

CC3/CC3+ RIVERS

(A Quick, Picture-Heavy Tutorial Wherein I Talk a Lot and Maybe Construct a River)

As much to my surprise as anyone's, apparently I've actually been enjoying the way I've gotten my overland rivers to look in CC3/CC3+ for some time, so I thought I'd take a little while and go over my techniques for doing them.

First and foremost, let me point out that the river techniques that I'm describing here *tend* to work best for larger-scale maps, ones that detail a larger area of a country or continent. You can certainly adapt these ideas to local and regional maps and apply them in much the same way, but smaller-scale maps like those of towns and the like don't need to necessarily show the more organic and natural movement of a river system and can get by easily with a smoother line than what we'll be making here. Oh, and naturally, in a local or regional map, the rivers will most likely be much wider than what we're making here.

So at any rate, let's get going with this, then!

STEP ONE: PLOT, PLAN, AND KNOW YOUR RIVER

I can't really underscore this step enough. This step is sort of two-fold. First off, you want to know the dynamics of your rivers. Most (say, 85-95%) of rivers tend to have their sources in high places-- hills, mountains and the like-- and they generally tend to follow the path offering the least resistance to the coast. Rivers in the northern hemisphere of Earth-like planets tend to flow generally north to south, and south to north in southern hemispheres... or in other words, they tend to flow along the path of least resistance toward the equator.

Granted, in fantasy worlds, we don't *have* to follow that rubric, because magic excuses a great deal... but it makes much more sense and makes your world a little more natural when we do.

Second, it can make a lot of sense in the long run to take a look at your map and figure out how the terrains and map features either affect the flow of the river, or decide how expansive it might be. This is also a good time to figure out where a good place for your river to empty out might be.

So to start, I'm going to make a fairly simple map using CC3+. So let's start out with a sea, somewhere for the river to empty, and a section of mountains-- somewhere for the river to have its source. Anything beyond that is gravy for this exercise, but in your own map, you'll want to keep things like towns, swells, hills, valleys and lowlands in mind, whether they actually affect the flow of your river, or whether they might be affected by a river being nearby.

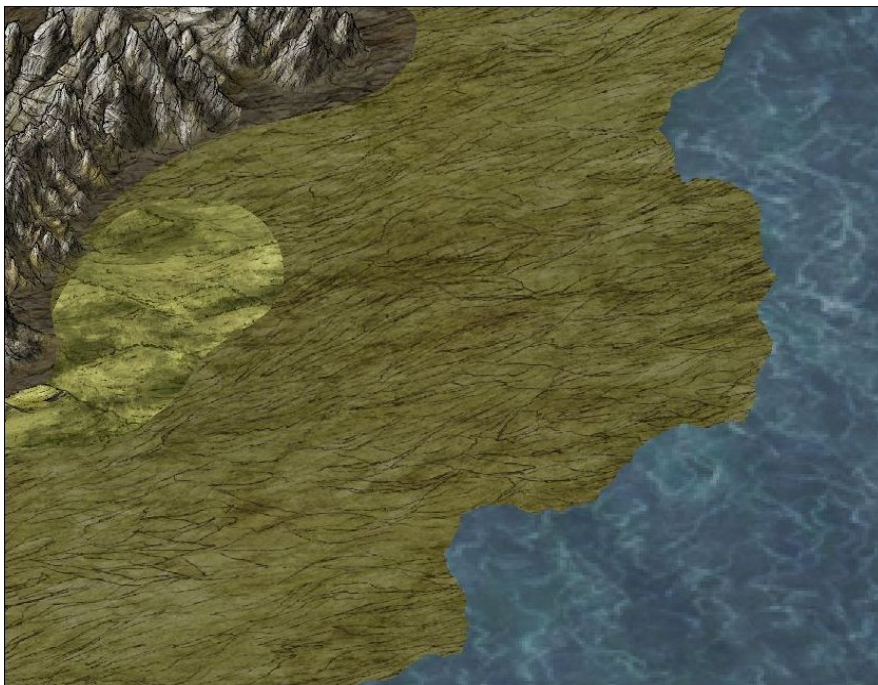


Figure 1: Ours is a torrid but ultimately cartographical love

For my map, I'm using the Herman Wielink style that came with the most recent update to CC3+. I'm setting up a simple area of mountains and nearby swales, and a simple landmass. The Wielink Overland Style has a lot of good symbols and fills and works well with the style of overland rivers I am doing, and so I have unabashedly fallen in love with it recently. (Fig. 1)

