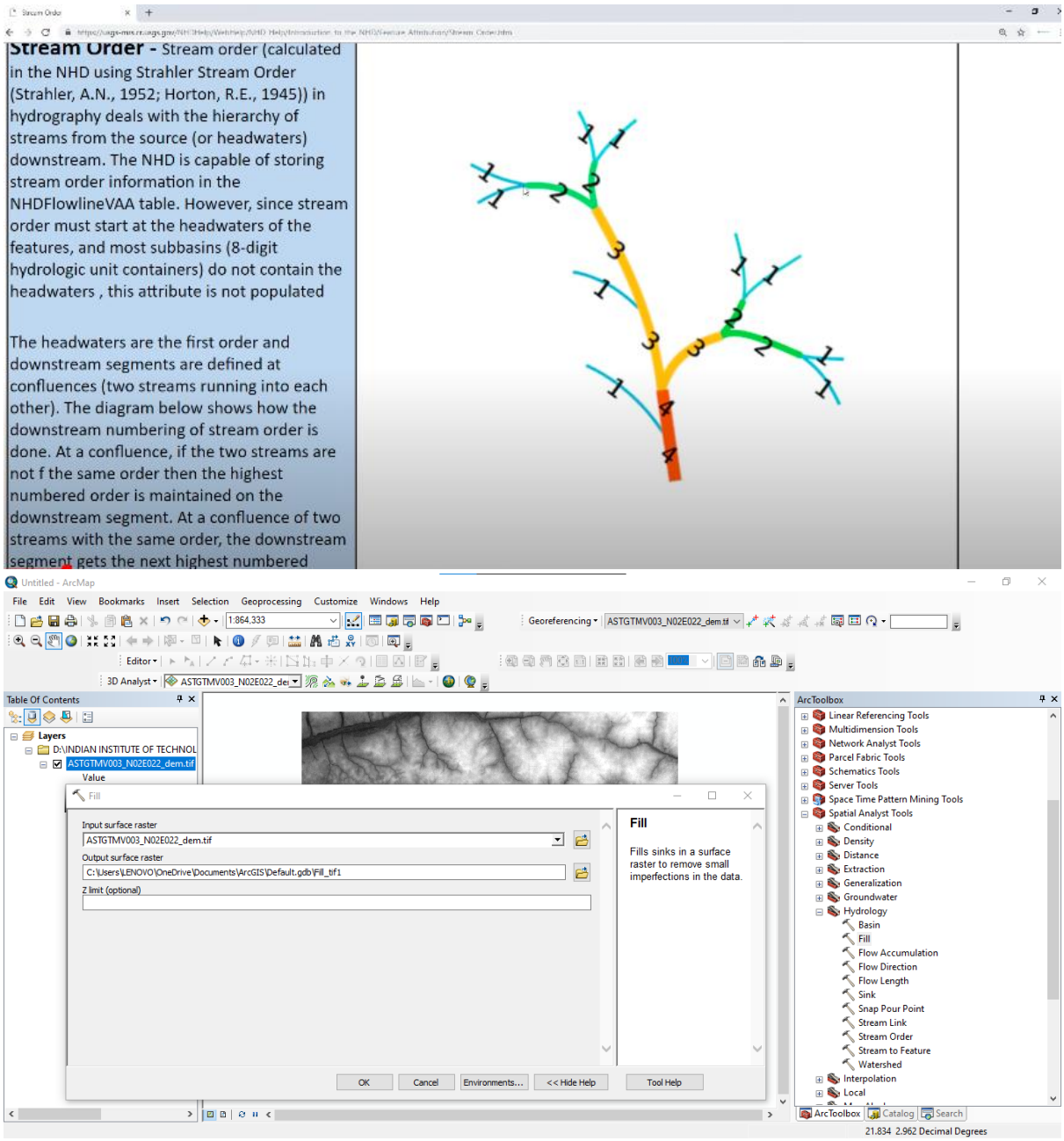
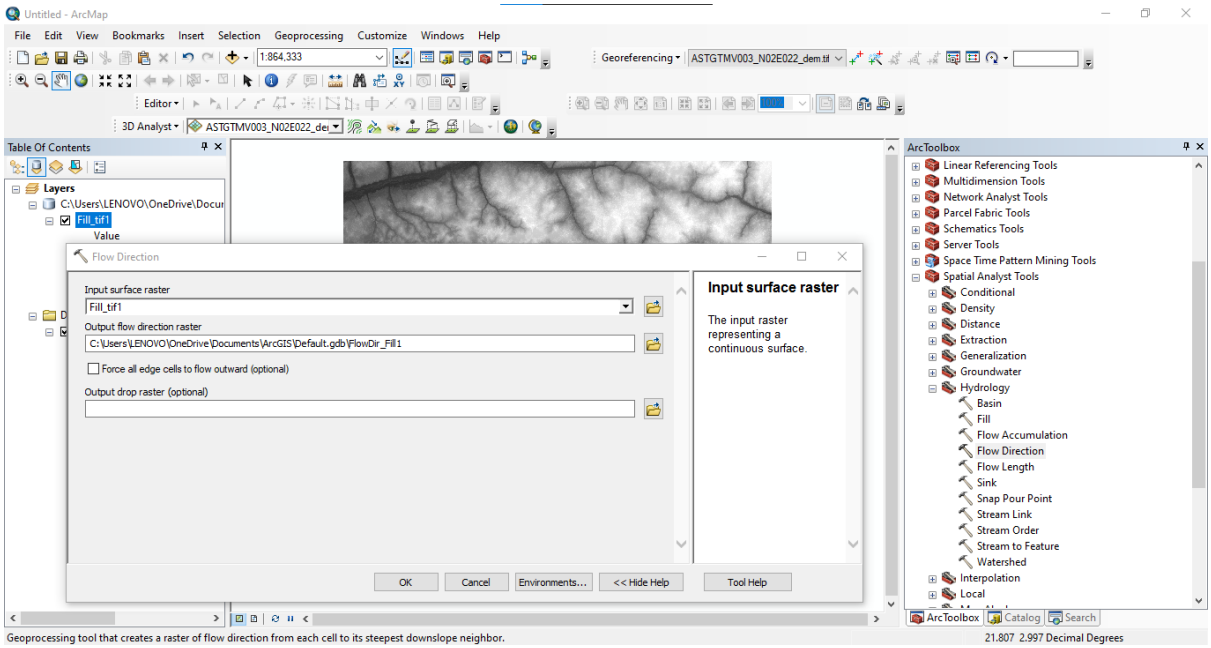
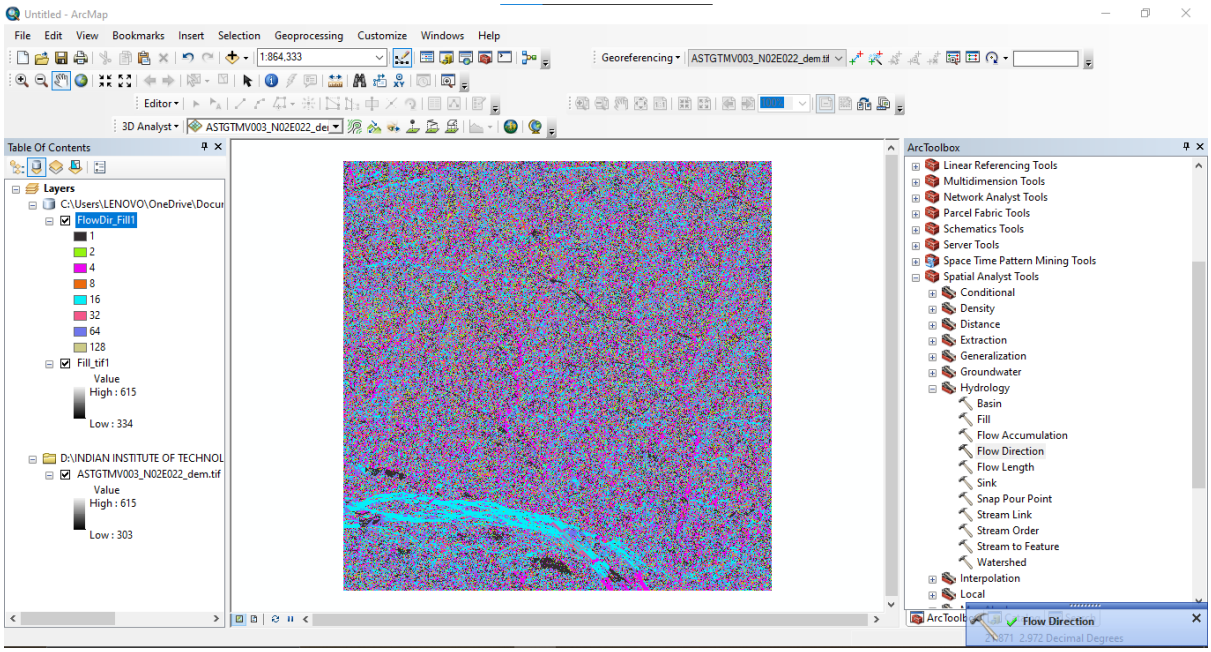
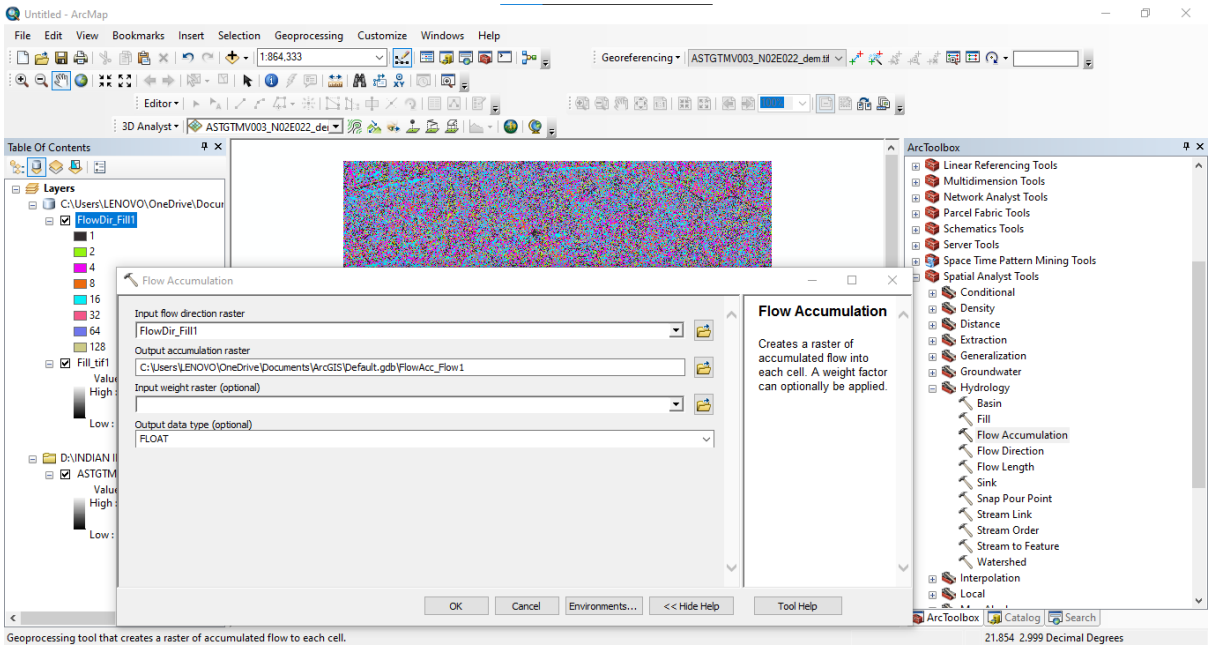
Stream Order from a Digital Elevation Model (DEM) using ArcGIS




Untitled - ArcMap
File Edit View Bookmarks Insert Selection Geoprocessing Customize Windows Help
Table Of Contents
Layers
Fill_tif1
Value
Flow Direction
Input surface raster
Fill_tif1
Output flow direction raster
C:\Users\LENOVO\OneDrive\Documents\ArcGIS\Default.gdb\FlowDir_Fill1
Force all edge cells to flow outward (optional)
Output drop raster (optional)
OK
Cancel
Environments...
<< Hide Help
Tool Help
Input surface raster
The input raster representing a continuous surface.
ArcToolbox
Linear Referencing Tools
Multidimension Tools
Network Analyst Tools
Parcel Fabric Tools
Schematics Tools
Server Tools
Space Time Pattern Mining Tools
Spatial Analyst Tools
Conditional
Density
Distance
Extraction
Generalization
Groundwater
Hydrology
Basin
Fill
Flow Accumulation
Flow Direction
Flow Length
Sink
