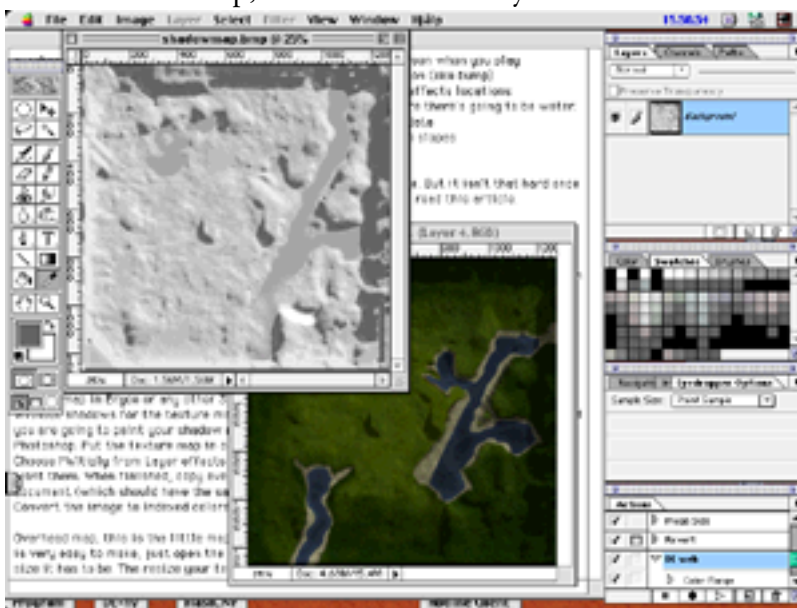
We begin with the texture map. Open it up in a graphic program of your choice, I chose Photoshop. Now check what size the image has (for spiderweb it is 1280x1280). Making the texture map is something that takes time, I painted mine in Photoshop. You can also make it in Bryce or Painter or whatever you prefer.



When you've painted you're texture map, convert the image to Indexed color and choose Adaptive and 241 colors. We choose that because the last 14 colors are for all the Blood colors we need (er...myth needs). Edit your palette (in PS choose Image mode>Color Table) and make the last 14 colors, the black ones, to different red shades. Finally save the file as BMP.



Now let's move on to the shadow map. To paint this one can be a bit tricky. If you made your texture map in Bryce or any other 3D program then it isn't very hard, just render the scene without shadows for the texture map, and then render only the shadows for the shadow map.



If you are going to paint your shadow map by yourself (as I did), the easiest way is to start Photoshop. Put the texture map in one layer and the original shadow map in its own layer. Choose Multiply from Layer effects and voilá. Now you can easy paint to shadows there you want them. When finished, copy everything from the shadow layer and paste it into a new document (which should have the same size as the texture map, that was for me 1280x1280). Convert the image to Indexed colors and choose greyscale and palette. Now save it as BMP.

Overhead map, this is the little map on the right side of your screen when you play. This map is very easy to make, just open the overhead.bmp from the "Graphics.out" folder to see what size it has to be. The resize your texture map to that size and convert it to Indexed colors, choose an Adaptive Palette and 240 colors. Not exactly sure how many you can use, but if you use 256 myth says "##not enough colors for overhead map" when your map is loaded. But 240 should work. You also need 3 additional colors for you palette, so open it up so we can edit it. In Photoshop choose Image mode>Color Table. Now make the 3 colors at the end (number 241, 242, 243) to the following the colors:

1: R= 255 G= 255 B= 0

2: R= 255 G= 0 B= 255

3: R= 0 G= 0 B= 255

This should give you one bright yellow, one purple and one blue color. Myth uses these for the color

of the balls, flags and units on the overhead map. Ok, now the overhead map is finished, save it as BMP.

Ok, one of the hardest things to do is the elevation map, unless you of course have made you're texture map in a 3D program (which I didn't do...). The you just render a pict showing the elevation from above. The elevation map works like this: mid grey is sea level, lighter is higher, darker is lower. Making the elevation map look good might take a while and you have to experiment a lot. If you paint the elevation map yourself you could make a new layer in Photoshop and set the opacity to 50% or something like that. Then you see how the map looks when you paint the elevation map. Well when it's finished, convert it to Indexed color (you know that by now don't you) and choose greyscale as the palette. Save it as BMP and it's finished. One important note is that although the Read Me file for MythTech states that the elevation map should be 1/16 of the map size, it doesn't work if you re-seize it to that size. Myth handles it like that but you still have to have a elevation map that has the same dimensions as the texture map (in my case still 1280x1280) because when you Inject (more info at the end of this article) the elevation map it asks you what scaling you want -choose 16.