Taking a quick look, it makes sense to have my river flow down toward the southern 'inlet'. I'm figuring that this is an area north of the equator, so I won't have it flow toward the northern inlet, although depending on where I

place my river source, that might also be an available outlet. And just because I can, I am going to make the river travel through the hilly swales just east of the mountains, even though later on it will most likely mean I will need to use darker contours to suggest that a river has cut through those hilly areas over the course of many years.

So now I have at least a general plan in place. Keep your sheet effects off at this point, by the way. You can turn them back on when we're finished with everything. But for now, let's move on!

STEP TWO: START AT THE SOURCE

Admittedly, you don't *have* to start at the source of your river. I do, simply because more terrain features are going to affect the flow of your river while it's still a relatively small stream than will affect it once five or six tributaries have fed into it and turned it into a raging torrent of potential spring flooding and whitewater destruction.

So let's zoom in to where you want your river to start.

I mean it. *Really* zoom in. Like almost enough to go cross-eyed. We're actually going to be using the default river from your toolbar. The main thing is, when we create the river, we're not going to be creating the entire thing. We're going to break this big river up into *segments*.

I'm not going to lie to you. This can be a somewhat tedious process, especially zoomed in as much as we are. And there is every possibility that someone more versed in CC3/+ will raise their hand and tell me later that there's a much easier way to do it. But I don't know it yet, and in the long run, trust me, it will be worth it.

So start in the area of the mountains or highlands, create a small spur of the river, and right click after a few mouse clicks to establish What you see in Figure 3 is my river source: a fairly short segment of river. Thaaaaat's it.