Snap Pour Point
Stream Link
Stream Order
Stream to Feature
Watershed
Interpolation
Local
Geoprocessing tool that creates a raster of flow direction from each cell to its steepest downslope neighbor.
21.807 2.997 Decimal Degrees


Untitled - ArcMap
File Edit View Bookmarks Insert Selection Geoprocessing Customize Windows Help
Table Of Contents
Layers
FlowDir_Fill1
1
2
4
8
16
32
64
128
Fill_tif1
Value
High : 615
Low : 334
D:\INDIAN INSTITUTE OF TECHNOL
ASTGTMV003_N02E022_dem.tif
Value
High : 615
Low : 303
ArcToolbox
Flow Direction


Untitled - ArcMap
File Edit View Bookmarks Insert Selection Geoprocessing Customize Windows Help
Table Of Contents
Layers
FlowDir_Fill1
Fill_tif1
Flow Accumulation
Input flow direction raster
FlowDir_Fill1
Output accumulation raster
C:\Users\LENOVO\OneDrive\Documents\ArcGIS\Default.gdb\FlowAcc_Flow1
Input weight raster (optional)
Output data type (optional)
FLOAT
Flow Accumulation
Creates a raster of accumulated flow into each cell. A weight factor can optionally be applied.
OK
Cancel
Environments...
