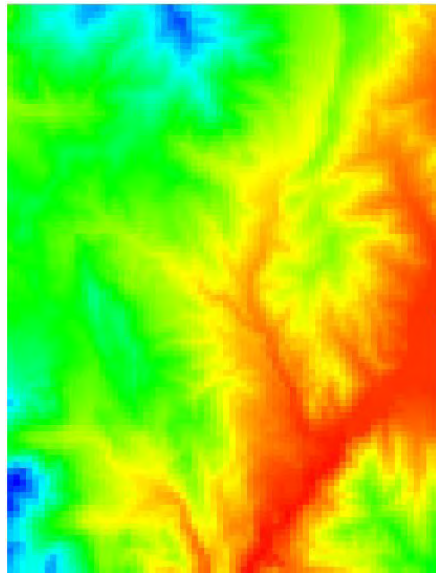


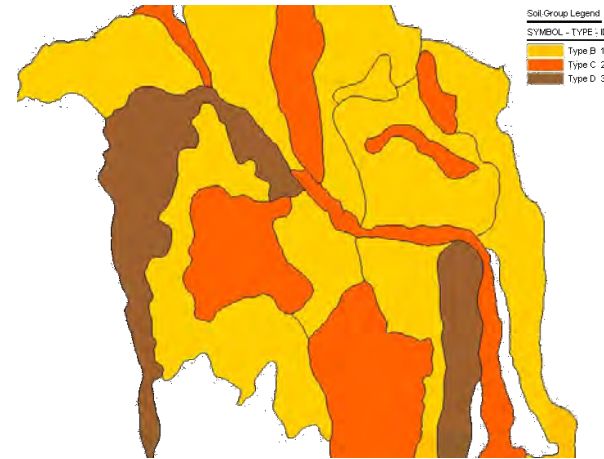
Developing a Basic GSSHA Model



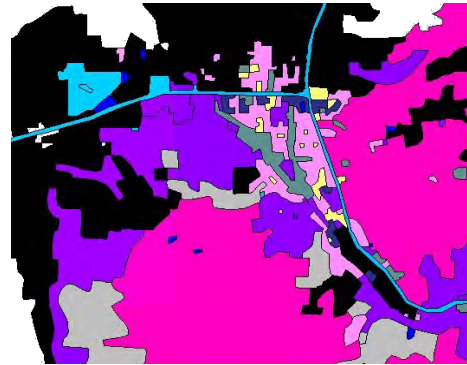
- Obtain Your Data
 - DEM, Land Use, Soils, Mapping Table, Precipitation
- Delineate the watershed
- Generate a GSSHA grid
- Job Control
 - Time step
 - Determine processes to simulate
 - Output Control
- Generate Index Map and Mapping Table for roughness
 - Uniform to begin with
- Define roughness in Mapping Table parameters
- Define rainfall
- Save and run
- Visualize results to determine and fix surface runoff problems



