

Acquiring, Processing, Using LiDAR data

Location: Touchet river

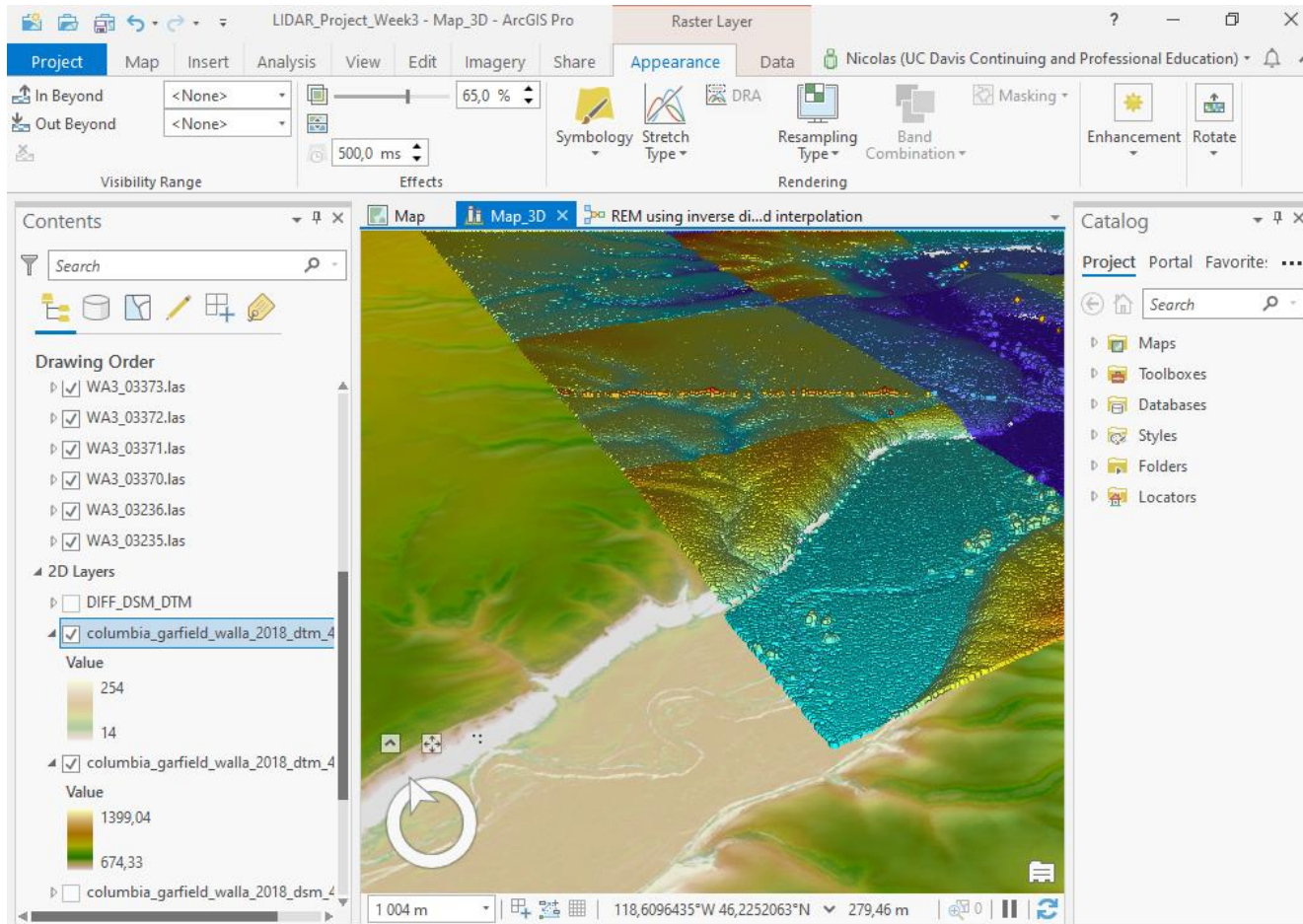
Name: Nicolas Vuille-dit-Bille

Reference: <https://lidarportal.dnr.wa.gov>

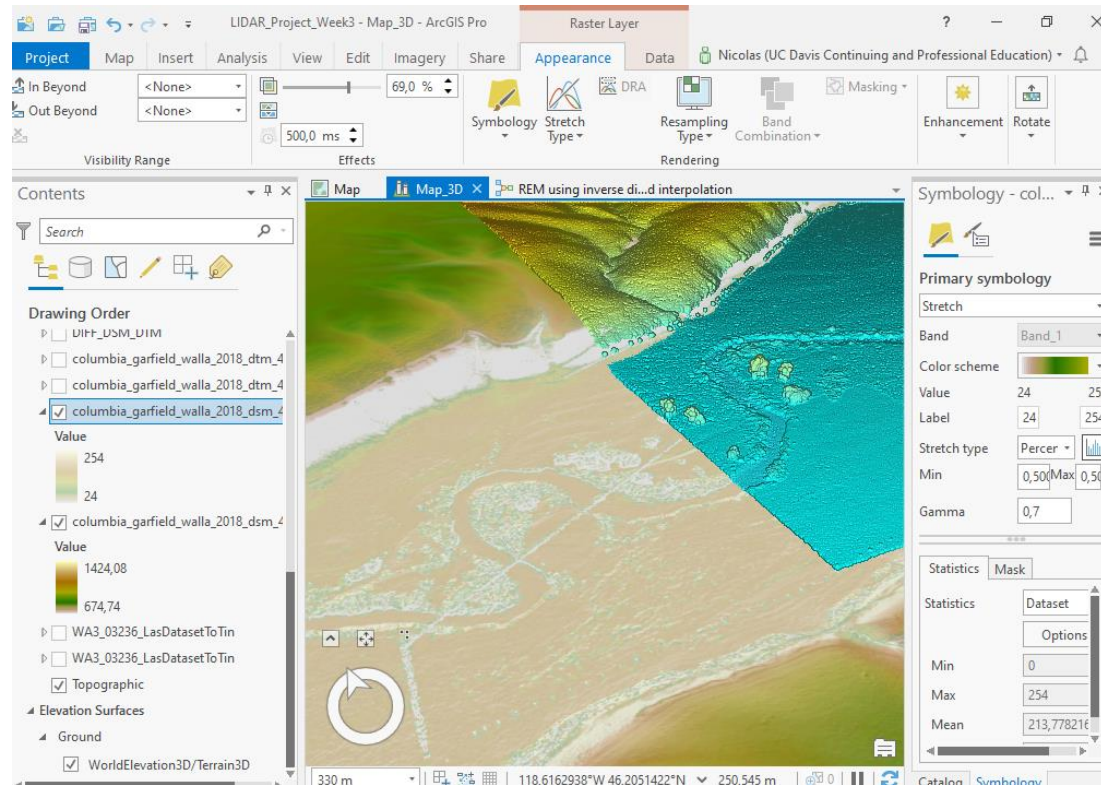
Process outlines

- Extract data from Washington LIDAR Portal
- Convert this data to a database with LAS format
- Create a LiDAR Dataset (*.lasd)
- From the *.lasd, generate a TIN (Triangulated Irregular Network)
- Build a model, inside of Model Builder to produce a REM

DTM and DTM hillshade (include the wire-frame of the las files)

