

Create Flood Map on Delta Mapper (DM.)



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Topics

1. Data Needs & Preparations
2. How to use DeltaMapper ??
3. Result Analysis

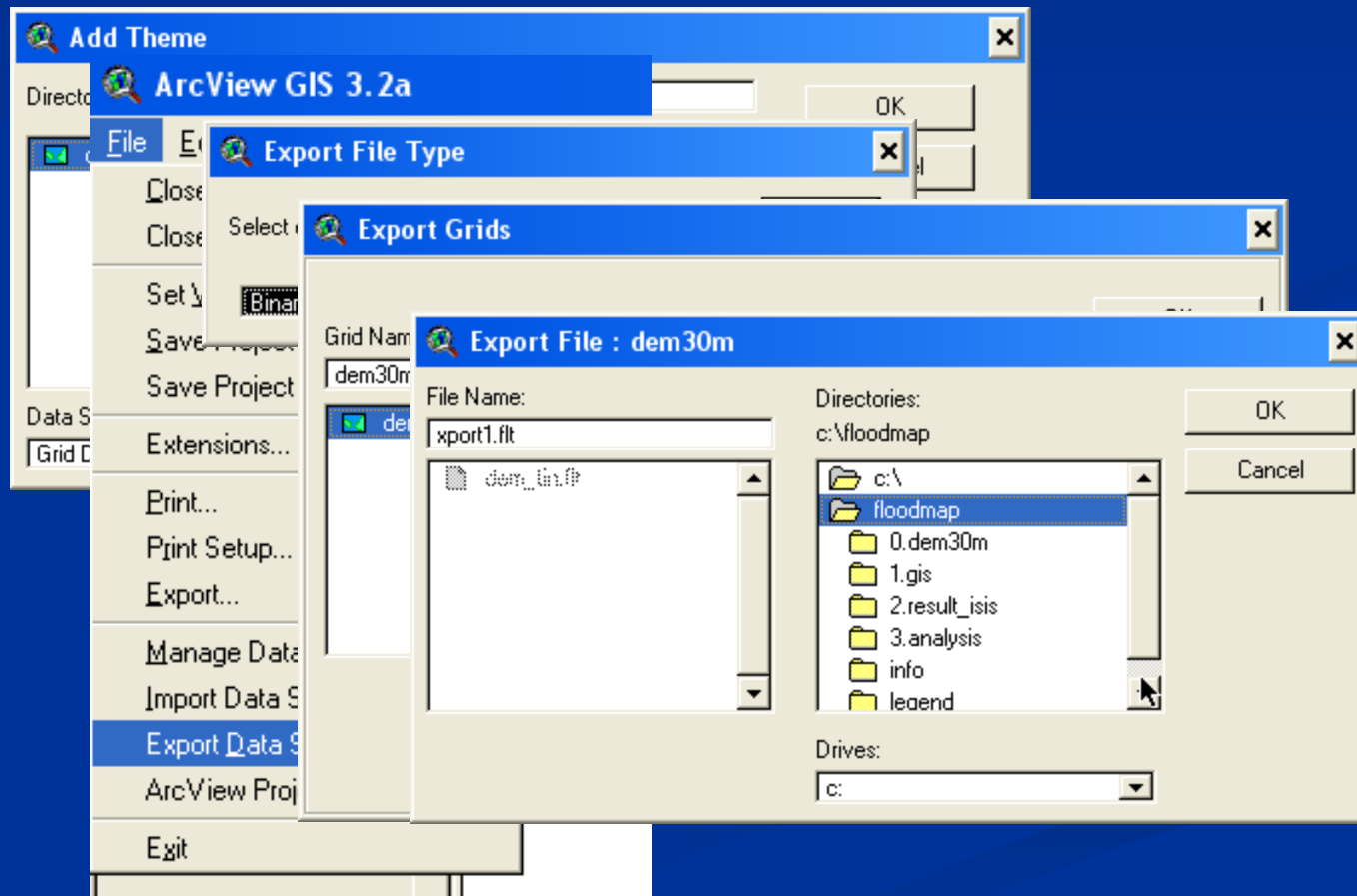
Data Needs & Preparations

■ Three important things

1. Grid file which support by delta mapper (***.flt**)
2. Result from isis model with the formatted space delimited (***.csv**)
3. Nodes Coordination (***.txt**) for create Tin schematization of isis model (***.htn**)

How to prepare data for DM (1/3)