STEP THREE: FOLLOW THE RIVER TO THE OCEAN

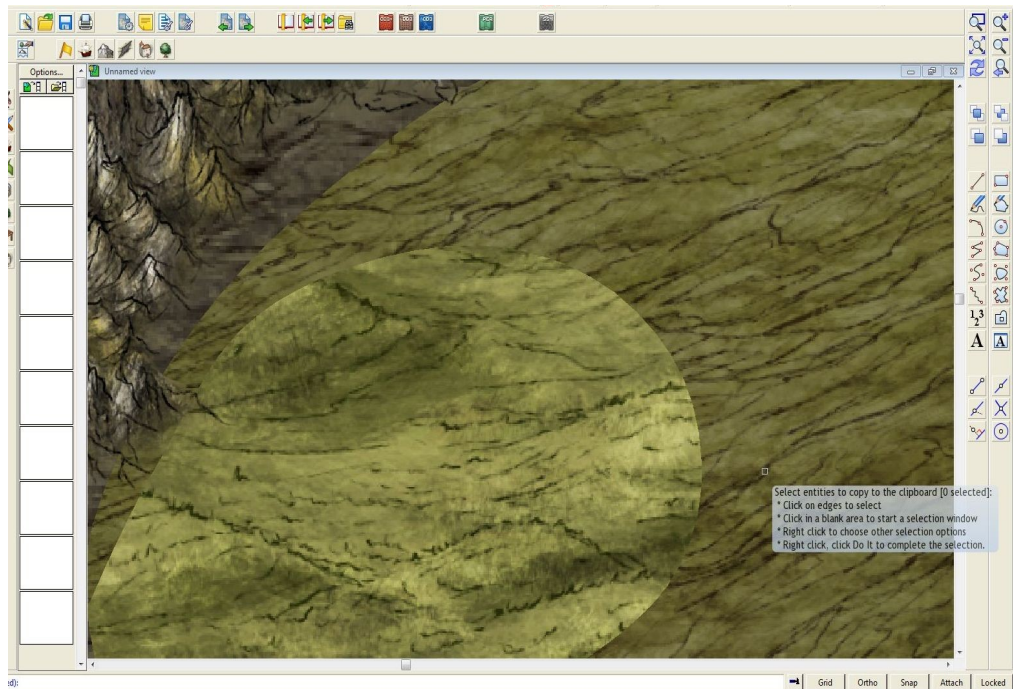


Figure 2: Not Zoomed In Nearly Enough

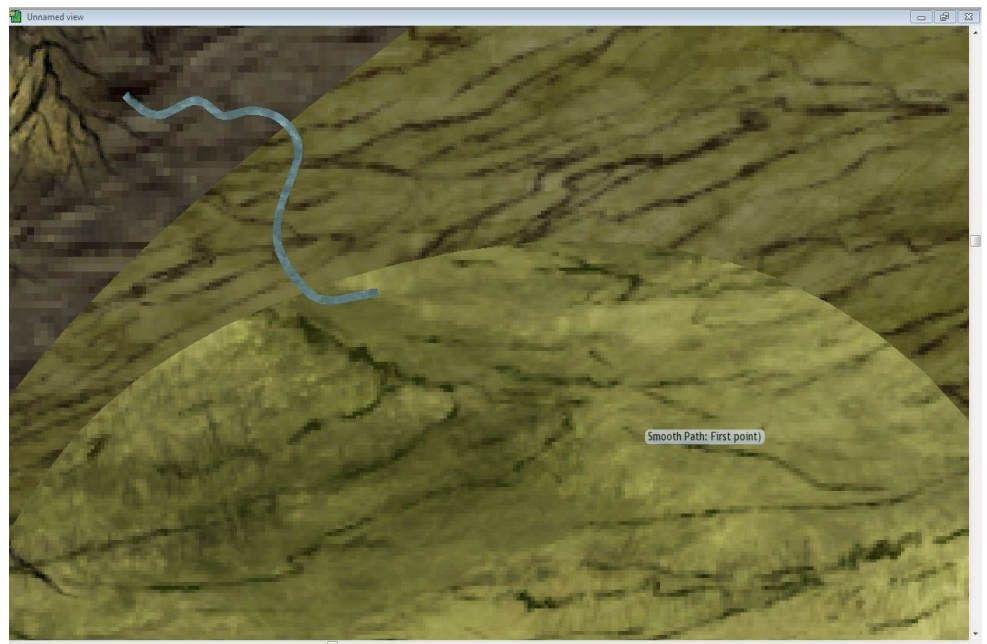


Figure 3: Probably Still Not Zoomed In Enough, But You Get The Idea.

What you see in Figure 3 is my river source: a fairly short segment of river. Thaaaaat's it.

The reason we're zoomed in until this tiny section of river looks big is twofold, too. First, because we're going to want to connect the next section as close to the midpoint of the previous section as we can. When we eventually drop the width of the segments, this will keep the river looking as though it flows from one section of stream to the next seamlessly, preferably with as few node adjustments as possible.



Figure 4: A relatively not-straight river flow. It could be much better.

The second reason is because rivers are organic things that are easily moved around by the lay of the land, especially this close to the source. Close up and in person, a river may seem to make gentle banks and turns and graceful, soft curves, but in a large overland map like we're making, they should look more like bolts of lightning carving their way through the landscape. Zoomed in this close, the small motions you make with your mouse to change the river's direction will create a much more natural looking flow when we zoom out. So get your mouse finger ready.

Move on to your next section of river, connecting it as close to the midpoint of the end of the previous section as you can. If need be, you can use the node adjustment tool after the fact. But remember: draw a reasonably short section-- one screen's length at the absolute most-- and don't draw a straight, or even a reasonably-straight-but-kinda-curvy line. Click multiple times as you draw, creating a lot of nodes, and move your mouse a lot. This creates the sort of ridges and furrows that are more in tune with a river's natural flow. Granted, I would say that it's *possible* that you could just draw a line and fractalize it, but you'd be surprised how much nicer the control of the flow of the river is when you handle it yourself. When you get to a reasonable length, right click to stop that segment and create the next at the midpoint of the segment you just completed.