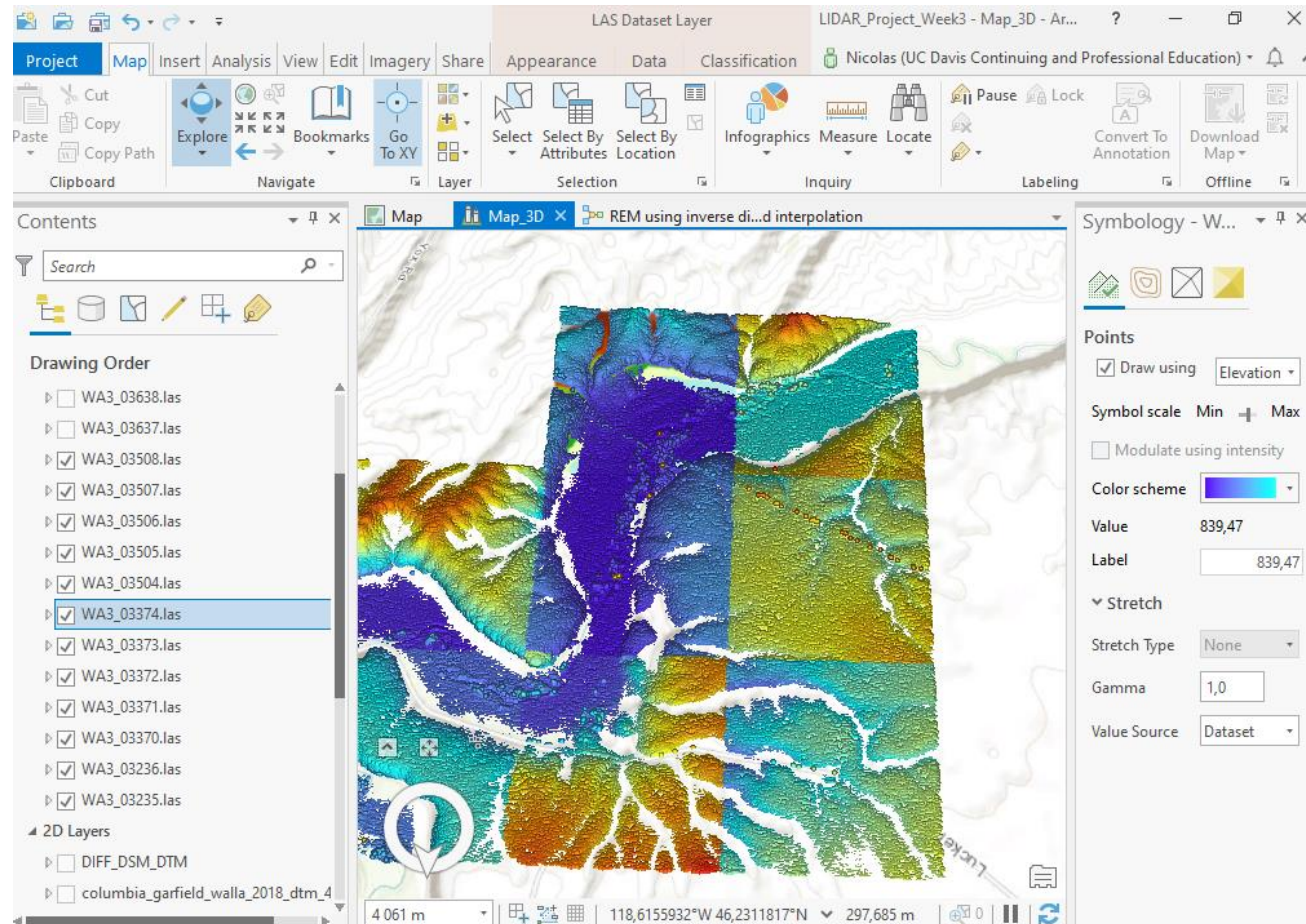


DTS and DTS hillshade (include the wire-frame of the las files)