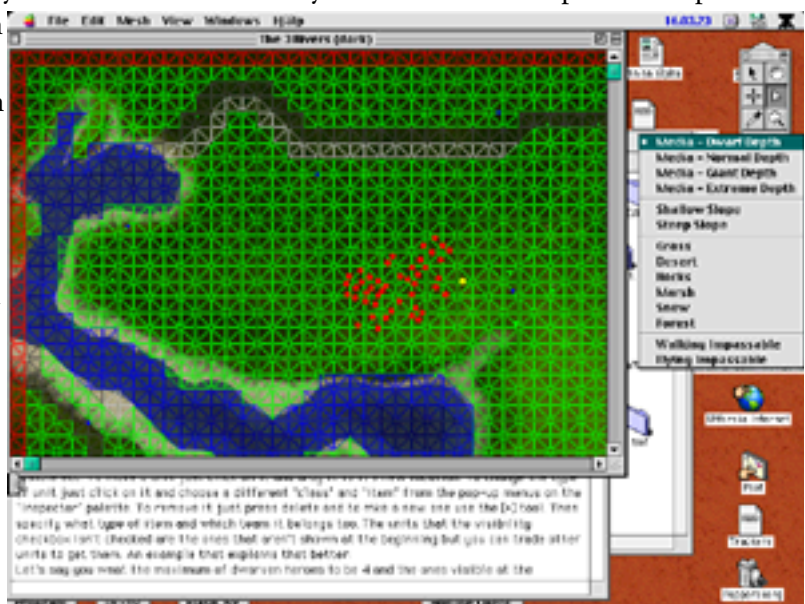


Now let's get started on the water. If your map doesn't include water then just use a blank waterfx and watermask, by injecting a black image as waterfx and watermask. The waterfx maps determines how the water will interact, if it will be animated and so on. You can either paint your waterfx map yourself (check how bungie has done theirs for some tips) or do it in Textura. In Tetxtura it's called media map.

The water mask determines were the water should be on the map. This is a black and white image, white where the water is supposed to be and the rest black. The easiest way

to do this is to make new layer on top of your texture map and use the lasso tool to select the water, and fill the selections with white. Then fill the rest with black. Since myth uses a watermask to mask out the waterfx map (you can see how this works by putting the water mask map in a new layer in Photoshop and set the layer effect to multiply) the waterfx map doesn't have to be exact (on Bungie's own maps it isn't). When you have both maps, save them as BMP, Indexed color of course.

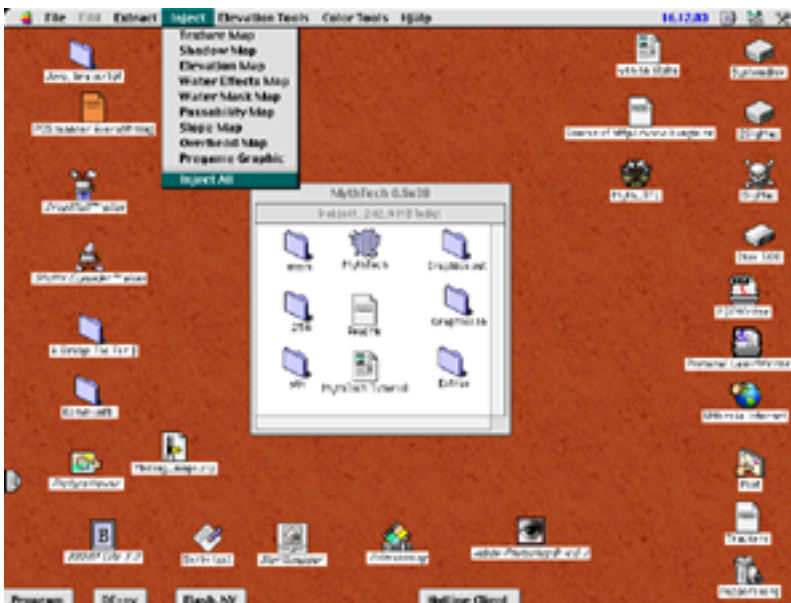
Passability map: This map shows were you can walk and where you can't on the map. This map can be very tricky to do in Photoshop, but on the otherhand very easy to do in Textura. When you open your mesh in Textura, you'll see the texture of your map (if you haven't Injected the texture and shadow map yet into your mesh, which you probably haven't since I haven't described that yet, then in Textura choose import Texture map and import shadow map. Choose the files you've made). Choose "display grid" and then "passability" from "Grid Options", now you see a lot of triangles. Choose the little arrow from the tool palette. Now you get a little



pop-up menu that has several alternatives to choose from, it's pretty self explaining. Then just "paint" on the triangles there you want the passability to be what you selected from the pop-up menu. When you're finished, you of course save. Now you have a passability map. As you might have noticed you can also choose "media" from "grid options", choose that to "paint" the waterfx map, if you haven't done so already.