<< Hide Help
Tool Help
ArcToolbox
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Multidimension Tools
Network Analyst Tools
Parcel Fabric Tools
Schematics Tools
Server Tools
Space Time Pattern Mining Tools
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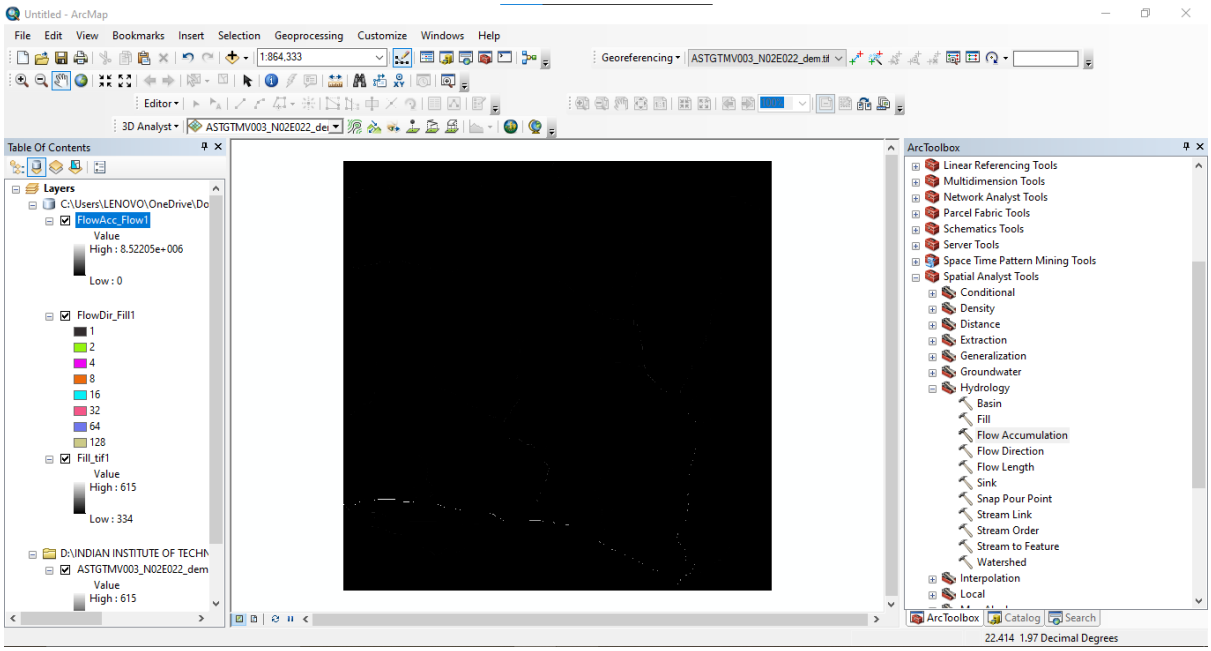
Hydrology
Basin
Fill
Flow Accumulation
Flow Direction
Flow Length
Sink
Snap Pour Point
Stream Link
Stream Order
Stream to Feature
Watershed
Interpolation
Local
Geoprocessing tool that creates a raster of accumulated flow to each cell.
21.854 2.999 Decimal Degrees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Low : 0
FlowDir_Fill1
Fill_tif1
Value
High : 615
Low : 334
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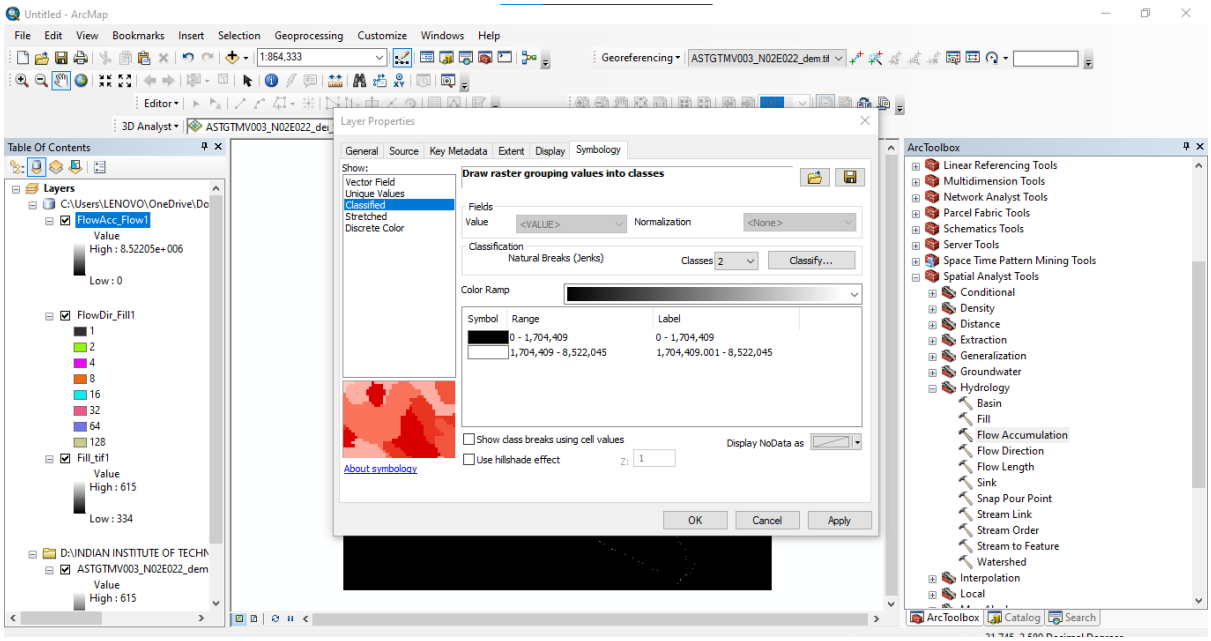
Flow Direction
Flow Length
Sink
Snap Pour Point
Stream Link
Stream Order
Stream to Feature
Watershed
Interpolation
Local
22.414 1.97 Decimal Degrees


Untitled - ArcMap
File Edit View Bookmarks Insert Selection Geoprocessing Customize Windows Help
Layer Properties
General Source Key Metadata Extent Display Symbology
Draw raster grouping values into classes
Vector Field
Unique Values
Classified
Stretched
Discrete Color
Classification
Natural Breaks (Jenks)
Classes 2
Classify...
Color Ramp
Symbol Range Label
0 - 1,704,409 0 - 1,704,409
1,704,409 - 8,522,045 1,704,409.001 - 8,522,045
Show class breaks using cell values
Use hillshade effect
Display NoData as
About symbology
OK Cancel Apply
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Basin
Fill
Flow Accumulation
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Flow Length
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Snap Pour Point