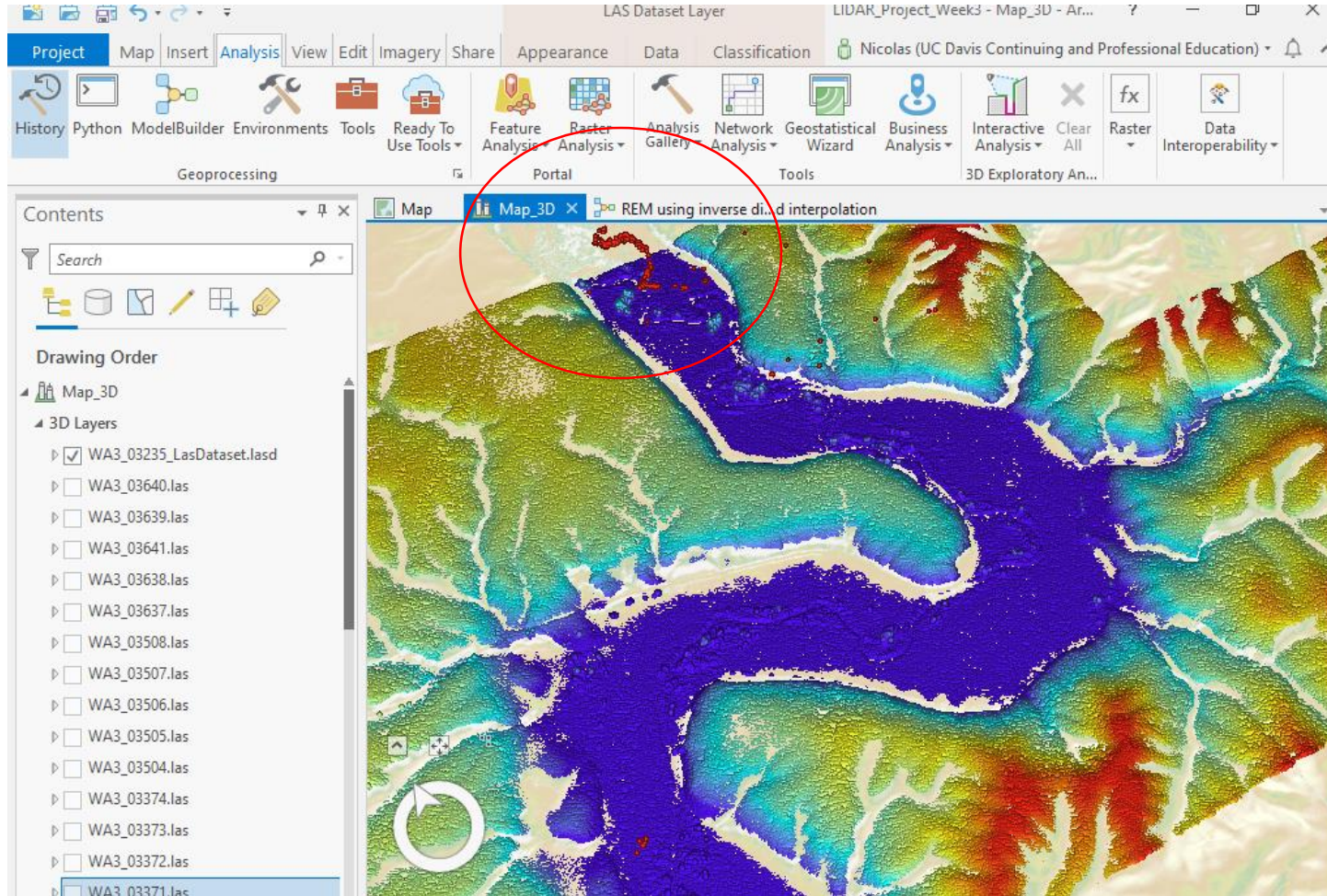


- Vegetation becomes visible around the river shape with DTS

Screenshot of min. 4 *.las tiles (disparate color ramps for each tile)