DEM

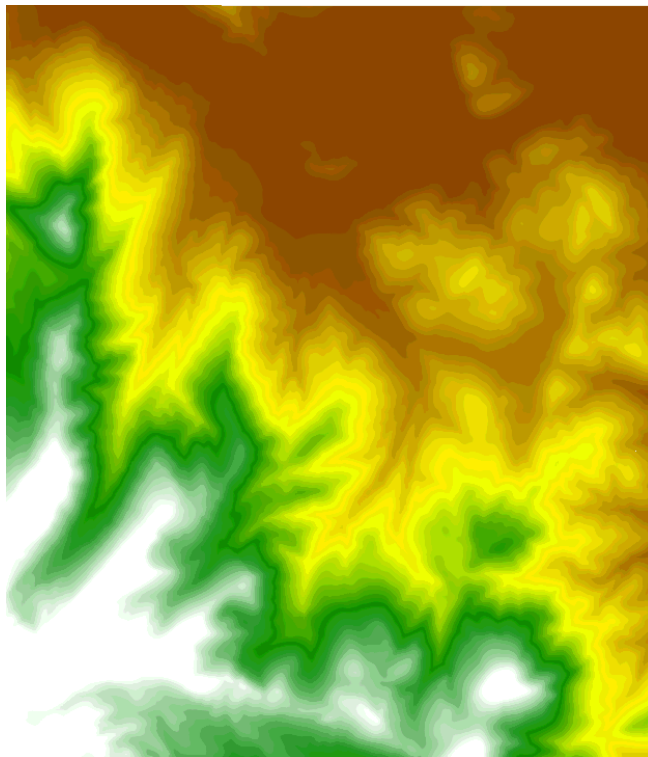


Soils



Land Use

Delineate the Watershed



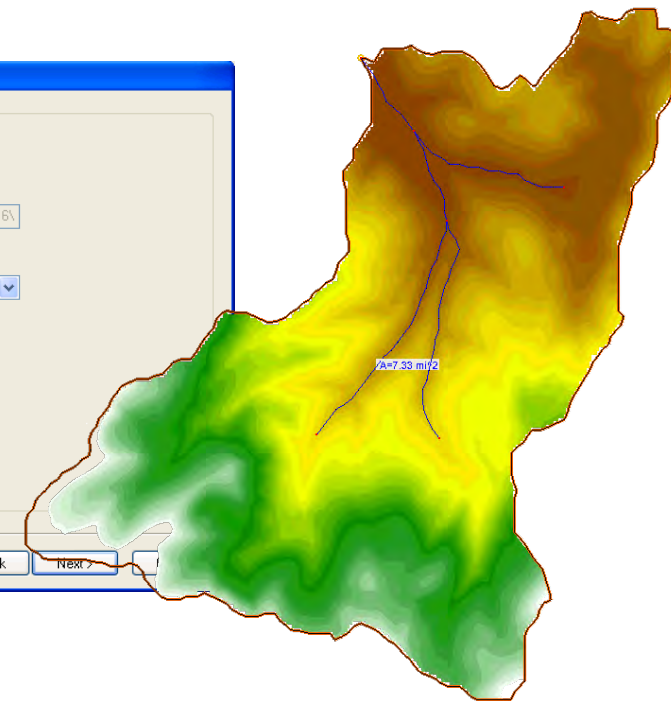
Compute Flow Directions and Accumulations

Project Filename
Define Project Bounds
Watershed Data
Download Data (Web Service)
Read Data (Catalog)
