Tutorial: Land Use Land Cover

NASA DEVELOP Riley County Water Resources – Summer 2020

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Procedure Overview

This tutorial provides the steps necessary using ArcMap to synthesize two existing data sources, the National Land Cover Database (NLCD) and the Cropland Data Layer (CDL) in order to create an accurate Land Use Land Cover (LULC) raster layer with detailed urban and agricultural crop information.

Data Used

NLCD: https://www.mrlc.gov/viewer/

CDL: https://www.nass.usda.gov/Research_and_Science/Cropland/Release/

LULC Calculation

LULC Creation Toolbox created using Model Builder in ArcMap

Inputs:

- Clipped Cropland Data Layer
- Clipped National Land Cover Dataset

Outputs:

- CDL Crop – CDLcrop_XXXX
- NLCD Urban – NLCDurban_XXXX
- NLCD No Urban – NLCDnourban_XXXX

Working Geodatabase:

- Current Workspace – Where the final file will save

Mosaic Output Name

- LULCXXXX

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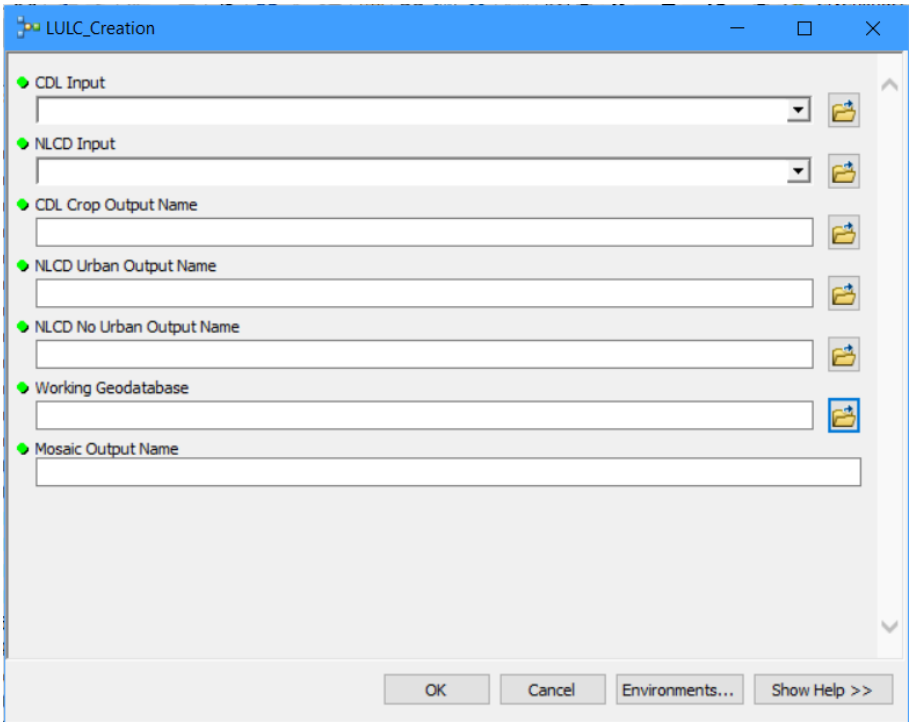