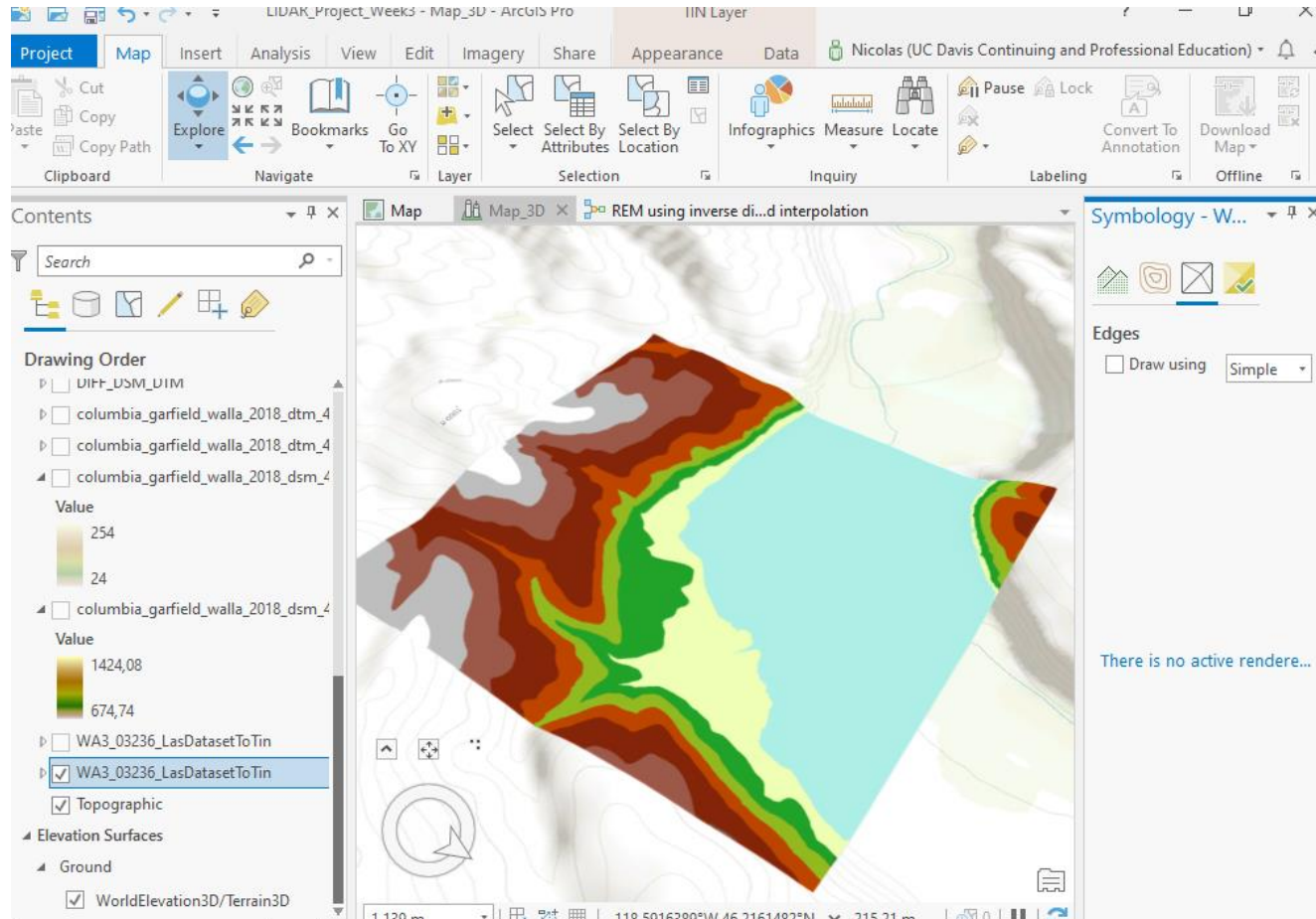


LiDAR Dataset with uniform symbology



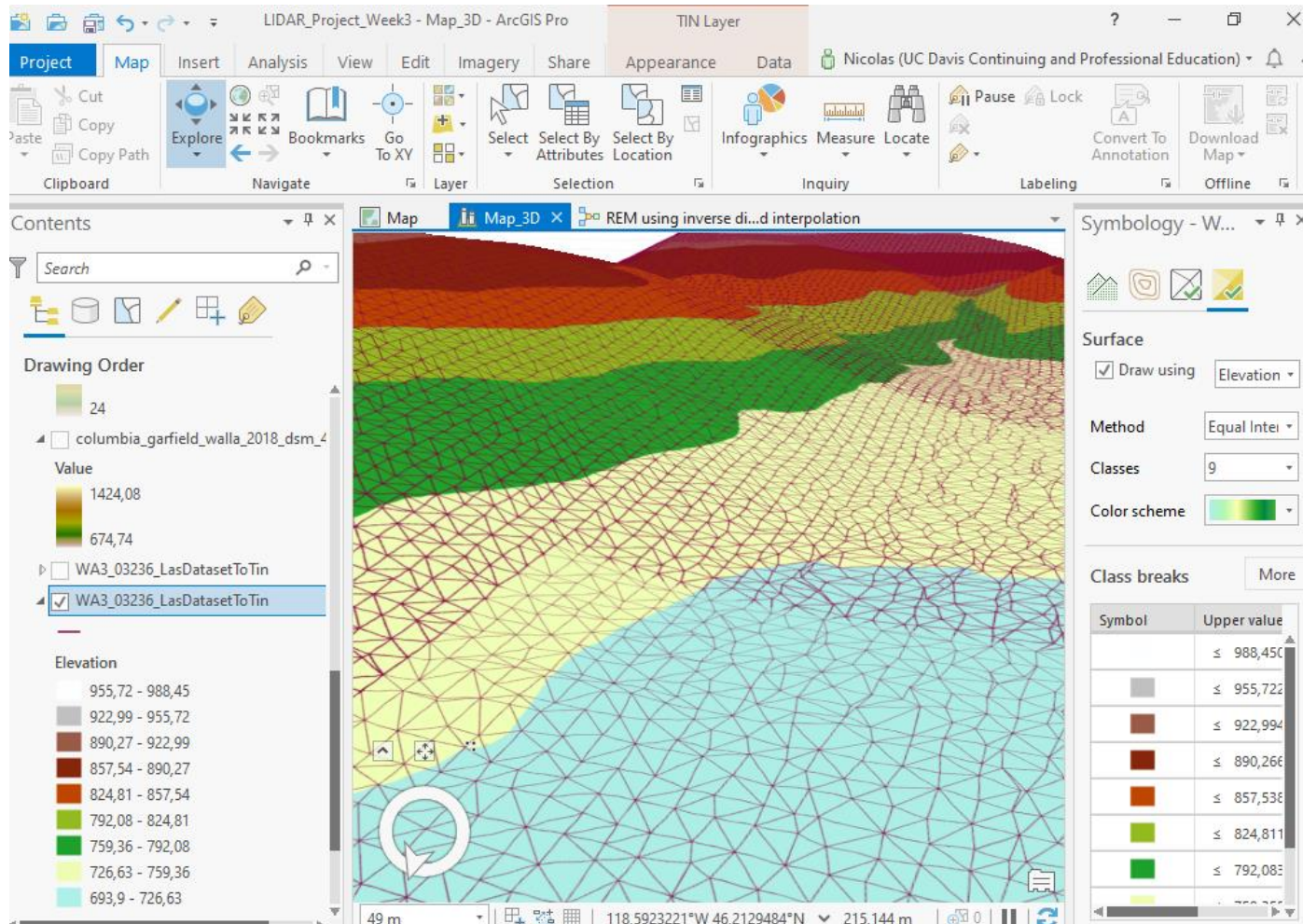
- Uniformity allows to see some points pattern like the plane flight path (red points highlighted with red circle)