Compute Flow Directions and Accumulations
Choose Outlet Locations
Delineate Watershed
Select Model
Create 2D Grid
Job Control
Define Land Use and Soil Data
Hydrologic Computations
Define Precipitation
Clean Up Model

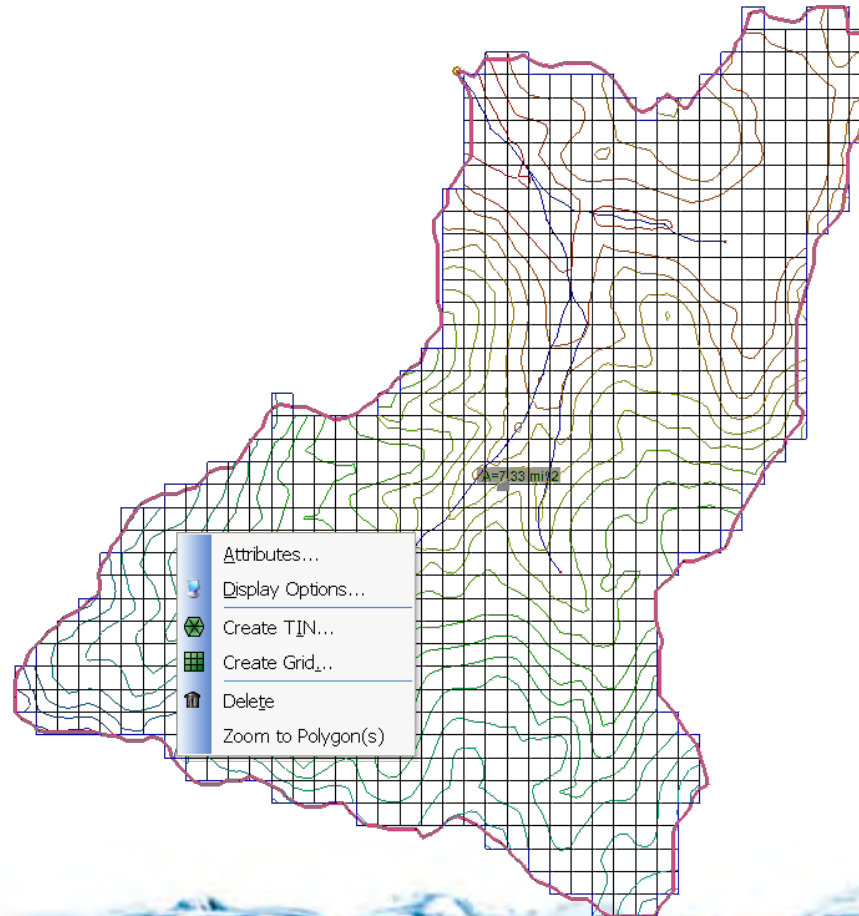
Compute TOPAZ flow data and...