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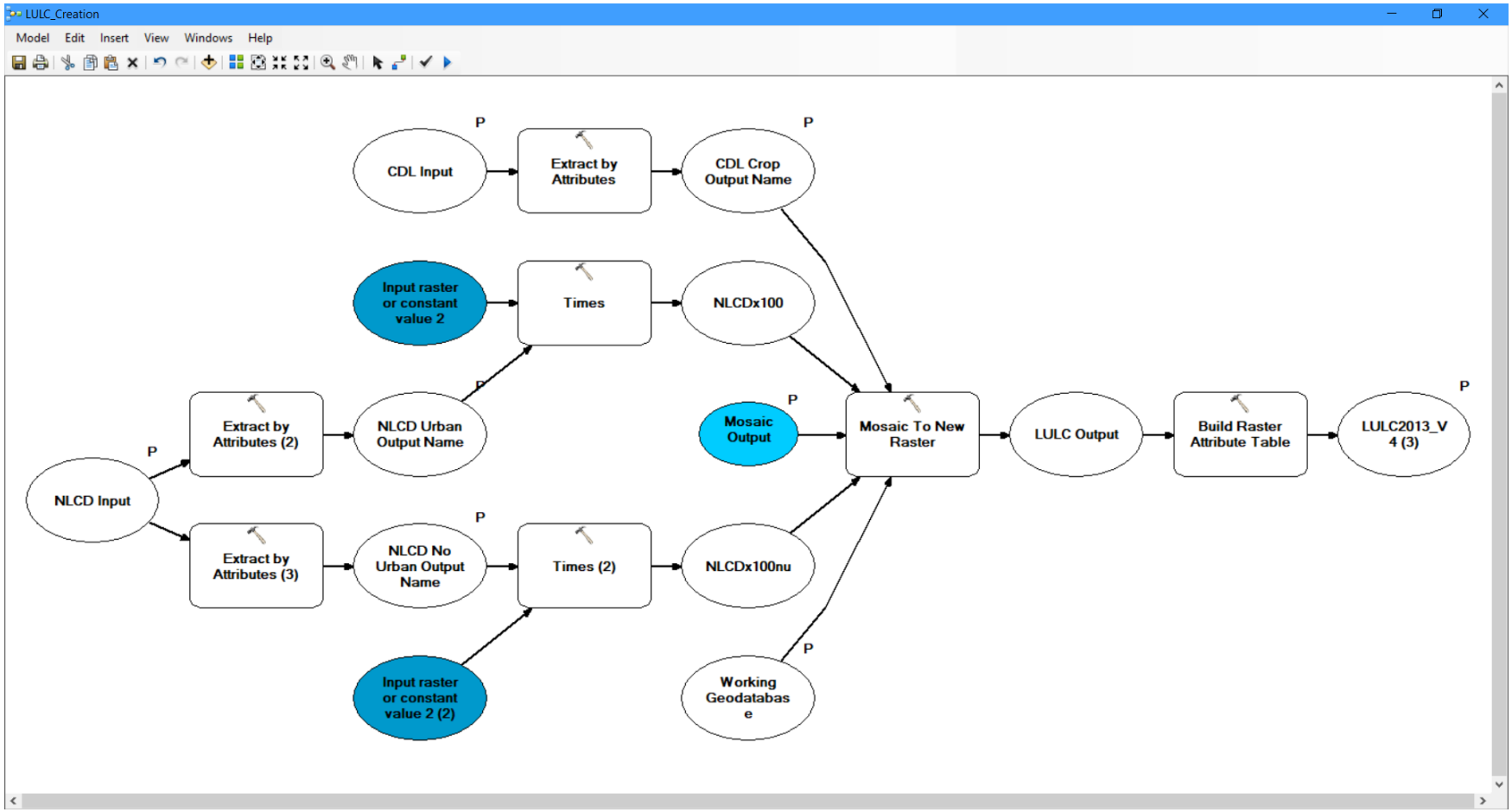

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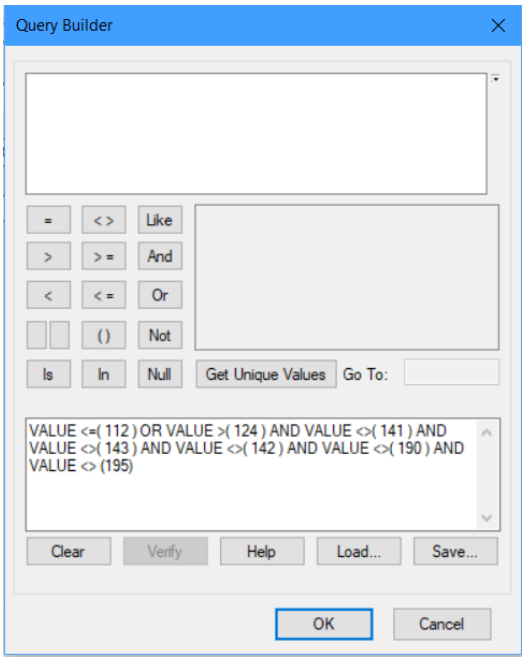
Extract by Attribute