TIN - full extent



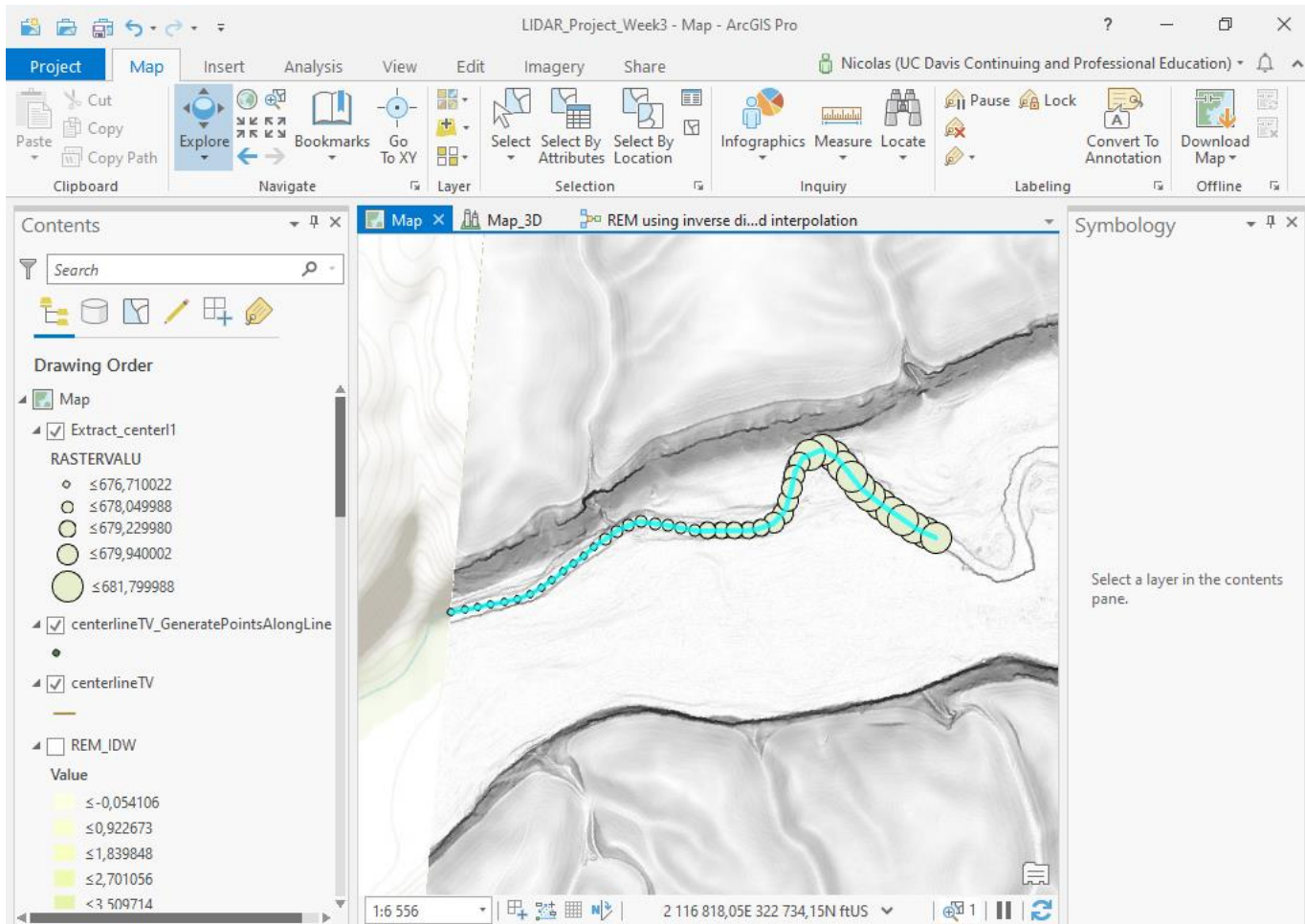
- The TIN (Triangulated Irregular Network) has been generated from *.lasd dataset

