Transcript - Making a dot density map

Welcome back everybody to the hands-on portion of the course. This is module 3, beginning module 3 and just got done hearing from Darla about how data analysis and geographical analysis can add to your stories.

We also saw her talk to a couple people from The Washington Post and a really cool project put together. Hope you enjoyed that. So she talked about different ways that geographical analysis can add to your stories. So we're going to actually show you how to do many of those types of analysis in QGIS.

So we're going to go over three different types of analysis in this module, one video per analysis. The first we're going to get into is dot density and then we'll get to points and polygons and point buffers after that as well, but let's focus on dot density today.

So the first thing you need to pull up is QGIS open. Obviously, you also need that San Marino data set that we are working with last time. If you remember we just got done getting rid of all the countries besides San Marino, so we're left with just a shapefile which is that country.

Go ahead and have that open, that's what we're going to be working with for this video. So you see I got pulled up here, we've got San Marino, so we're going to do what's called a dot density map. And the idea behind this is you're going to take a shape in this case San Marino, you're going to take some sort of value in this case we're going to use population and we're going to put that population value we're going to put dots inside of that shape for representing that value.

So what that means in this case is we're going to have the population of San Marino is 33,000. So we're going to have 33,000 dots randomly placed inside the shape to basically show that there are 33,000 people that live in this country and people have done that, obviously the Washington Post have done that, people have done that all over the world to kind of show different trends.

So for this map we're not going to get into coloring them at all. We're just going to simply put the dots on the map. It's pretty easy to do. It's a very sophisticated sort of analysis, but it's very easy to do in QGIS fortunately, it's only a couple clicks, especially since we've got the data ready to go.

We've got the San Marino shapefile, it already includes the population estimate which we are looking at in the last module. So go ahead and have that open. The first step we're gonna do here is we're actually going to go up to a little menu button which we've kind of worked with, you may remember the layer menu button.

Go ahead and move over to the vector. Go ahead and hit research tools and we're going to go to random points inside polygons, and again this is going to put random points of side polygons.

The point in this case is going to be population and the polygon is going to be San Marino. So go ahead and click on that. Input layer is going to be the San Marino shapefile we were working on.

Points count is the sampling strategy. I'm not going to get in to that too much, but there are a couple of different options if you do some research go for it. The expression is actually going to be the column that you're going to use to create the points. And again we're going to use the population column within that San Marino shapefile. So go ahead and go down to the population estimate.

There's a lot here, don't go past is pretty easy to do when there's like five thousand columns in the spreadsheet or in the shapefile. Go ahead and click on population estimate and there's this other option here we're going to ignore, but there are some options if you don't want points to be too close together that isn't an option.

I'm not going to worry about that for now, but you know if you don't like the look of it you can kind of play around with that and see what things turn out, but this is all we need to do for now. Go ahead and hit run in the background you'll see it's sort of processing the algorithm and then it's done.

There's really no indication that it's done, but if you hit the close button all of a sudden you're going to see all these really cool dots on the map, and as like I said these are this represents 33000 individuals. So every dot is a person, they're randomly placed in the shape of San Marino, if you start zooming in you can see all of those dots and again these are randomly placed.

So the idea is if you were to run this again they would be placed just a little bit differently. I mean it's still be spread out quite a bit, and at this zoom level would probably still look about the same, but it would place him a little bit differently. So yeah, that's how you put random points inside a polygon.

It's a really nice little useful tool. Like I said the Washington Post and other places use it as well. If you want to save this you can, just go ahead and hit right click over here, export, safe features as, go ahead make sure you find a directory you're going to save it in. I'm gonna do "San Marino dots", go ahead and hit save. Hit OK and you will have a new shapefile.

Once you do that there's a lot you can do with that, but that's a good first step. So that shapefile represents a dot density map. The dots for people in San Marino are now saved in that shapefile so you can do a lot of really cool things with that type of analysis.
Obviously the Washington Post did it to look at racial trends across the country. There's tons of different ways you can go forward with this, but that's all we're gonna do for now. We're gonna look at a couple different ways to analyze different types of data going forward so we have two more videos, two different types of analysis so make sure you check on it. Thanks!