Do this again. A lot. A *whole* lot, in fact. Zoom out when you need to, to check the overall progress of the river and

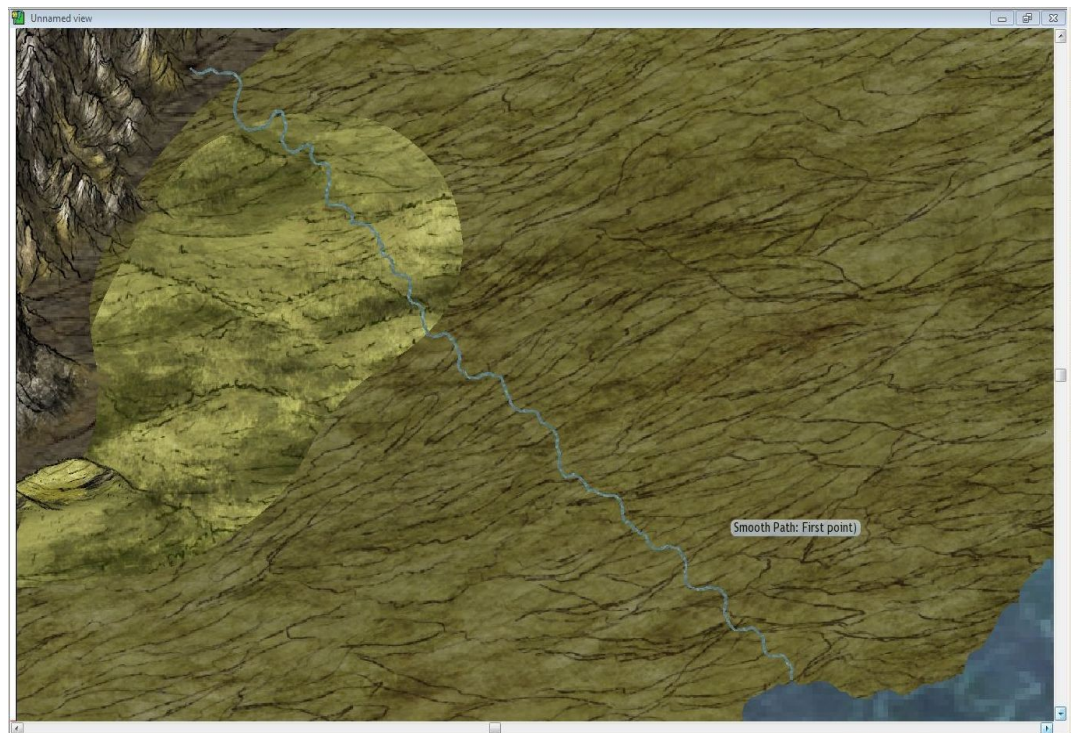


Figure 5: And hopefully, your river has much more personality than mine. Seriously, that's one **bor**ing river.

see if you need to adjust its course to get to your planned endpoint, and then zoom back in to continue the creation of river segments. Once you get yourself to the coast, take a short breather and save. The rest of this isn't nearly so bad, I promise, and you'll begin to see your hard work pay off.

STEP FOUR: CHANGE LINE WIDTHS

Now, to make things easier on yourself, go into your Sheets dialog and Hide all your sheets except the Rivers sheet. This will make it much easier to just select the segments of the river you have just created and none of the surrounding countryside. It may also make it easier on you to give your river—at least temporarily!-- a single color solid fill rather than a bitmap fill, so that CC3 highlights it when you select... all the easier to see where the segment you're going to adjust starts and stops.

Now zoom back to your river source. On the toolbar, right click on the Edit Properties button (Circled at right) and select the *Change Line Width* option.