Portion of the TIN with points and breaklines symbolized as well



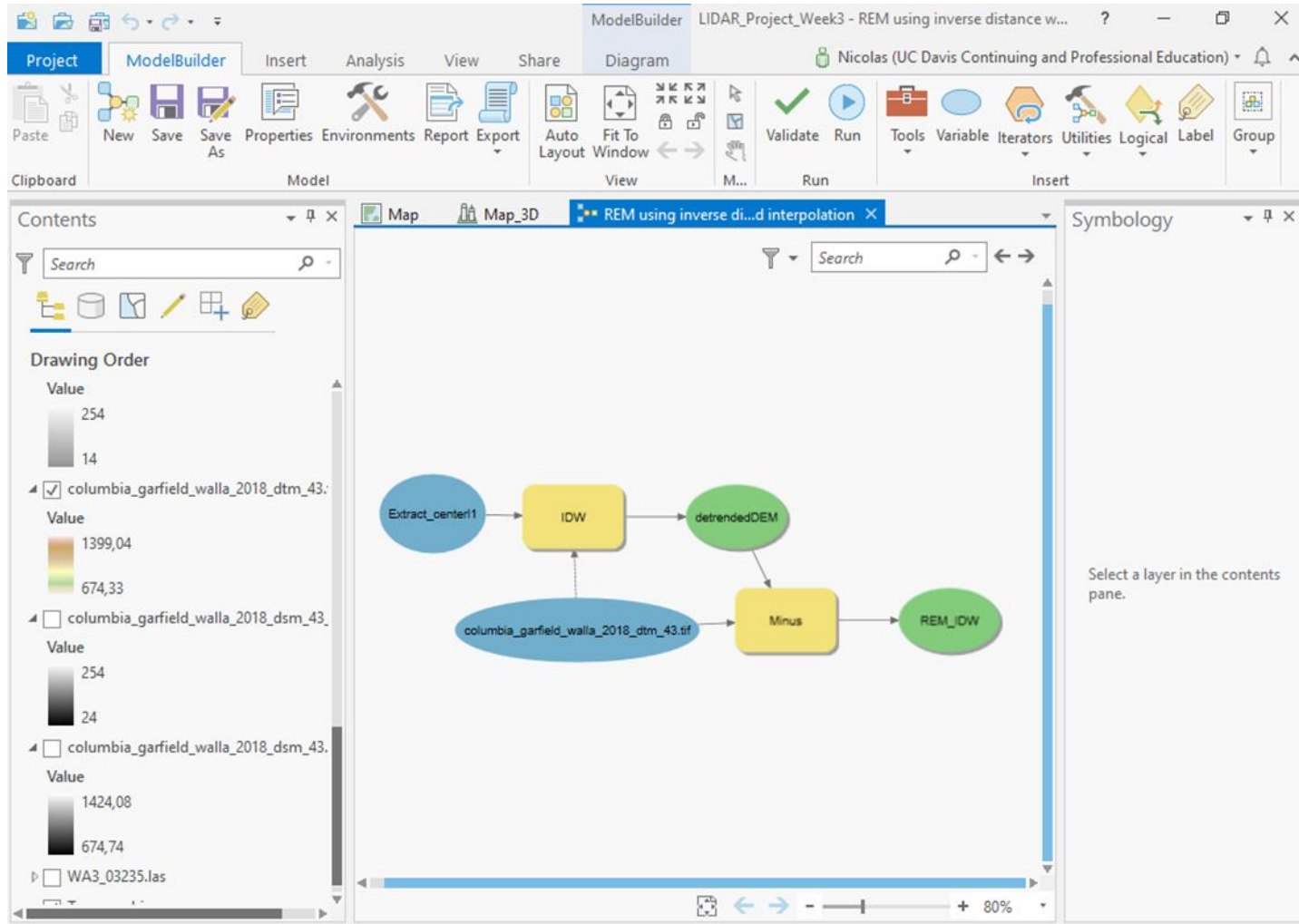
- TIN is a representation of a continuous surface built by triangular facets

