Intro to Mapping and GIS: Module 4, part 3 Simplifying with QGIS

Welcome back everybody to the hands-on portion of module 4. We just got done geocoding data, we're going to simplify data now. First, we're going to do it in QGIS and then we're going to go outside of QGIS to do it with another website. So what is simplifying first off? Simplifying is the idea of taking a complex shape and simplifying it just a little bit.

So it isn't quite as smooth and the edges can be a little rougher depending on the shape, but the idea is to sort of dramatically reduce the size of the file, and that's important when you start going to export shapes and you start thinking about publishing them online a lot of raw shapefiles, especially a very big complex things.

If you just put that out there and you don't do any simplifying at all, it can take a very long time for like a browser to load, especially if you're on your phone which tends to load things slower anyways, so simplifying is an important concept to keep in mind if you're thinking about publishing your map to the web.

And it will make more sense as we go through it so you can actually see what this process looks like and how it changes the shapes. So again, we're going to go over how to do it in QGIS. So go ahead and open up the countries shapefile and QGIS if it's not open ready. I also have this public health locations, which we just geocoded input on the map. We're not actually going to need that for this part of the course.

So I'm going to go ahead and hide it, you can remove it as well if you want, but focus on the countries. So what I'm going to do is I'm going to basically take the United States, I'm going to simplify it, and then I'm going to save it as a new shape, and so in your kind of see what happens when I simplify as we go through it.

So the first step I'm going to do is I'm going to go ahead and click my little arrow over here this select feature arrow that we've been working with before. I'm going to go ahead and click on the United States. I'm going to inverse select the United States again, you remember this from module 2, toggle editing, go ahead and delete, go ahead and hit yes, and now we have just the United States on our map.

So next I'm going to actually simplify this, so go ahead and go up to “vector geometry tools”, simplify. The input layer is going to be countries. The tolerance you definitely going to want to play with this a little bit, so the higher the tolerance the more simplified the shapes are going to be so that means the plus of that is the file size is going to be smaller, which is great, but it also means that the edges are going to be rougher.

So if you want to play around with this and just see what happens when you simplify the United States, when you do 1, 5, 10, .1, .5, and see the difference, you can definitely tell what that means and why that's important. For this case, I'm just going to do like .25, it's a good tolerance

for this and I played around with it beforehand to kind of come to that conclusion, but I'm gonna go ahead and type that in, and go ahead and hit run in background, go ahead and hit close. So you now have this new shape up here. It's very similar to what we had before, but not quite, so it's kind of nice to have the original on top of the simplified version.

You'll see here is we have this simplified layer now in the layer panel, go ahead and start toggling that, you can see kind of how it went about simplifying things. Let's zoom in specifically to Texas, this is a good use case.

So here's the original shape, you can see these little lines here. All these little complicated little inlet lines on the coast there, it's really nice detail, but it adds to the file size, anytime you have like a lot of complicated lines like that it's going to add to the file size. So the idea of simplifying is kind of smoothing over that part and especially if like, you're building a map and you're going to show like the entire United States, you may not get really super close in here.

So the reader may not know the difference from like a zoomed-out view, so simplifying could be a nice little tool for that. So go ahead and click on the simplified shape and you'll see what happened there and go ahead and you can leave the other countries shown and you can see kind of difference between the two.

Before you had really smooth lines and now they've kind of simplified those line and made much more jagged edges, which again means the ultimate file size is going to be much shorter. So go ahead and unselect the countries as well. Let's go ahead and zoom out.

This isn't too bad. I would maybe take the tolerance down just a tab. This isn't too bad in terms of the zoomed-out view. You still get the pretty consistent shape the United States, certainly if you were going to do like world view or show more countries, or if you were going to have Canada on your map, this would be a great tolerance level because you wouldn't even notice how jagged of these lines in because you're so zoomed out.

So we're just going to leave it at that for now, but again, feel free to play around with it. You can go back to that original country shapefile, go through the process, change the tolerance and see what it looks like at different tolerance levels.

So that's pretty much it, let's go ahead and save first. So go ahead and right click on that new simplified shape, go ahead and click export, save feature as, make sure you go to your directory, I'm going back to the same directory I've been in, I'm just going to call this "U.S. simplified", save, hit OK, and a new layer will show up as well.

One other quick thing I'll note as well, at any point if you're ever working on a QGIS project and you want to like say you're halfway through something, but you're going to come back to later, you can always go to 'project save as', and you can actually save the QGIS program instead. Up into this point, we've saved the shapefile, but you can actually save the program and

whatever state you're in, so it will include all the layers, all the edits, so like if you're halfway through an analysis and you got to run but you're going to come back to it tomorrow, you can actually save the QGIS project and come back to it the next day.

So I'm just going to call this “U.S.” for now, hit save, and it is now saved. So that's it for this video in module 4. The next video is going to look at a different way you can simplify data, a different tool you can use called MapShaper.

It's just a website, very similar process, but it has one cool feature that I want to show show y'all, and then after that we're going to talk about exporting data as well. So that's kind of a final step to get your map out into the world. So I will see you in the next video.