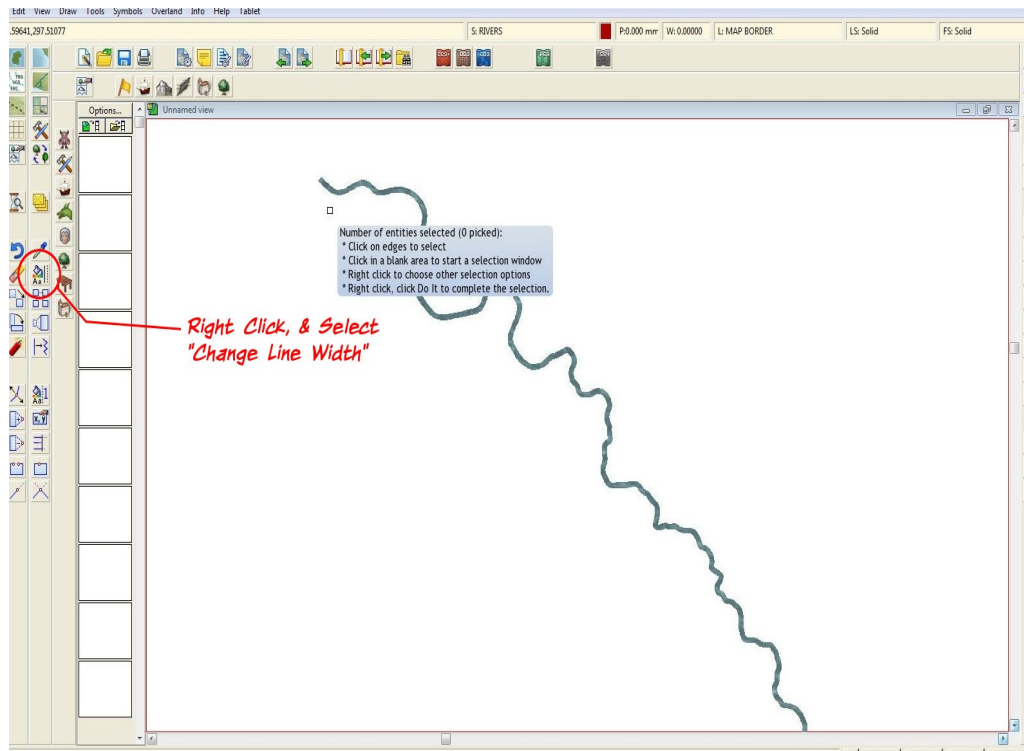


Figure 6: Gratuitous Text at no extra charge!