Write TOPAZ files to a temp directory.
 Write TOPAZ files to a specific directory.

Compute sub-basin areas in: Compute distances in:



- Use the watershed basin polygon to create the grid



GSSHA Job Control Parameters

Initialize GSSHA Delete GSSHA Data

Computation parameters

Total time (min): 1500
Time step (sec): 10

Outlet information

Column: 1
Row: 64
Slope: 0.00100

Infiltration

No infiltration
 Green + Ampt
 Green + Ampt with soil moisture redistribution
 Richard's infiltration

Evapotranspiration

No evaporation
 Deardorff method
 Penman method
 Seasonal resist.

Channel routing computation scheme

No routing
 Diffusive wave
 MESH

Overland flow

Computation method: Explicit

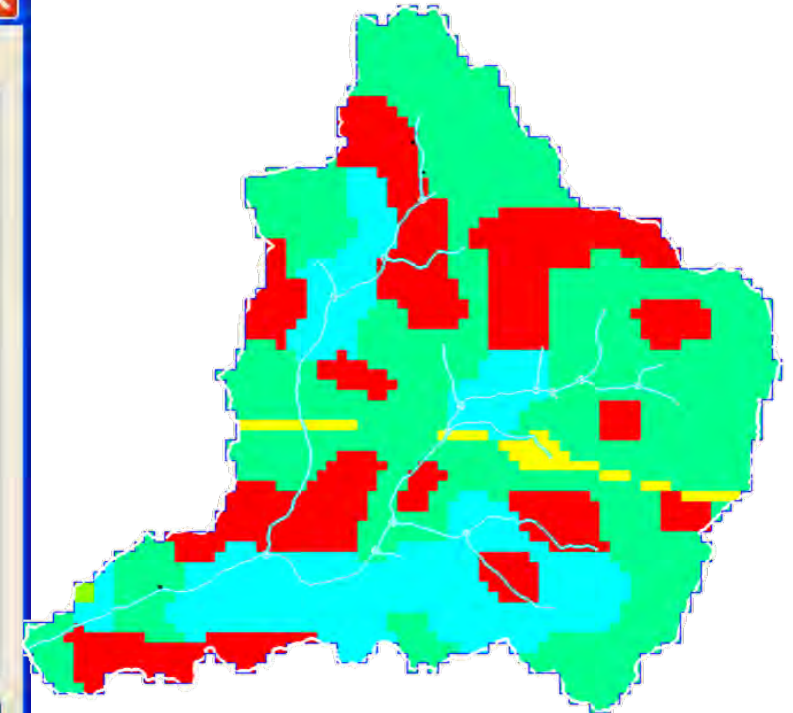
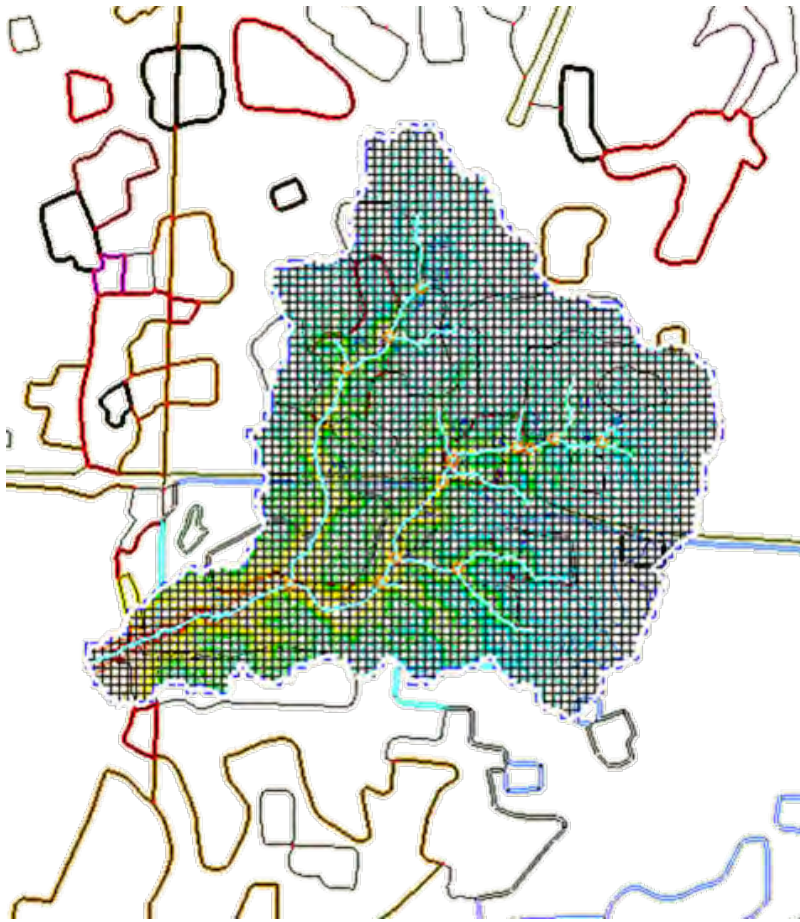
Interception
 Initial depth
 Retention depth
 Area reduction depth

Channel routing options:

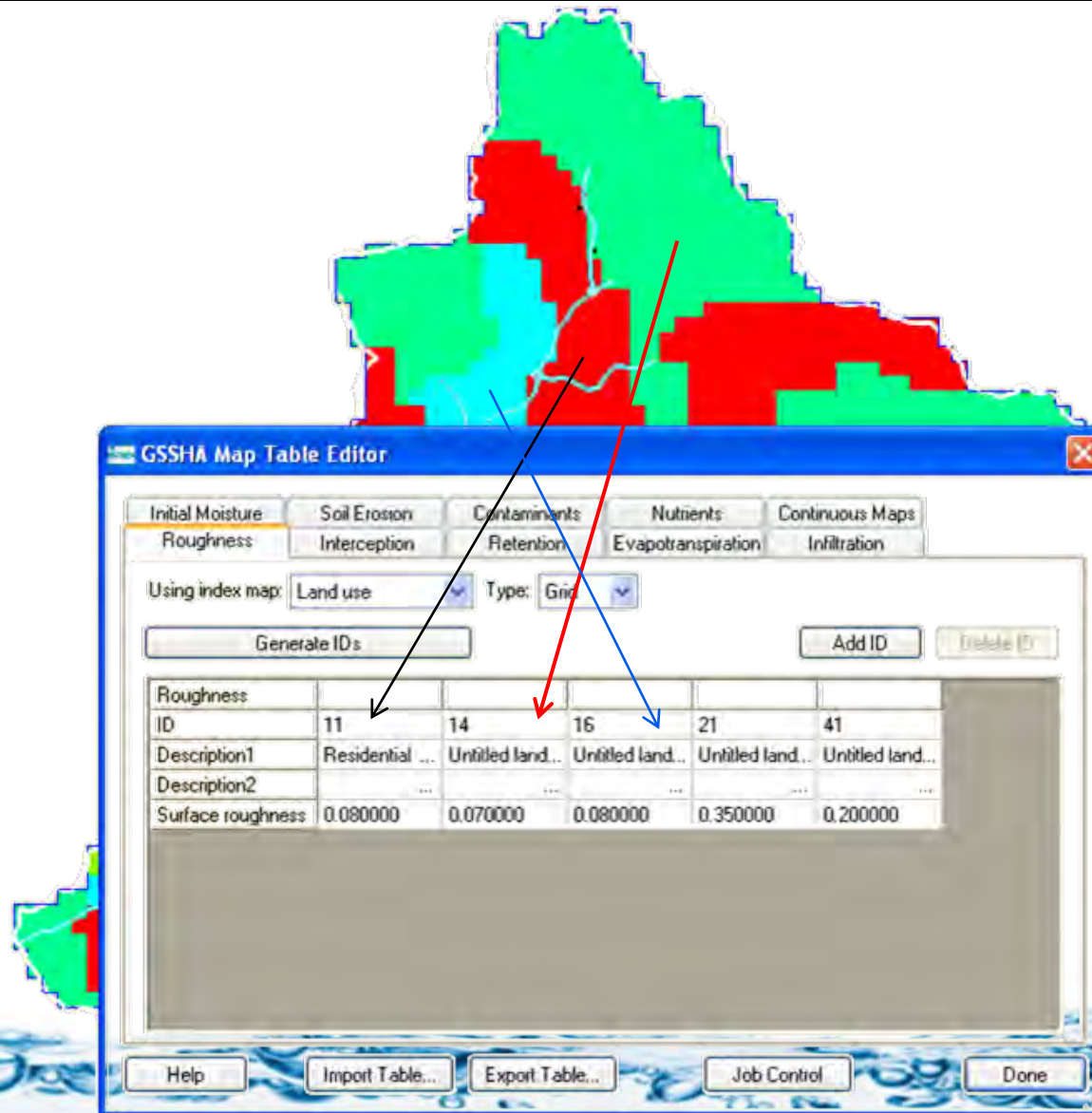
<input type="checkbox"/> Groundwater	Edit parameter...
<input type="checkbox"/> Soil erosion	Edit parameter...
<input type="checkbox"/> Long term simulation	Edit parameter...
<input type="checkbox"/> Contaminant transport	Edit parameter...
<input type="checkbox"/> Nutrients	Edit parameter...
<input type="checkbox"/> Storm/tile drain	Edit parameter...
<input type="checkbox"/> Stochastic	Edit parameter...
<input type="checkbox"/> Link CE-QUAL-W2 ...	Edit parameter...
<input type="checkbox"/> Manage files	Edit parameter...

Help Output Control... OK Cancel

Create an Index Map for Roughness



Define Roughness in Mapping Table



GSSHA Map Table Editor

Initial Moisture Soil Erosion Contaminants Nutrients Continuous Maps
Roughness Interception Retention Evapotranspiration Infiltration

Using index map: Land use Type: Grid

Generate IDs Add ID Enable (E)

Roughness					
ID	11	14	16	21	41
Description1	Residential ...	Untilled land...	Untilled land..	Untilled land..	Untilled land...
Description2
Surface roughness	0.080000	0.070000	0.080000	0.350000	0.200000

Help Import Table... Export Table... Job Control Done

GSSHA Precipitation [X]

Rainfall event(s)

Uniform [v] Import Gage File...