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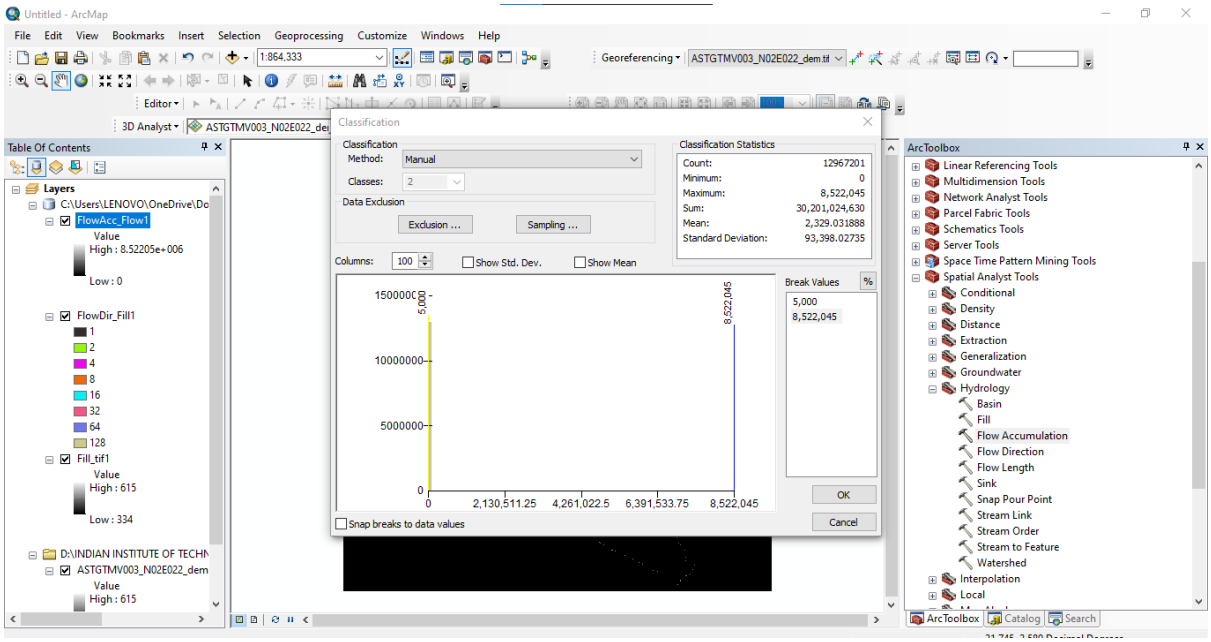
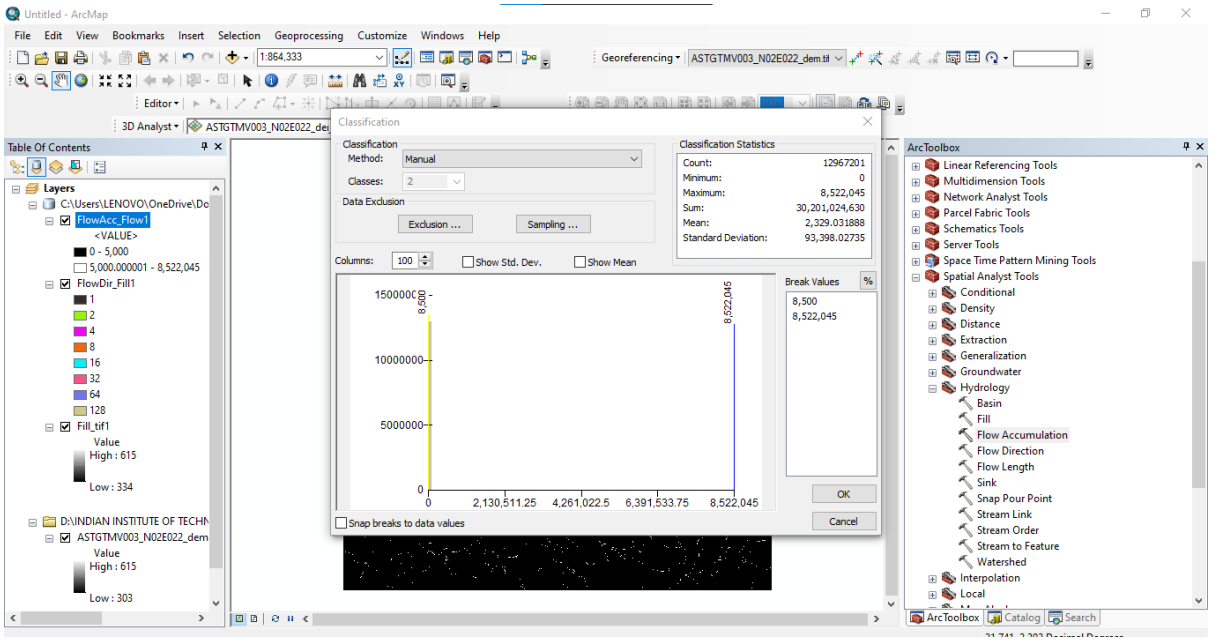
Stream Order
Stream to Feature
Watershed
Interpolation
Local


Untitled - ArcMap
File Edit View Bookmarks Insert Selection Geoprocessing Customize Windows Help
Classification
Method: Manual
Classes: 2
Data Exclusion
Exclusion ...
Sampling ...
Classification Statistics
Count: 12967201
Minimum: 0
Maximum: 8,522,045
Sum: 30,201,024,630
Mean: 2,329.031888
Standard Deviation: 93,398.02735
Columns: 100
Show Std. Dev.
Show Mean
Break Values
5,000
8,522,045
15000000
10000000
5000000
0
2,130,511.25
4,261,022.5
6,391,533.75
8,522,045
Snap breaks to data values
OK
Cancel
Table Of Contents
ArcToolbox


Untitled - ArcMap
File Edit View Bookmarks Insert Selection Geoprocessing Customize Windows Help
Classification
Method: Manual
Classes: 2
Data Exclusion
Exclusion ...
Sampling ...
Classification Statistics
Count: 1296720
Minimum: 0
Maximum: 8,522,045
Sum: 30,201,024,630
Mean: 2,329.031888
Standard Deviation: 93,398.02735
Columns: 100
Show Std. Dev.
Show Mean
Break Values
8,500
8,522,045
OK
Cancel
Snap breaks to data values
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5,000.000001 - 8,522,045
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Basin
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Flow Direction
Flow Length
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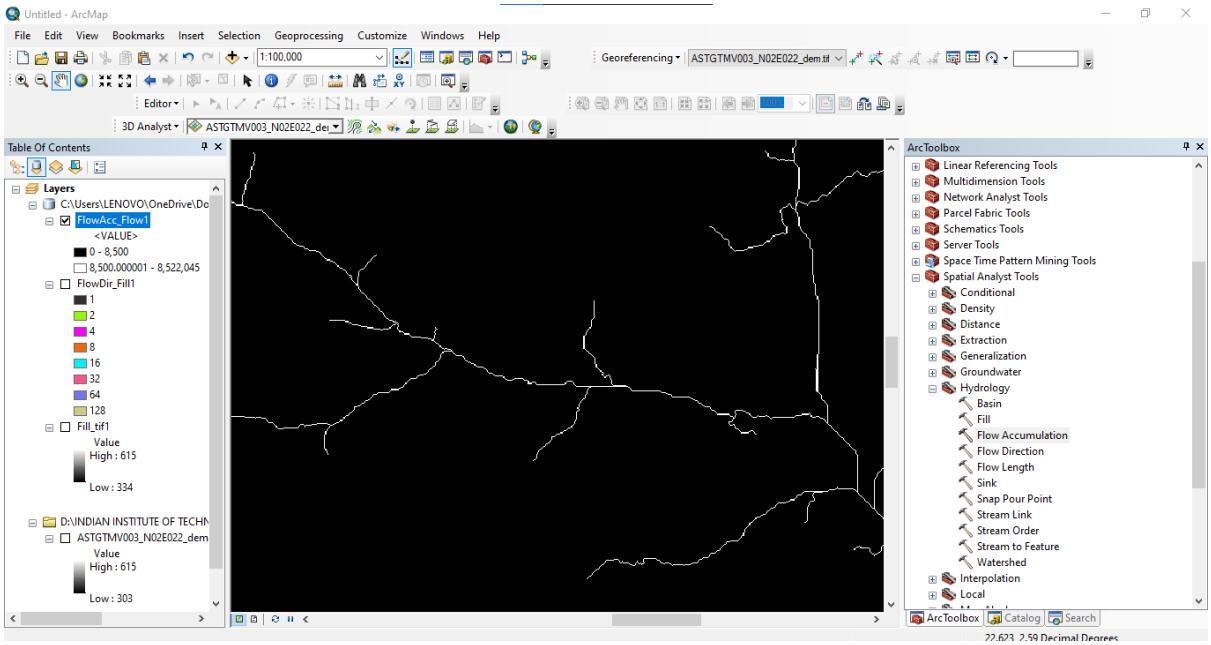
Snap Pour Point
Stream Link
Stream Order
Stream to Feature
Watershed
Interpolation
Local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8,500.000001 - 8,522,045
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Groundwater