Digitized channel centerline including the points generated (at a fixed distance) along the line



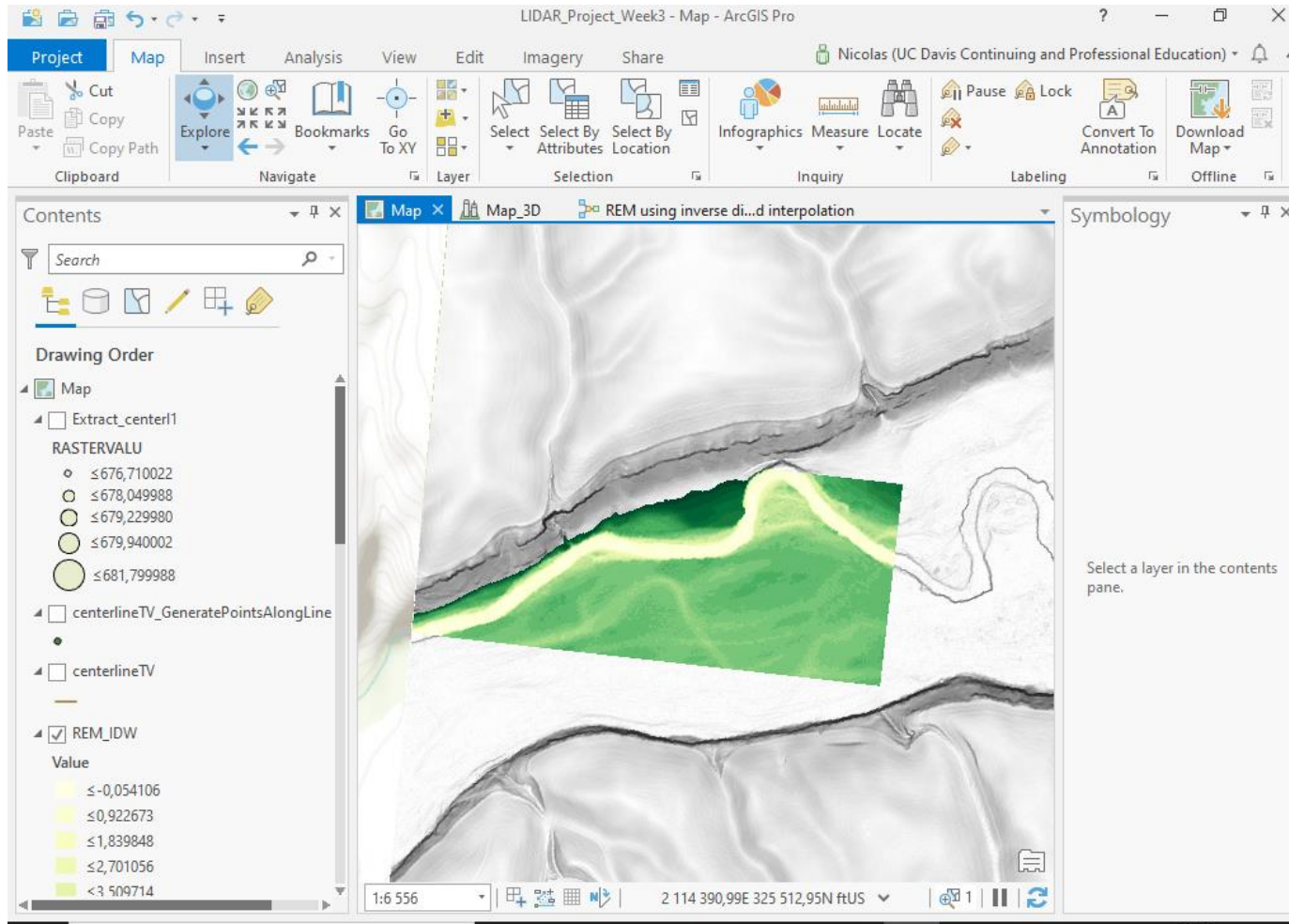
- On the right: upstream
- On the left: downstream
- The size of the circle increases with its elevation property

REM model in Model Builder



- The model has been built using Inverse Distance Weight (IWD) for multivariate interpolation

Relative Elevation Model



- Higher river channel flow corresponds to lighter colour