- Uniform
- Gage
- Hyetograph
- Nexrad Radar

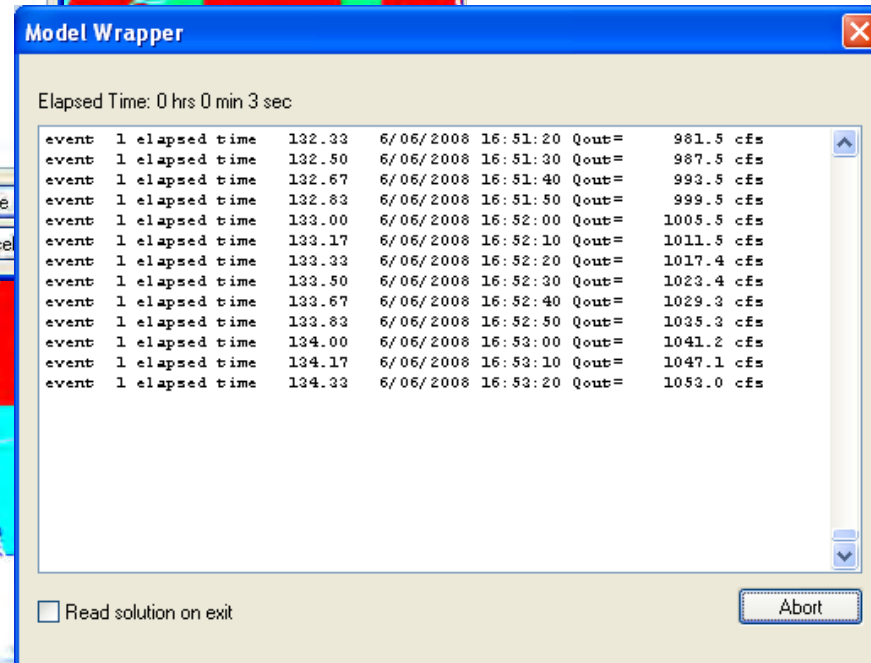
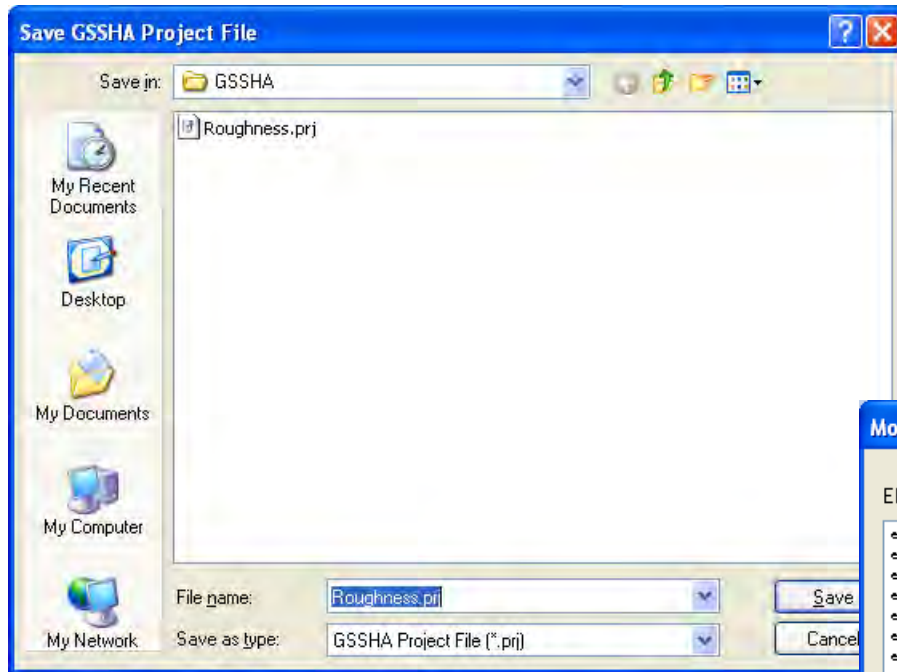
Start date/time: 6/6/2008 2:39:00 PM [v]