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Basin
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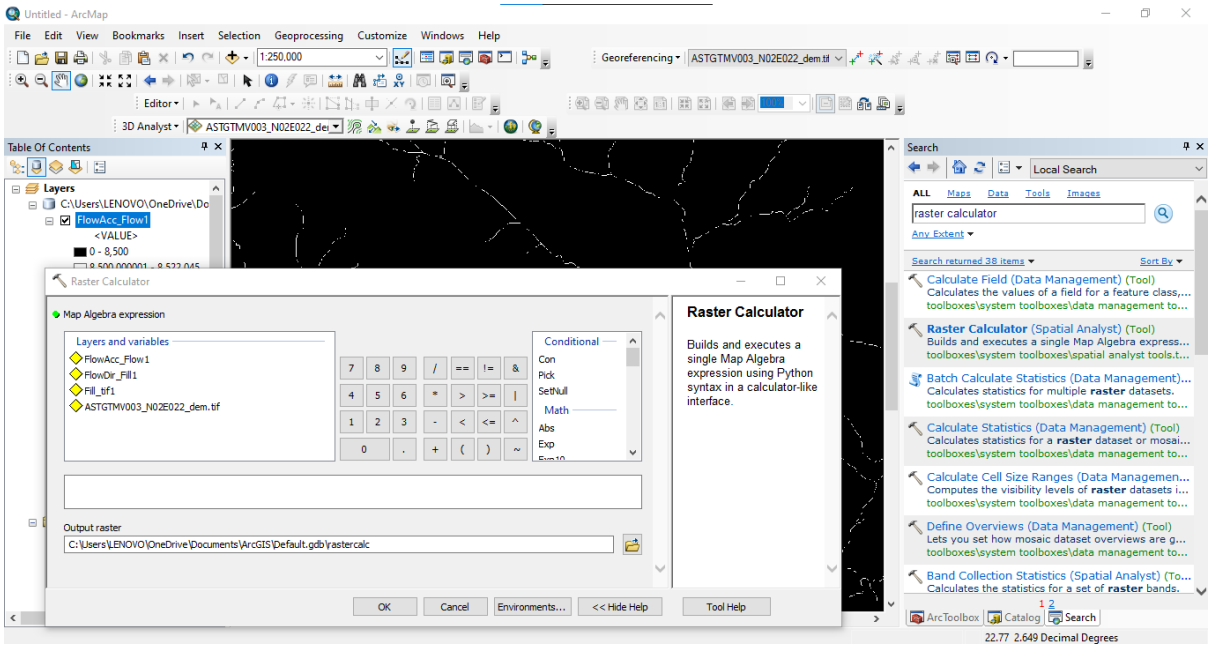
Flow Accumulation
Flow Direction
Flow Length
Sink
Snap Pour Point
Stream Link
Stream Order
Stream to Feature
Watershed
Interpolation
Local


Untitled - ArcMap
File Edit View Bookmarks Insert Selection Geoprocessing Customize Windows Help
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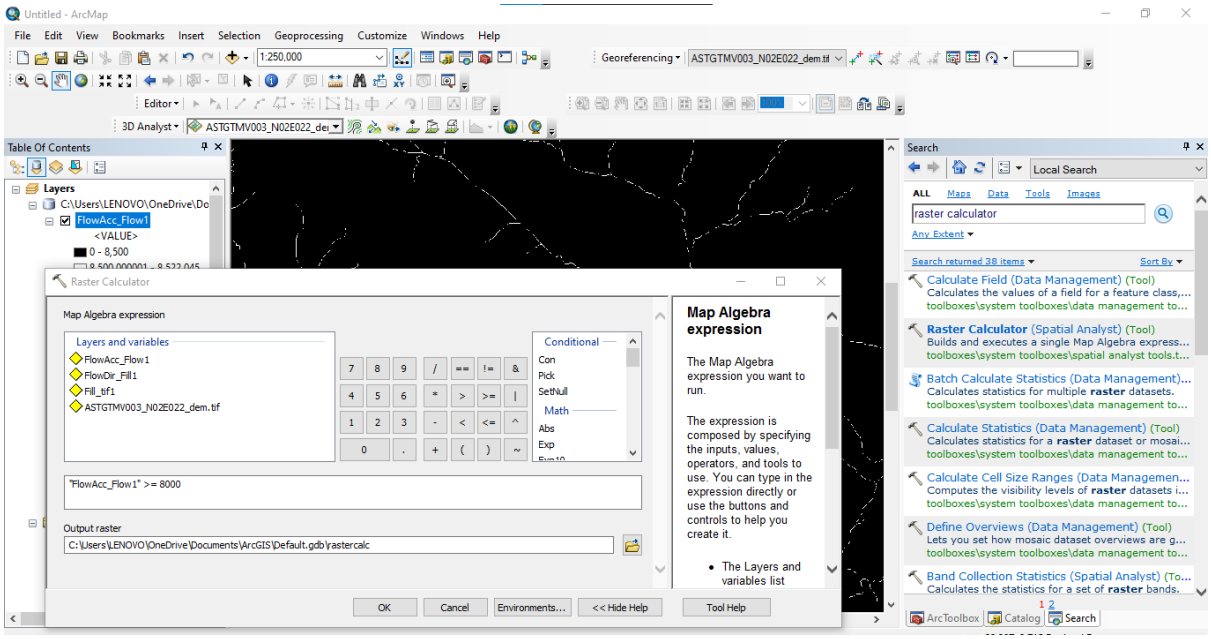
Layers
FlowAcc_Flow1
Raster Calculator
Map Algebra expression
Layers and variables
FlowAcc_Flow1
FlowDir_Fill1
Fill_tif1
ASTGTMV003_N02E022_dem.tif
Conditional
Math
Raster Calculator
Builds and executes a single Map Algebra expression using Python syntax in a calculator-like interface.
Output raster
C:\Users\LENOVO\OneDrive\Documents\ArcGIS\Default.gdb\rastercalc
OK
Cancel
Environments...
<< Hide Help
Tool Help
Search
Local Search
raster calculator
Calculate Field (Data Management) (Tool)
Raster Calculator (Spatial Analyst) (Tool)
Batch Calculate Statistics (Data Management)...
Calculate Statistics (Data Management) (Tool)
Calculate Cell Size Ranges (Data Managemen...
Define Overviews (Data Management) (Tool)
Band Collection Statistics (Spatial Analyst) (To...
ArcToolbox
Catalog
Search
22.77 2.649 Decimal Degrees


Untitled - ArcMap
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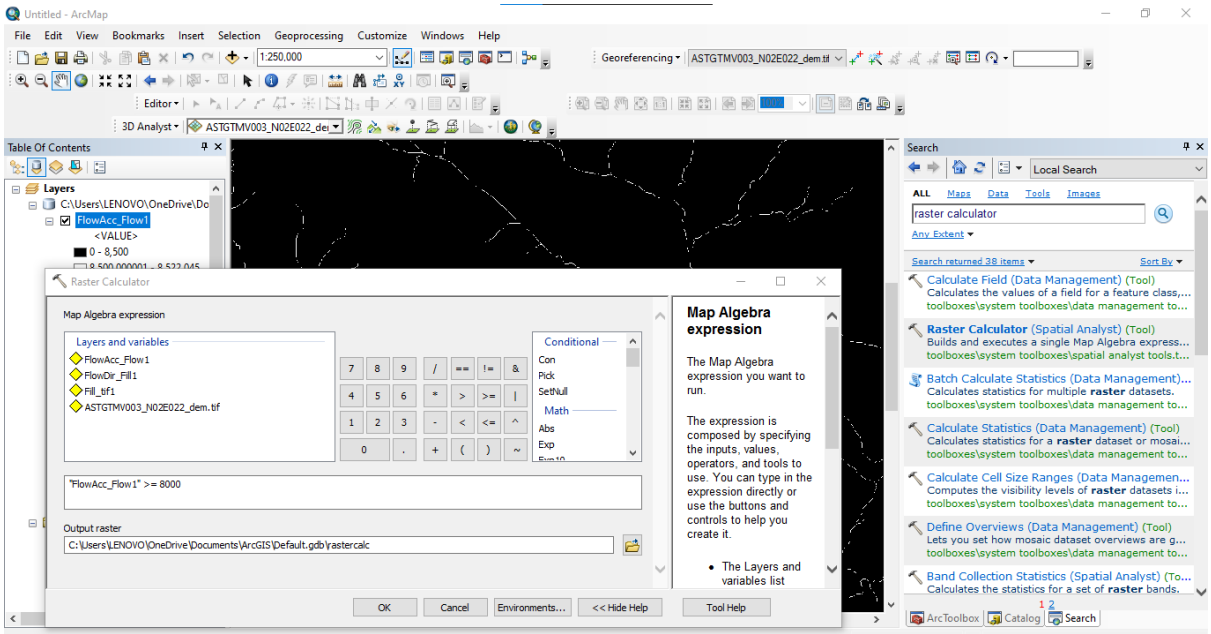
Raster Calculator
Map Algebra expression
Layers and variables
FlowAcc_Flow1
FlowDir_Fill1
Fill_tif1
ASTGTMV003_N02E022_dem.tif
Conditional
Math
"FlowAcc_Flow1" >= 8000
Map Algebra expression
The Map Algebra expression you want to run.