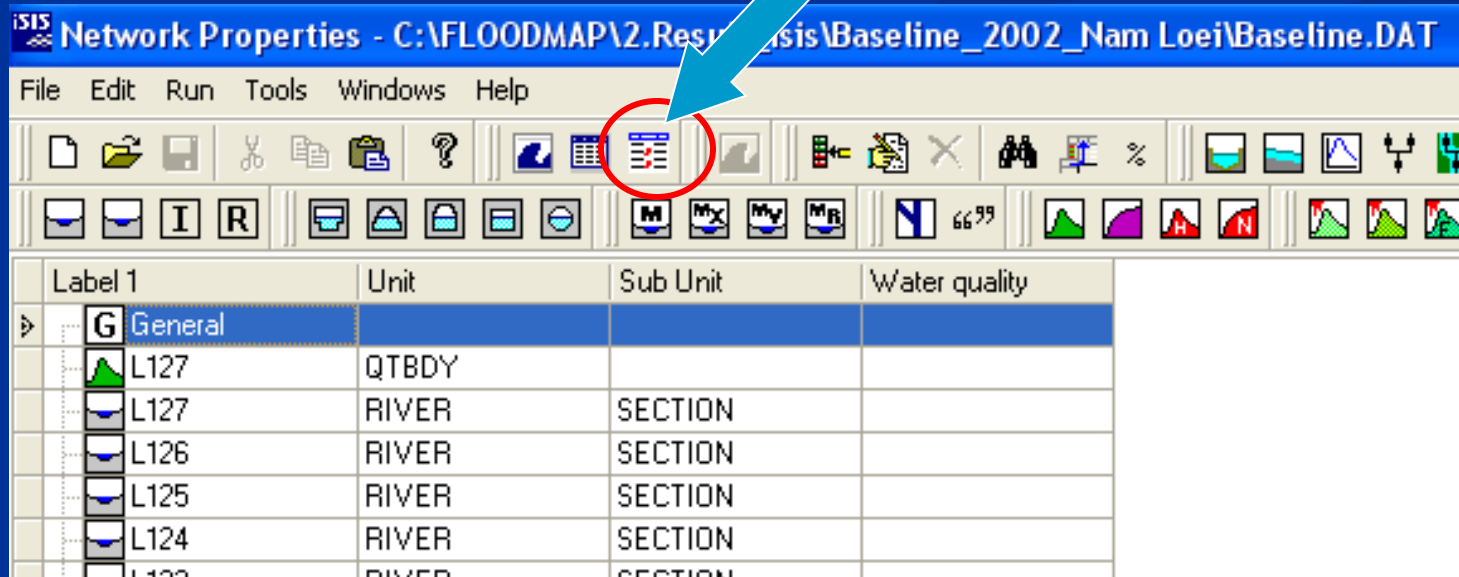
1.) Grid file which support by delta mapper (*.flt)



How to prepare data for DM (2/3)

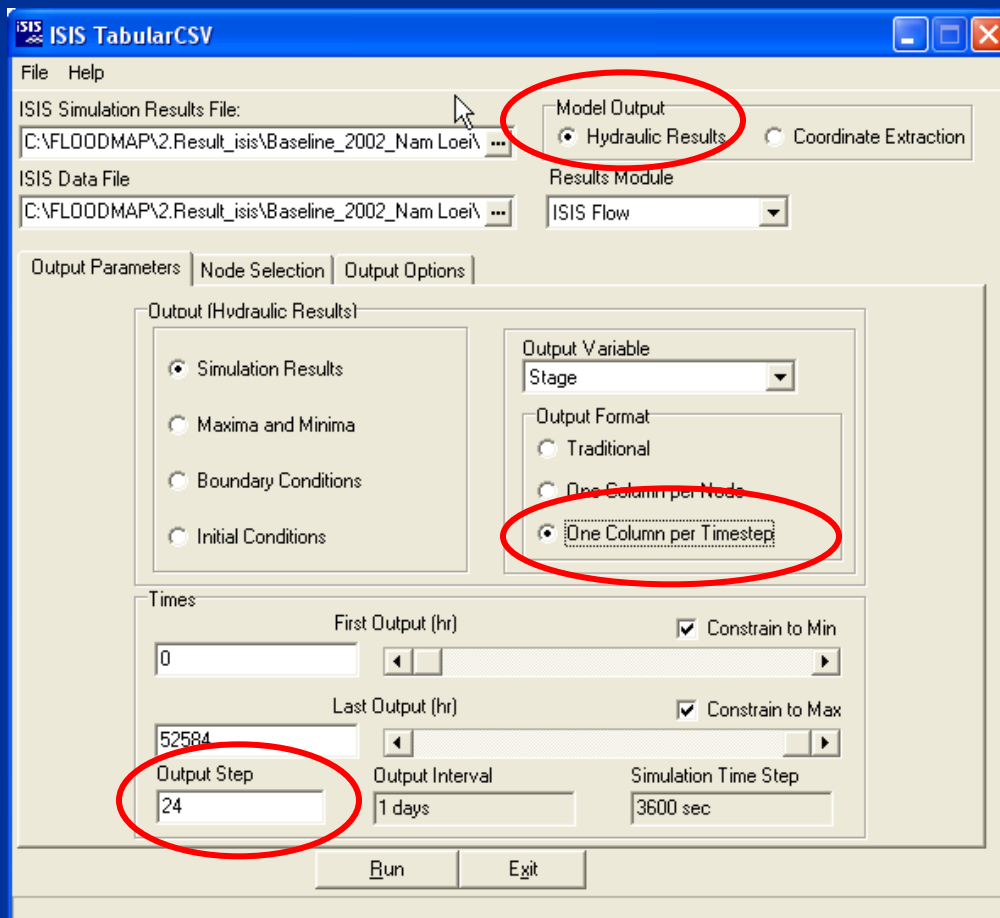
2.) Result from isis model with the formatted space delimited (*.csv)