Cropland Data Layer

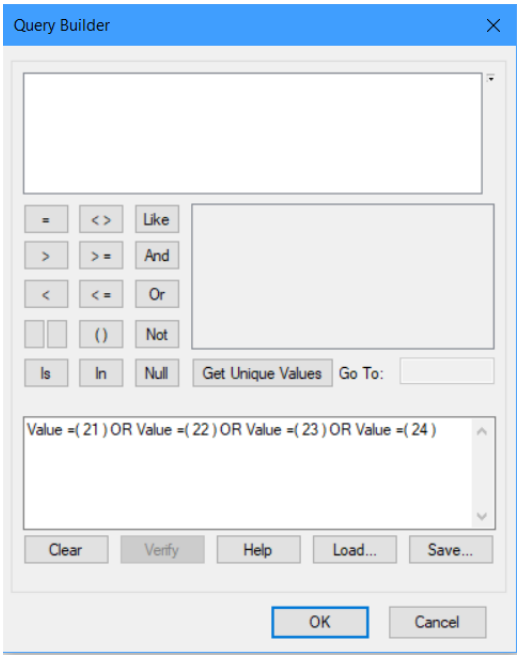
Query: **VALUE <=(112) OR VALUE >(124) AND VALUE <>(141) AND VALUE <>(143) AND VALUE <>(142) AND VALUE <>(190) AND VALUE <> (195)**



National Land Cover Dataset

Urban Only

Query: **Value =(21) OR Value =(22) OR Value =(23) OR Value =(24)**



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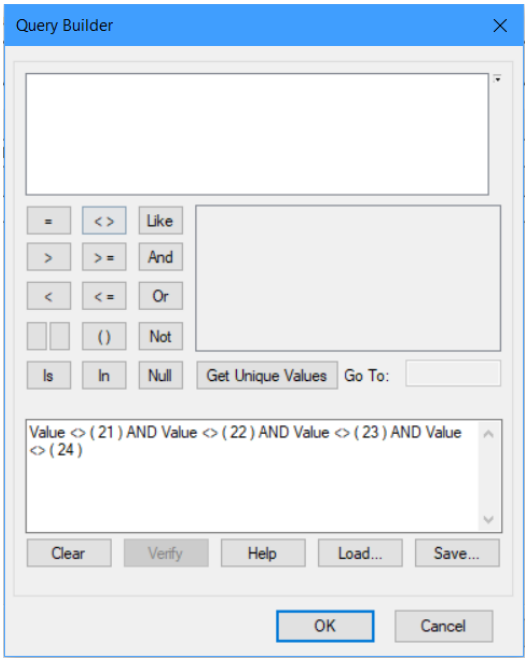
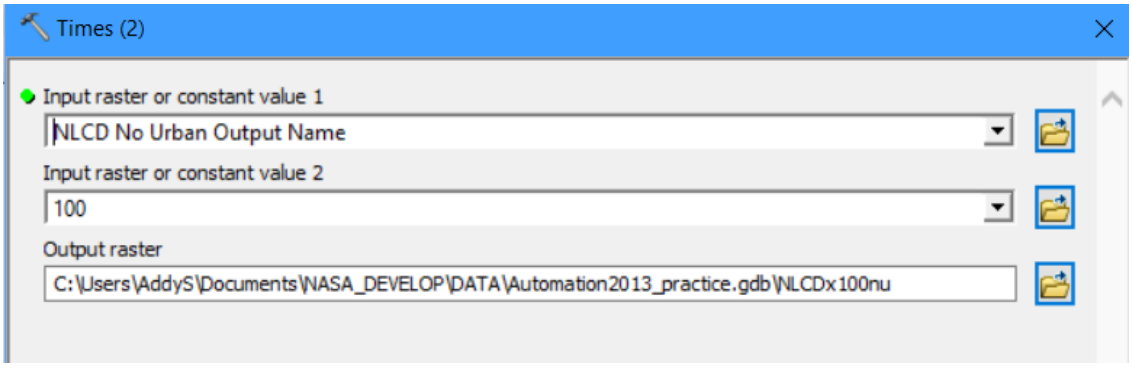
No Urban