The expression is composed by specifying the inputs, values, operators, and tools to use. You can type in the expression directly or use the buttons and controls to help you create it.
The Layers and variables list
Output raster
C:\Users\LENOVO\OneDrive\Documents\ArcGIS\Default.gdb\rastercalc
OK
Cancel
Environments...
<< Hide Help
Tool Help
Search
Local Search
raster calculator
Calculate Field (Data Management) (Tool)
Raster Calculator (Spatial Analyst) (Tool)
Batch Calculate Statistics (Data Management)...
Calculate Statistics (Data Management) (Tool)
Calculate Cell Size Ranges (Data Managemen...
Define Overviews (Data Management) (Tool)
Band Collection Statistics (Spatial Analyst) (To...
ArcToolbox
Catalog
Search


Untitled - ArcMap
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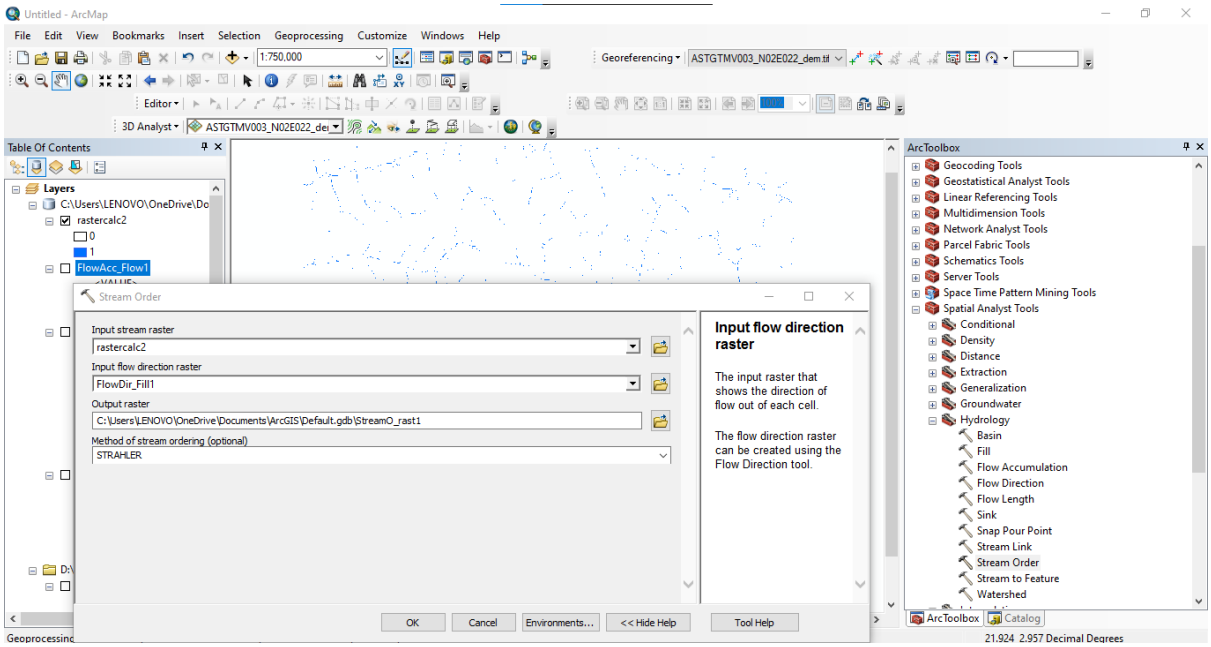
Layers
FlowAcc_Flow1
Raster Calculator
Map Algebra expression
Layers and variables
FlowAcc_Flow1
FlowDir_Fill1
Fill_tif1
ASTGTMV003_N02E022_dem.tif
Conditional
Con
Pick
SetNull
Math
Abs
Exp
"FlowAcc_Flow1" >= 8000
Output raster
C:\Users\LENOVO\OneDrive\Documents\ArcGIS\Default.gdb\rastercalc
OK
Cancel
Environments...
<< Hide Help
Tool Help
Map Algebra expression
The Map Algebra expression you want to run.
The expression is composed by specifying the inputs, values, operators, and tools to use. You can type in the expression directly or use the buttons and controls to help you create it.
The Layers and variables list
Search
Local Search
raster calculator
Any Extent
Calculate Field (Data Management) (Tool)
Raster Calculator (Spatial Analyst) (Tool)
Batch Calculate Statistics (Data Management)...
Calculate Statistics (Data Management) (Tool)
Calculate Cell Size Ranges (Data Managemen...
Define Overviews (Data Management) (Tool)
Band Collection Statistics (Spatial Analyst) (To...
ArcToolbox
Catalog
Search


Untitled - ArcMap
File Edit View Bookmarks Insert Selection Geoprocessing Customize Windows Help
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Layers
rastercalc2
FlowAcc_Flow1
Stream Order
Input stream raster
rastercalc2
Input flow direction raster
FlowDir_Fill1
Output raster
C:\Users\LENOVO\OneDrive\Documents\ArcGIS\Default.gdb\StreamO_rast1
Method of stream ordering (optional)
STRAHLER
OK
Cancel
Environments...
<< Hide Help
Tool Help
Input flow direction raster
The input raster that shows the direction of flow out of each cell.
The flow direction raster can be created using the Flow Direction tool.