The slope map. The slope map is what makes Myth so cool. It is the thing that makes heads roll downhill and molotov cocktails roll back at the dwarf if thrown up a hill. Making a slope map can be tricky, since there aren't yet a good program to use to paint it. If you open the slope map from a Bungie amp you see that it is built up by a lot of triangles, not to worry though - you don't have to paint it this way, Myth converts the file to triangles since that's the way it's stored in the mesh file. Well to paint the slope map: Make a new layer on top of your texture map (like you've done before) and fill it with black. Then set the opacity to 25-50% so you can see the texture map through the layer. Then paint with white or a lighter grey where you want it to roll more. When you're happy with it, copy everything from that layer into a new file and convert it to Indexed color, and greyscale as the palette, then save it as BMP.

Pregame, this is where you give yourself some credits for all your hard work. The pregame is what shows when the map is selected. The size of this image should be 377*190, you can double check by opening the extracted pregame screen from the "Graphics.out" folder. How this image will look is up to you, preferably include a pict of the map from above, the name of it and the creators name (you want some credits for all your hard work, don't you?). When you are finished with this picture, convert it to Indexed color and use an Adaptive palette. The save it as BMP.



Assembling the map:

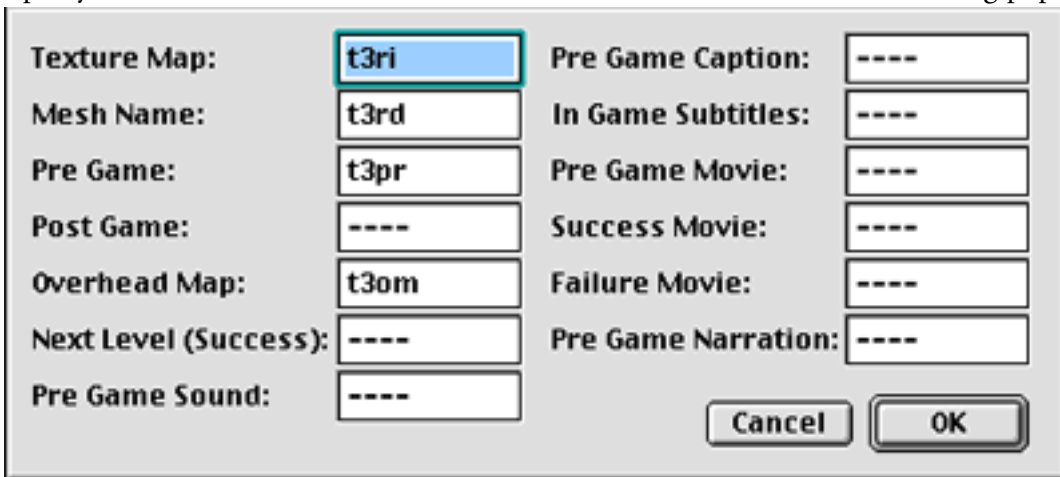
Now we have all the different parts of the map that we need, now we just have to get them into the mesh and the .256 files. The slope map is already in the mesh since we used Textura to make it, but not the rest of all those different maps. To inject them into your mesh do like this:

Put all the files you just created (for example texture.bmp, shadowmap.bmp etc.) into the folder called "Graphics.in" in MythTech's folder. Remember to name them exactly what they were named before, like the texture map should be called

texture.bmp etc. Now start MythTech, choose "Inject all" from the "Inject" menu. Now wait for a few seconds and it should be finished. If it asks for a scaling when you inject the elevation map then type "16" in the field and click "ok". If you have any problems like an alert saying something like "Texture map injection failed" then make sure you've named the file correct and it's converted to "Indexed color". When you've injected everything you can test to see if it worked by choosing "Extract all" and look at the files that appear in the "Graphics.out" folder. If they match the one you injected then it works.