Multi-gage interpolation method

Inverse distance weighted (IDW)

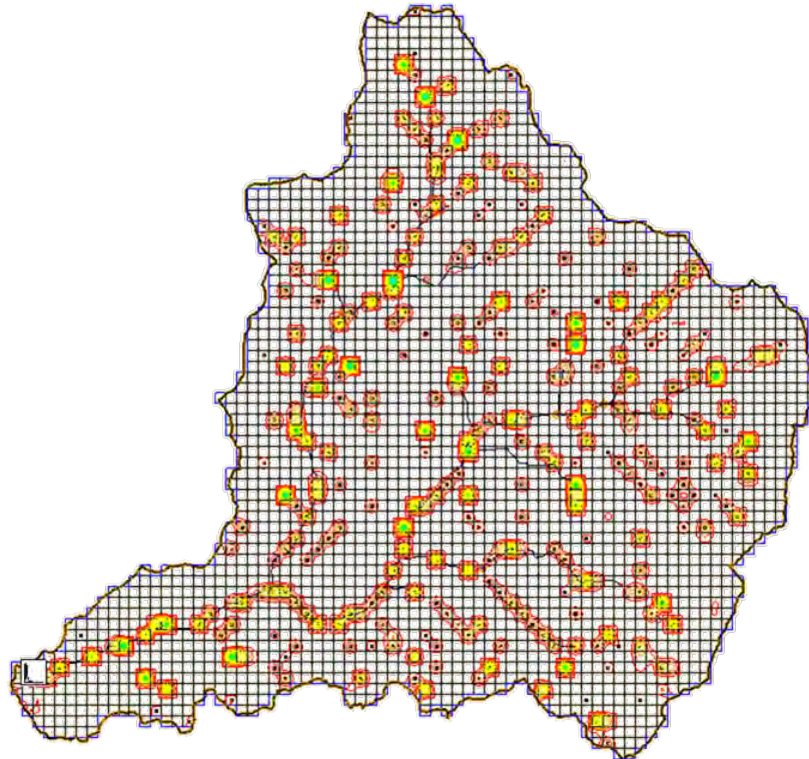
Thiessen polygons

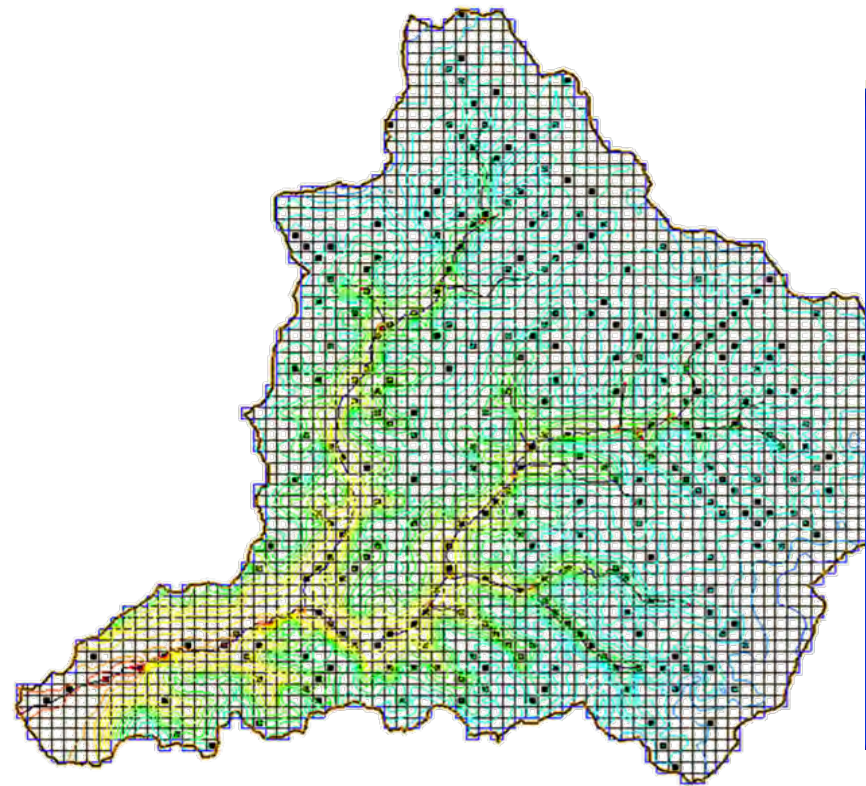
Help OK Cancel





Visualize Results to Determine Surface Runoff Problems

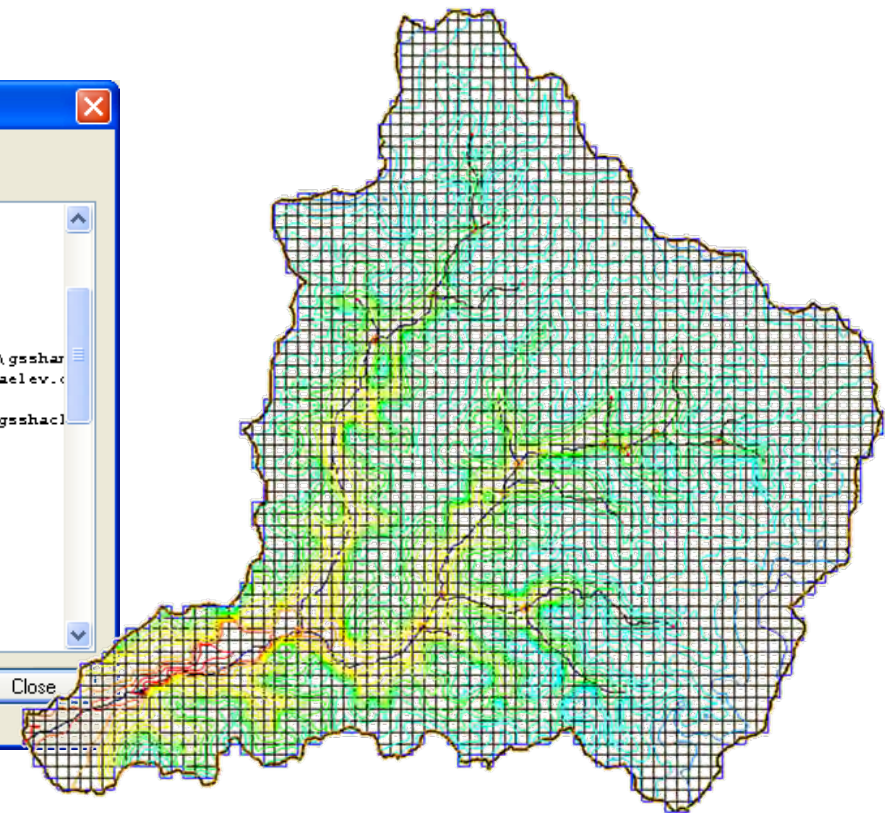




```
Model Wrapper

For more information about this program contact
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3909 Halls Ferry Rd.
Vicksburg, MS, 39180
Copyright 2006 USACE
Reading watershed mask file: C:\DOCUME~1\mpaudel\LOCALS~1\Temp\WMS_2700\gssharm
Reading elevation file: C:\DOCUME~1\mpaudel\LOCALS~1\Temp\WMS_2700\gsshaclev.c
Not using depression mask or unable to open. Will continue.
Writing output to the file: C:\DOCUME~1\mpaudel\LOCALS~1\Temp\WMS_2700\gsshac1
The outlet is at... (64,1)
# of active cells: 2764
# of digital dams at start (not masked): 280
# of masked digital dams (to be skipped): 0
pass: 1, 53 dams left
pass: 2, 42 dams left
pass: 3, 41 dams left
pass: 4, 41 dams left
# of digital dams at end of initial passes: 41
Starting fix using patch cut...
Pass: 5, # of dams: 41

 Read solution on exit
```



Fix Surface Runoff Problems