ArcToolbox
Geocoding Tools
Geostatistical Analyst Tools
Linear Referencing Tools
Multidimension Tools
Network Analyst Tools
Parcel Fabric Tools
Schematics Tools
Server Tools
Space Time Pattern Mining Tools
Spatial Analyst Tools
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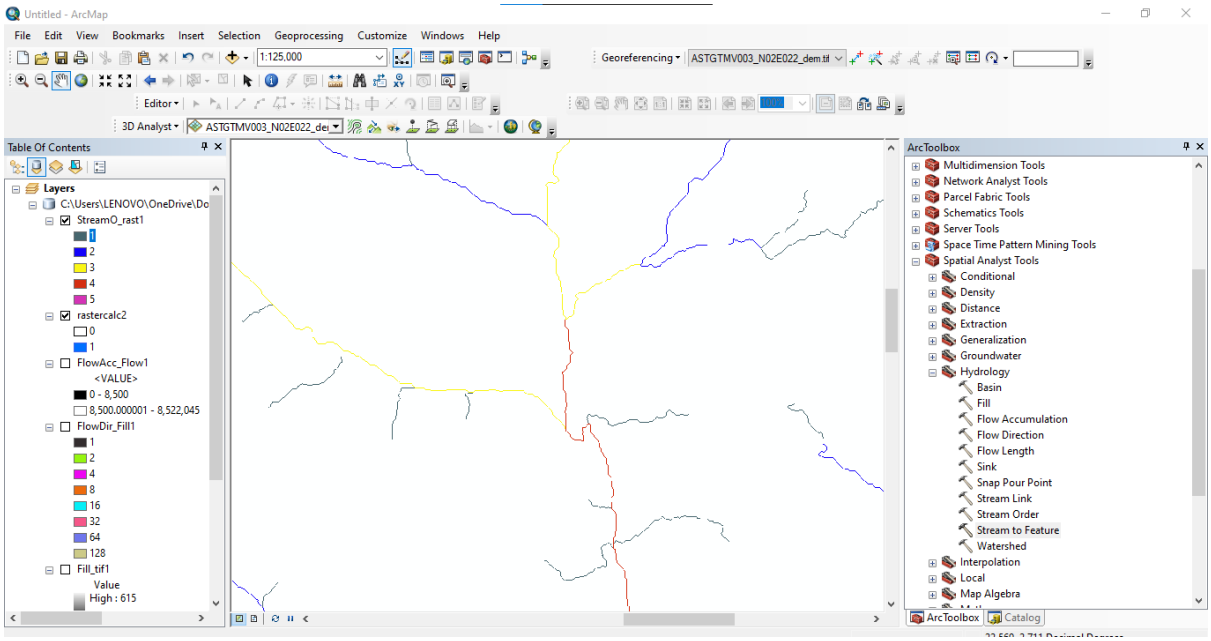
Extraction
Generalization
Groundwater
Hydrology
Basin
Fill
Flow Accumulation
Flow Direction
Flow Length
Sink
Snap Pour Point
Stream Link
Stream Order
Stream to Feature
Watershed
Catalog
21.924 2.957 Decimal Degrees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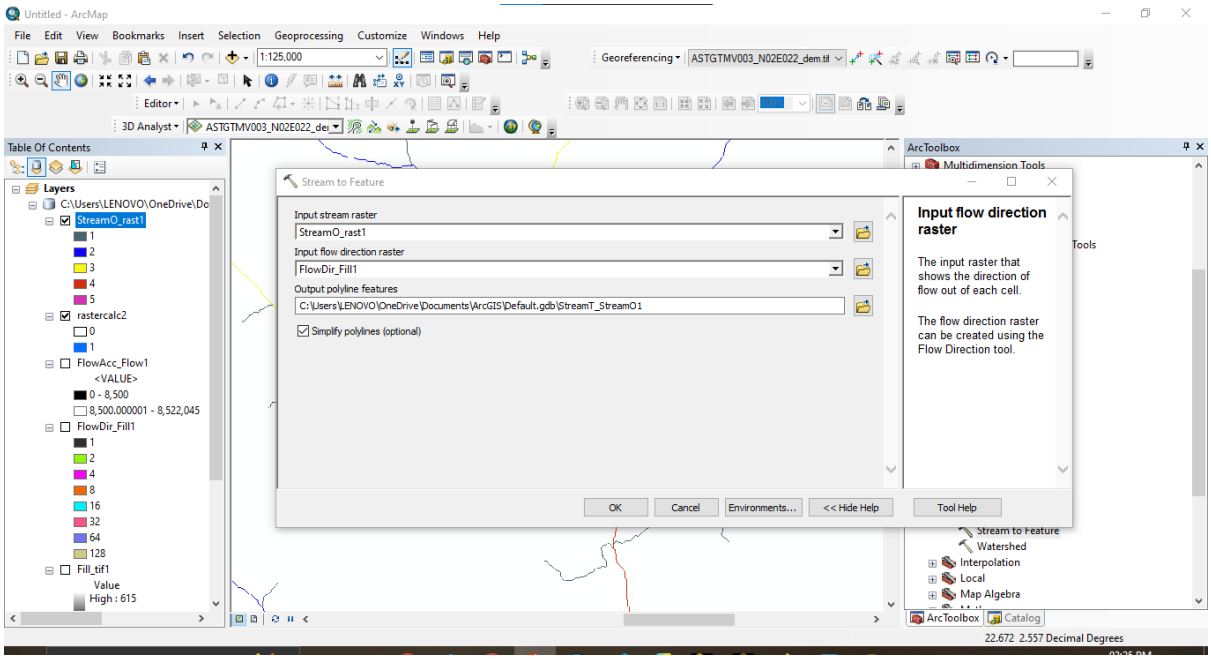
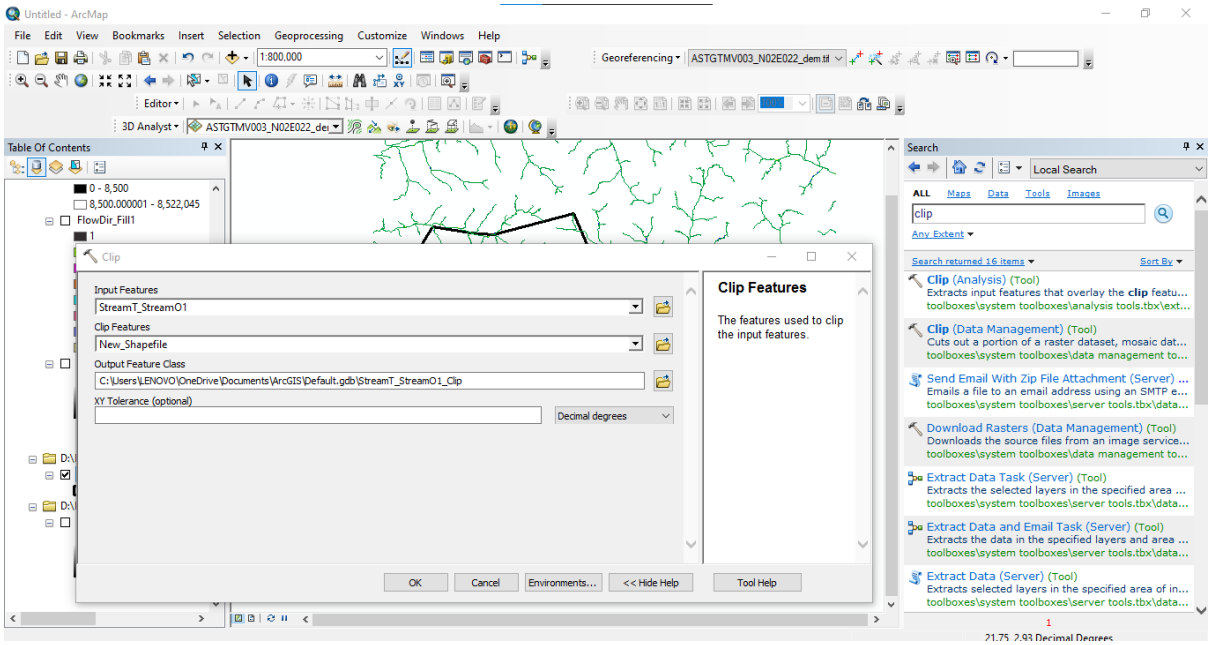
Flow Accumulation
Flow Direction
Flow Length
Sink
Snap Pour Point
Stream Link
Stream Order
Stream to Feature
Watershed
Interpolation
Local
Map Algebra


Untitled - ArcMap
Stream to Feature
Input stream raster
StreamO_rast1
Input flow direction raster
FlowDir_Fill1
Output polyline features
C:\Users\LENOVO\OneDrive\Documents\ArcGIS\Default.gdb\StreamT_StreamO1
Simplify polylines (optional)
OK
Cancel
Environments...
<< Hide Help
Tool Help
Input flow direction raster
The input raster that shows the direction of flow out of each cell.
The flow direction raster can be created using the Flow Direction tool.
