WT_WTMA_SpotHeight-250k

This document outlines the processing of the WTMA SpotHeight250k shapefile for display in the e-Atlas.

Layer Preparation

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Original data

The figure below shows the raw SpotHeight_250k data. This shapefile consists of 134,000 points. Displaying all these points at once results in a solid fill of colour. To display this data with a zoomed out view we must cull the number of points in a sensible manner.

Generalisation by Random Selection

Since the SpotHeight250k does not have any attribute that allows the number of points to be selectively reduced a new attribute was added to allow for this scaling. The simplest scaling of points was done by adding a random number attribute associated with each point. This random number along with a filter such as "RANDOM" < 0.1 could then be used to selectively choose the approximate number of points to display. This random filtering was also used to create a new shapefile (SpotHeight-med), with a subset of the original spot heights, to improve the rendering speed of the zoomed out maps.

The following tutorial was found to be useful in detailing adding new attributes to shapefiles:

http://webhelp.esri.com/arcgisdesktop/9.3/pdf/ArcCatalog_Tutorial.pdf

Processing steps:

1. Using ArcCatalog SpotHeight_250k was duplicated and renamed it to SpotHeight-full. This copy was to ensure we don't modify the original data file.

2. Using ArcMap, a new Map was created then SpotHeight-full was added as a layer. This was done by dragging and dropping SpotHeight-full from ArcCatalog.

3. RANDOM attribute was added:

1. The Open Attribute Table was opened from the right click menu off the SpotHeight-full layer.

2. The RANDOM field was then added:

Options/Add Field... Name: RANDOM, Type: Float, Precision: 6, Scale: 6.

The precision represents the number of digits and the scale represents the number of decimal points.

2. The field calculator was then used to populate the RANDOM attribute:

Right click on RANDOM column header and select Field Calculator. The attribute expressions was: RANDOM = Rnd. The Rnd function is a Visual Basic method for generating a floating point random number between 0 and 1.

3. The number of points was then trimmed based on a random selection:

Analysis Tools/Extract/Select:

Input: SpotHeight-full.shp

Output: SpotHeight-med.shp

Expression: "RANDOM" < 0.05

The resulting shapefile has only 6700 spot heights. This should greatly improve rendering speed.