Giving the map a unique ID and name:

Now you probably want to give your map a new name and an unique ID. Start Textura again and open your mesh file. Now choose "mesh info" from the "mesh" menu. A dialog pops up, take a piece



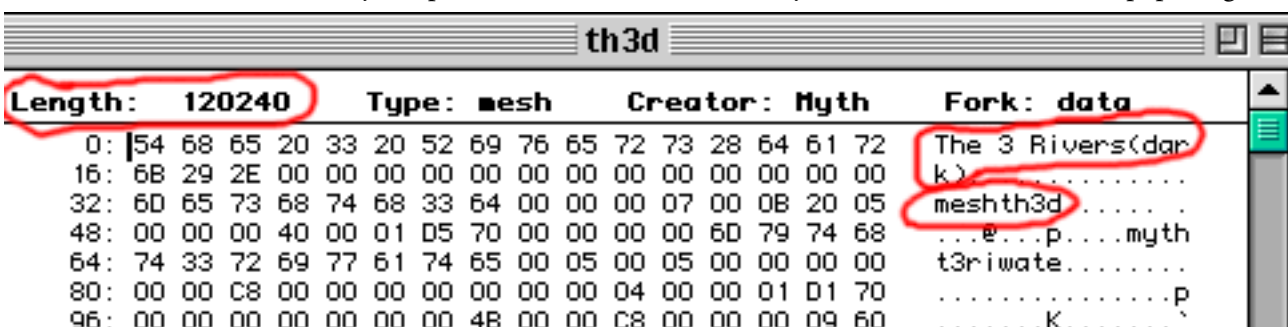
of paper that you can write on so you can remember what ID's you gave the files since it's pretty important to know, now you can type in a new name for the map and give it a new mesh tag ID. The

mesh tag ID should be a four letter combination (you can also use numbers), remember to write this down as I said before. Now, still in the same dialog, press the "Tag ID's..." button. Give your map unique ID's here too - you only need to change the following ID's:

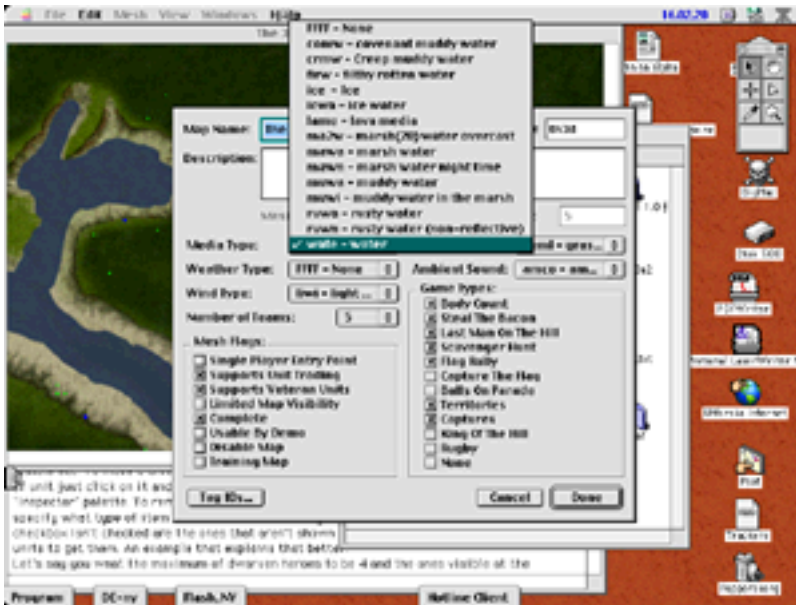
- Texture map
- Mesh name
- Overhead map
- Pregame map

Write the ID's you give them down on a paper because you also need to rename the files in Finder. Rename the mesh so it has the same name as the mesh name ID, the .256 file which holds the texture map to the ID you gave the texture map and so on. When you've done this you also need to alter the names of the .256 files and the mesh file with HexEdit, this may sound very complicated and can seem to be pretty hard to do, but it isn't. I myself don't have much knowledge about HexEditing but this thing is very easy to do. Do like this:

Drop the .256 file that you're going to edit onto HexEdit (you're going to edit all 3) and the mesh file. On top of the window you see some information about the tag like Length, Fork, Creator etc. Check what number the "Length" has, because when you've changed the code it should have the same length as before. In the window you see that it's splitted into one code area and one text area. In the beginning of the text area you see a lot of points (.) and a name for the tag, for example "52 overhead map" and then a bit later in the text (the next thing appearing after the points) you see something like 25652om, like it was in my example or something similar to that (It always begins with 256 and follows by a four letter code). Now if this is for example your .256 file containing your overhead map (the first thing in the text usually tells you that, like in my case it was "52 overhead map") change the first part of the text to the name you want for it, I gave mine the name "Rivers overhead" but you can give yours whatever you want. Since we have to have the same length of the code like it had before, either fill in or remove points (.) to get the same exact length. Also we need to change the four letter code of it so it's the same as you specified with Textura before (you wrote that down on a paper right -



what ID you gave the Overhead map) and put that in instead of the four letter code written after "256" in the text. Now save, HexEdit makes backup of your un-edited file which is saved in the same folder as your edited mesh. Remember to always keep a backup because sometimes it goes wrong when you edit code like in HexEdit. Edit all your files (the 3 .256 files and the mesh file) in the same way as you did above, remember one thing that the name you give your mesh file (the long name in the beginning of the text/code) is what appears when people are going to select your map from the map list.



Editing water, weather, wind and available games:

All these things are easily altered with Textura, we begin with editing the water. Water in myth isn't something that myth just makes by itself. You have to paint blue on your map where you want the water to be and so on. But you can use Textura to edit how the water will be animated and so on. Do this by selecting "mesh info" from the "mesh" menu. Now you're given the same dialog as before when you edited the IDs. Here you choose from the "Media type" pop-up what kind of water you want. But remember, as I

said before, this only determines how the water will be animated. So if you've painted blue water on your texture map and choose "muddy water" from the pop-up it won't become brown and muddy, it will only be animated as muddy water would have been.

Editing weather and wind is done the same way, using the pop-ups.

Available games is also very easy to edit and you've probably figured it out already. Just check the checkboxes next to the games you want to be available. Remember if you create a ffa map then perhaps capture the flag and balls on parade shouldn't be selected but that's of course up to you as you are the creator of the map.

Units:

So what units will be available for the players to use and trade for? This is also pretty easy to edit: In Textura choose "markers" from the view menu. Now you see all the trees, ambient sounds, flags, balls, cameras and units. Click on a unit and you a window appears called "Inspector", here you see which team the unit belongs to, what type it is, if it's tradeable, visible etc. To move a unit just click on it and drag it to it's new location. To change the type of unit just click on it and choose a different "class" and "item" from the pop-up menus on the "Inspector" palette. To remove it just press delete and to make a new one use the [+] tool. Then spec-



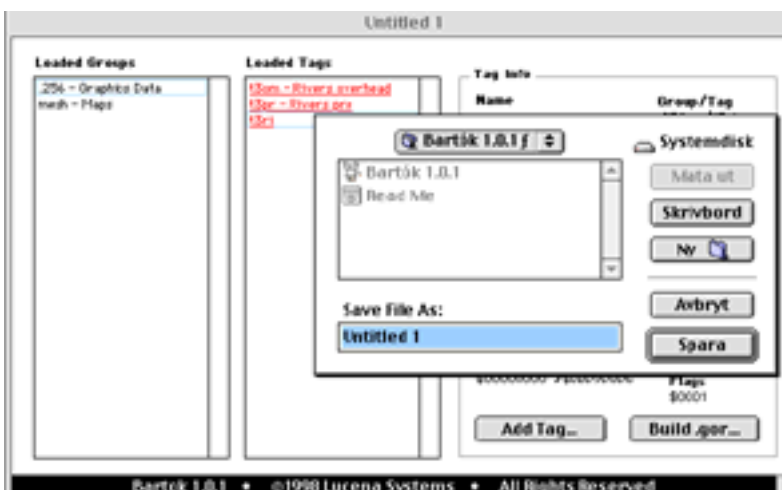
ify what type of item and which team it belongs too. The units that the visibility checkbox isn't checked are the ones that aren't shown at the beginning but you can trade other units to get them. An example that explains that better:

Let's say you want the maximum of dwarven heroes to be 4 and the ones visible at the beginning to be 2, then make 4 dwarves on the map and only make 2 of them visible.

Removing trees and moving flags, balls etc. are done exactly the same way, just click on them and move them to their new location, remove them or do whatever you want. Remember one thing though, you need all the territory flags, balls, lmoth flag etc. to be on the map. And when you change units, make sure you change it to the same units for all teams. They can of course be different but then there won't be a fair game.