Query: **Value <> (21) AND Value <> (22) AND Value <> (23) AND Value <> (24)**



Times

Multiply NLCD no urban and urban layer by 100



Mosaic to New Raster

Input Rasters

NLCD Urban

CDL Crop Only

NLCD No Urban

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Output Location

Working Geodatabase

Raster Dataset Name with Extension

Output Name

If saving in a geodatabase don't add a file extension

Otherwise save as a .tif

Pixel Type

16 BIT UNSIGNED

Cellsize

30

Number of Bands

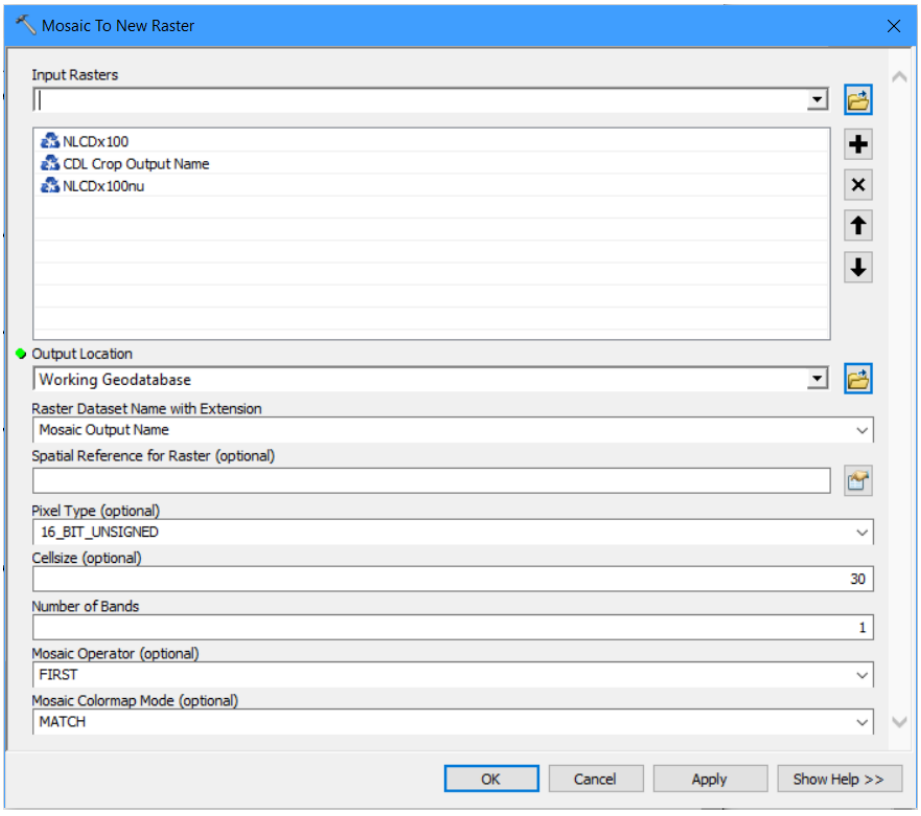
1

Mosaic Operator

FIRST

Colormap Mode

MATCH



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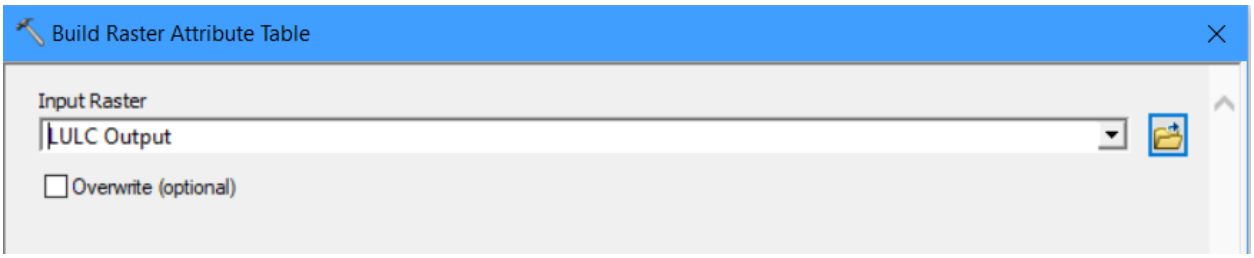
Build Raster Attribute Table



This step builds an attribute table in order to review the data by fields.

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