22.672 2.557 Decimal Degrees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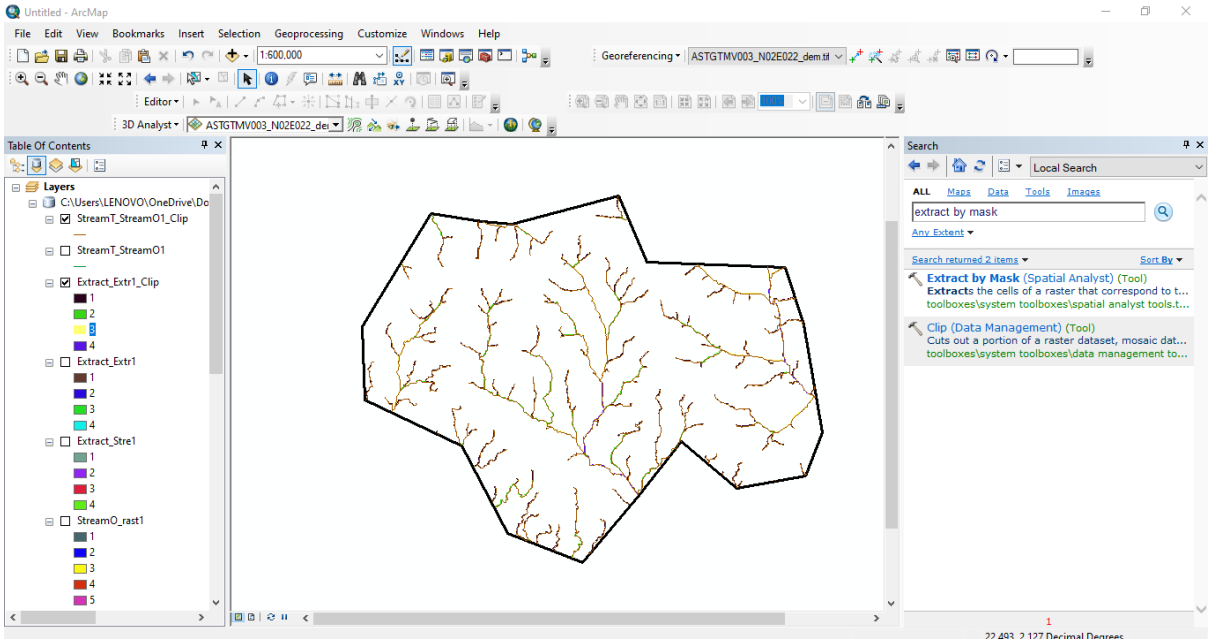
Search
Local Search
clip
Clip
Input Features
StreamT_StreamO1
Clip Features
New_Shapefile
Output Feature Class
C:\Users\LENOVO\OneDrive\Documents\ArcGIS\Default.gdb\StreamT_StreamO1_Clip
XY Tolerance (optional)
Decimal degrees
Clip Features
The features used to clip the input features.
OK
Cancel
Environments...
<< Hide Help
Tool Help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Extract_Extr1
Extract_Stre1
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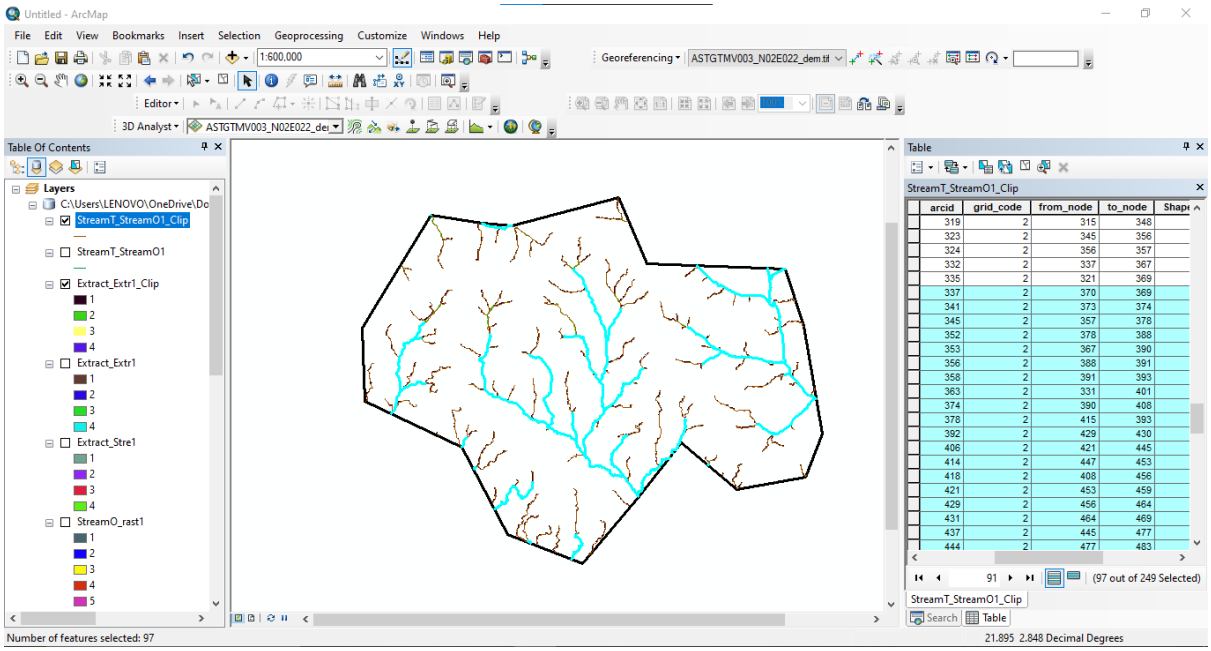
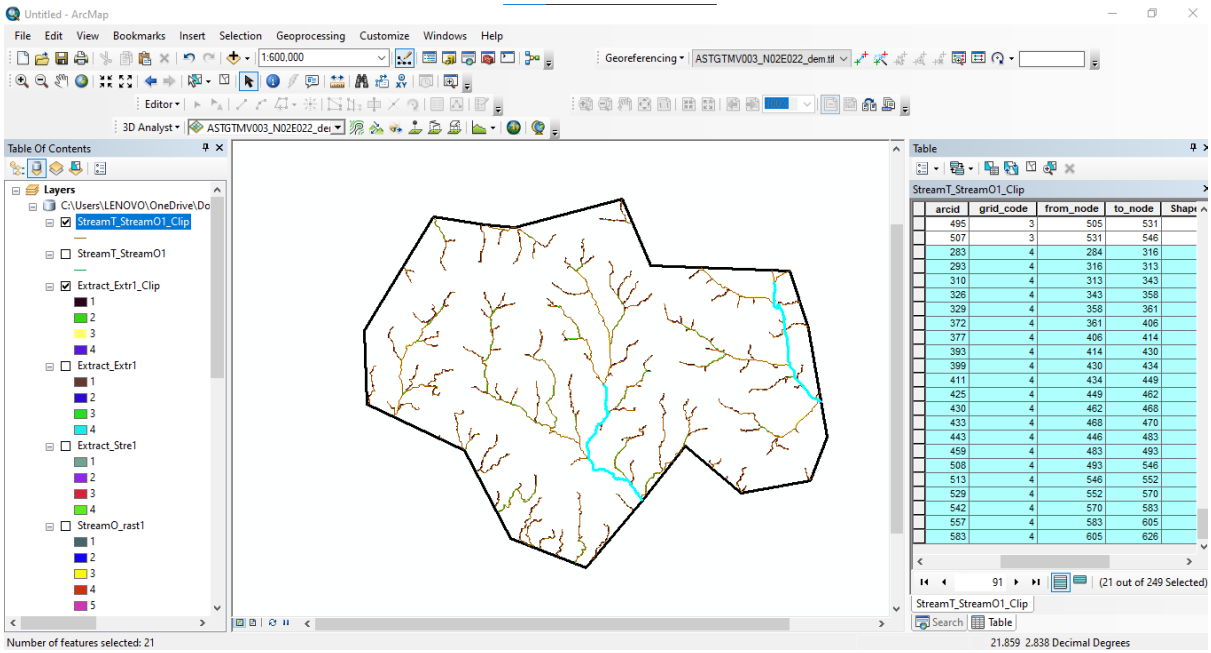
extract by mask
Extract by Mask (Spatial Analyst) (Tool)
Clip (Data Management) (Tool)





Major River Line