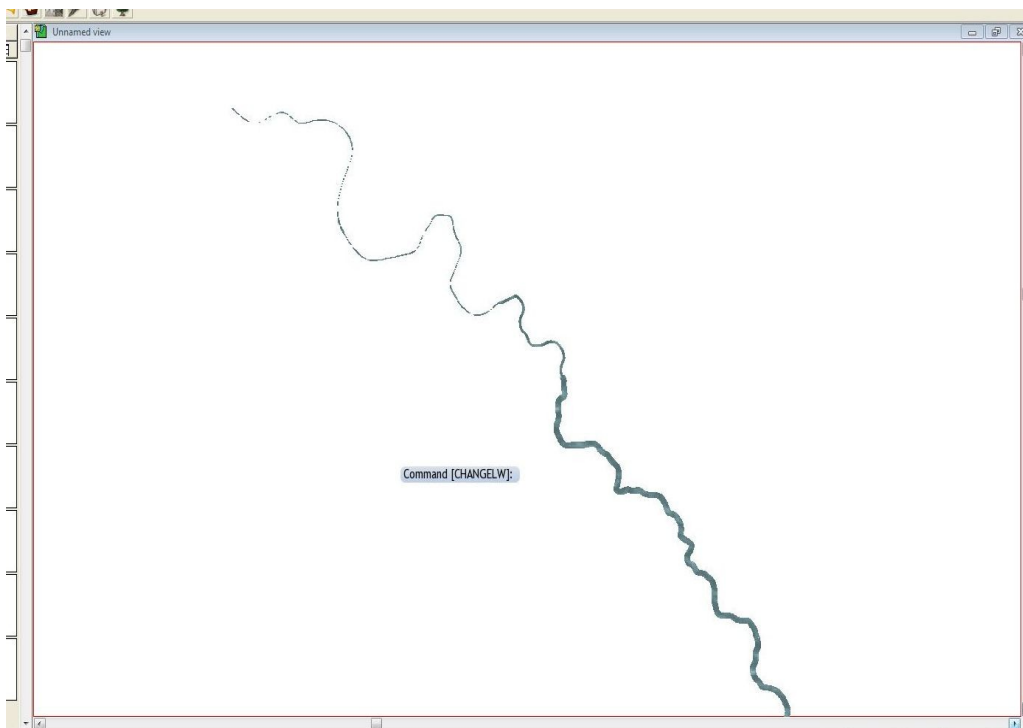


Figure 7: OMG! Look at that cute little river! LOOK AT IT, I TELL YOU !!!

Now, the fun begins. Select your source segment, the very beginning of your river, and right-click to select Done. We just want to select one segment of river at a time for this. CC3 will then ask what you want your new line width to be. I am admittedly unsure if the default size differs from style to style, but in the Herman Weilink map style, the standard size for the default river is 0.500 units. We're gonna switch that up.

Change your line width to something much smaller. Say 0.125 or 0.100 units. You can go even smaller, if

you're so inclined. Suddenly, the source of your river actually looks like the sort of size you'd expect from a mountain spring that's the smallest trickle of a stream that will eventually become the Amazon.

Now select the next segment and do the same thing, changing it to something larger: 0.200 to 0.225 is a good estimation. I tend to increase each concurrent line width to somewhere between 1.5x and 2x, especially in the smaller regions, and then add no more than 1 full unit to the line widths once they get above 1.5 units... you want to remember to make these increases in size gradual, so that the growth looks fairly seamless and not so blocky. The areas where the lines grow are perfect spots for you to connect smaller tributaries to later on, as well, making it seem as where two rivers junction, the entire thing grows.

STEP FIVE: FINE-TUNE YOUR WORK

You may find yourself having to move and adjust some of your endpoint nodes of the segments to ensure that they seem to join together seamlessly, and as your river size increases, you may find points where you'll have to either add or delete nodes because the thickness of the line, coupled with a bend of your original river, causes the line to double over itself. Generally, those only start to cause issues when the river is nearing its empty spot near the coast. And once you reach the coast, it's also a good idea to make your landmass sheet visible and move the nodes of your landmass where the river hits the coast to better accommodate your fully grown river. Little details like that can really add to the overall effect.



Figure 8: Finished! ...well, at least, for now!

Then, by all means, turn all your sheets back on, change your river fill to a bitmap if you plan to do so, and turn on your sheet effects if you wish. (Sidenote: Check your rivers with the style sheets on, especially where they impact the coast. A lot of styles add an edge glow to the river sheet. You may want to tweak that slightly so it's not overly noticeable where the river empties into the ocean.)

And now, soak in the happiness and feeling of accomplishment. Or if you're me, do so at least until you realize that you probably have another thirty or so of these to create.

Hope this helps everyone!

- Mark Hughey / ArgoForg

PS: *I will admit that my understanding of the inner workings of CC3/+ is a little lax. In fact, right now, my fervent belief is that when I load the program, a small batch of Keebler Elves with electronic pencils are what make it go. So I really have no idea if this technique of mine is particularly taxing on the CAD system that CC3 runs or not. That is for people much more technically inclined than me to lambaste me over. I am also pretty sure that there are those among you who might be able to create a macro or something of the like to automate this entire process, and if you tell me about it, I am sure I will stare blankly at you and slowly nod in agreement, even though there's a pretty good chance I have absolutely no idea what you are talking about.*