Ecohydraulics
HYD254

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AUTOTUTORIAL 7: SPATIALLY DISTRIBUTED MANNING'S N

Background: Vegetation is a common feature of river corridors yet its role on 2D hydrodynamics is still poorly understood and inadequately accounted for in modeling. In recent years a new algorithm has arisen to improve the spatial representation of vegetation in 2D models. In this assignment you will gain experience with the algorithm.

Objective: Practice the steps involved in mapping patterns of Manning's n.

Materials: HYD254_tut7_roughness.zip, ArcGIS, MS Word.

Homework assignment:

1) Read Chapter 10 of the textbook.

2) Follow the steps from Chapter 5 to create depth and canopy height TINs and 3-foot rasters using the provided .csv files.

3) Use the workflow on pp. 139-140 of the textbook and Spatial Analyst to make a raster of Manning's n. Note that the equation for "f" in the flow chart on p. 138 is incorrect (missing "1+…"), while the equation for "f" in the workflow itself is correct.

4) Write up a brief summary of your work. Provide your interpretation as to what the roughness regime is like in the model domain.