Different versions of the map:

You might want to have a few different versions of your map, for example one dark, one light and one champion version. To do this, just open the mesh, change units and alter the "mesh tag ID" and "mesh name ID" (write those down as you did before), save it as something different and then edit the name with HexEdit like you did before, also edit the four letter code to the one you specified in "mesh tag ID". In my case I named the first mesh "The 3 Rivers (light)" the second "The 3 Rivers (dark)" and so on. See earlier in this tutorial for more info about editing names with HexEditing. Remember that in Finder all the mesh files should only have a 4 letter code (numbers is also ok, like I said before), this name has to be the same as the one specified as "mesh name ID". Ok, now you have a few different mesh files. Let's put together this whole thing to a .gor file so we can play it!



Making a .gor file:

Let's stuff everything into our .gor file so all 1.3 users out there can play your cool map. To do this is very easy, first launch Bartók. Here you see that it divided into 2 columns. Drag all your mesh and .256 files to the first column. Now they are displayed there and you can see some info about them. If Bartók gives you an alert saying that the files are in unknown format but were opened anyway and those files (usually .256 files) are displayed with red then don't worry. This happened to me but it shouldn't be a problem. Just press the button "Build .gor..." and there you go. Choose a nice location to save it and name it something that has to do with your map, I named mine Rivers.gor. To test your map, put it into the plug-ins folder in Myth and launch Myth. Now load the map as you usually do with 3rd Party Maps, selecting the plug-in and then the map. Now start the game and see if everything works!

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Trouble shooting:

Usually water is the thing that causes most problems, either it's too deep so the units disappear as soon as they enter it or it's not shown at all. There are just slopes where it should be water, like the water surface has disappeared. If this happens, open your mesh with MythTech and use the elevation tools (the ones in the menu called "Elevation Tools") to raise or lower the entire map. If the water surface has disappeared then use the "Lower Terrain" and use a value between 500-1000, you have to test to get it right. When you've changed make a new .gor file as described before and test it. If it doesn't work then repeat with different values to see if it works. If the water is too deep then use the "Raise Terrain" the same way you did as with the "Lower Terrain" tools.

If injection fails with any of the files then make sure you've saved them in the right format (BMP) and that they are converted to indexed color. Also make sure that they have the right size. The blood isn't red! Why?! Make sure you've selected the last 14 colors or so to be different red shades. You can open you're mesh in Textura to see which colors myth use for blood by choosing "Change blood entries...", then you can choose which colors to use for blood, then click "Recalculate" before you click "ok". If you haven't got any red shades in your palette than use Photoshop or similar program to edit the palette.

Editing and making your own units:

It's very easy to make your own units, we begin with extracting the mons files from your tags.gor file as we did before when we extracted a mesh. Start Mythed and choose "Extract Object", select tags.gor from your Myth CD, when it's opened open "monsters" and find the mons file that your unit will look like (you will only edit speed, attack, health etc. not their sprites). Then save it to your disk like you did before.

Start the program MONSedit and choose open. Select the mons file that you saved. Now use the tabs in the program to edit the different attributes of the unit, also remember to give it unique IDs. Then save it. If you want more info about all these things you can edit, refer to MONSedit's Read Me file. To use your new unit, load it into Despair or similar program to use it on your map, also remember to include it when you build your .gor file.

Editing and making your own projectiles:

This is similar to editing monsters/units, just extract the projectiles you're going to edit, for example a molotov cocktail, using Mythed, you probably know how to use it by now. Then open the proj file with PROJedit, and change the attributes. Also change the ID, if one of your units are going to use this new projectile, then also remember to edit that unit, for example a dwarf, so it refers to your projectile and not it's standard. You have to include the new proj file in your .gor file when you build it.

Conclusion:

Making a map might take some time and often you have to build many .gor files before you get everything to work properly, but when it does you can be very satisfied with your map. As often mentioned in this tutorial I recommend using a 3D program, for example Bryce, to make the texture, shadow and elevation map since it can be difficult to get the proper shadows when painting and also elevation can be a problem. I've also described how to edit and making your own units as well as editing projectiles. But I don't recommend making your own units for your map since it's pretty annoying, or at least I think, to learn how dwarfs act on your map and so on. Because then it's the guy who knows how these new units work who wins and not the one with the better strategy. Of course it can be fun to make own units, but please use them for yourself and don't spread them together with your map, use standard units on it.

That's all for now, if you still have questions or problems then check out VR's forum for some help, it can be found on this URL:

<http://www.vrabbits.com/fm/leveledit/index.pl>

You can also drop me a mail:
jeff@stockholm.mail.telia.com

Good Luck!

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