- Open iSIS Model
- Run TabularCSV



How to prepare data for DM (2/3)

- Result from isis model with the formatted space delimited (*.csv)

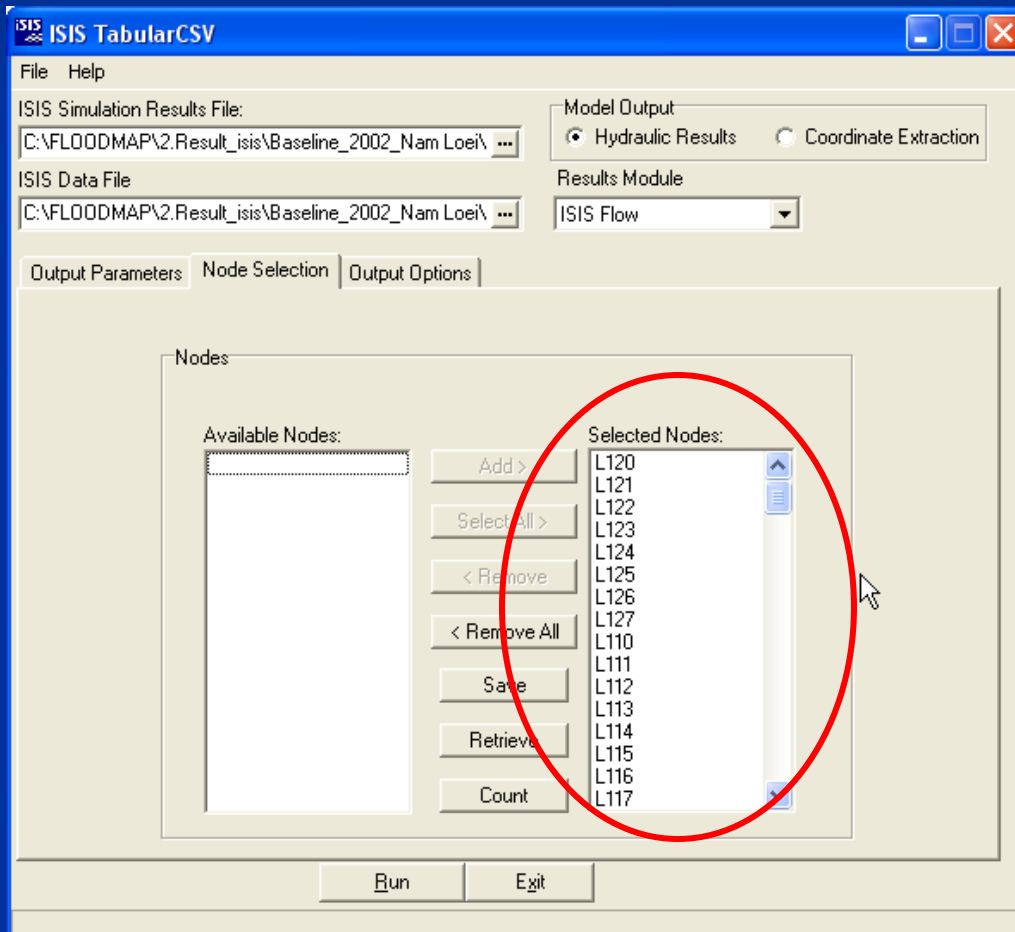


Output Parameters

- Hydraulic Results
- One Column per Timestep
- Output step = 24 hrs.

How to prepare data for DM (2/3)

- Result from isis model with the formatted space delimited (*.csv)

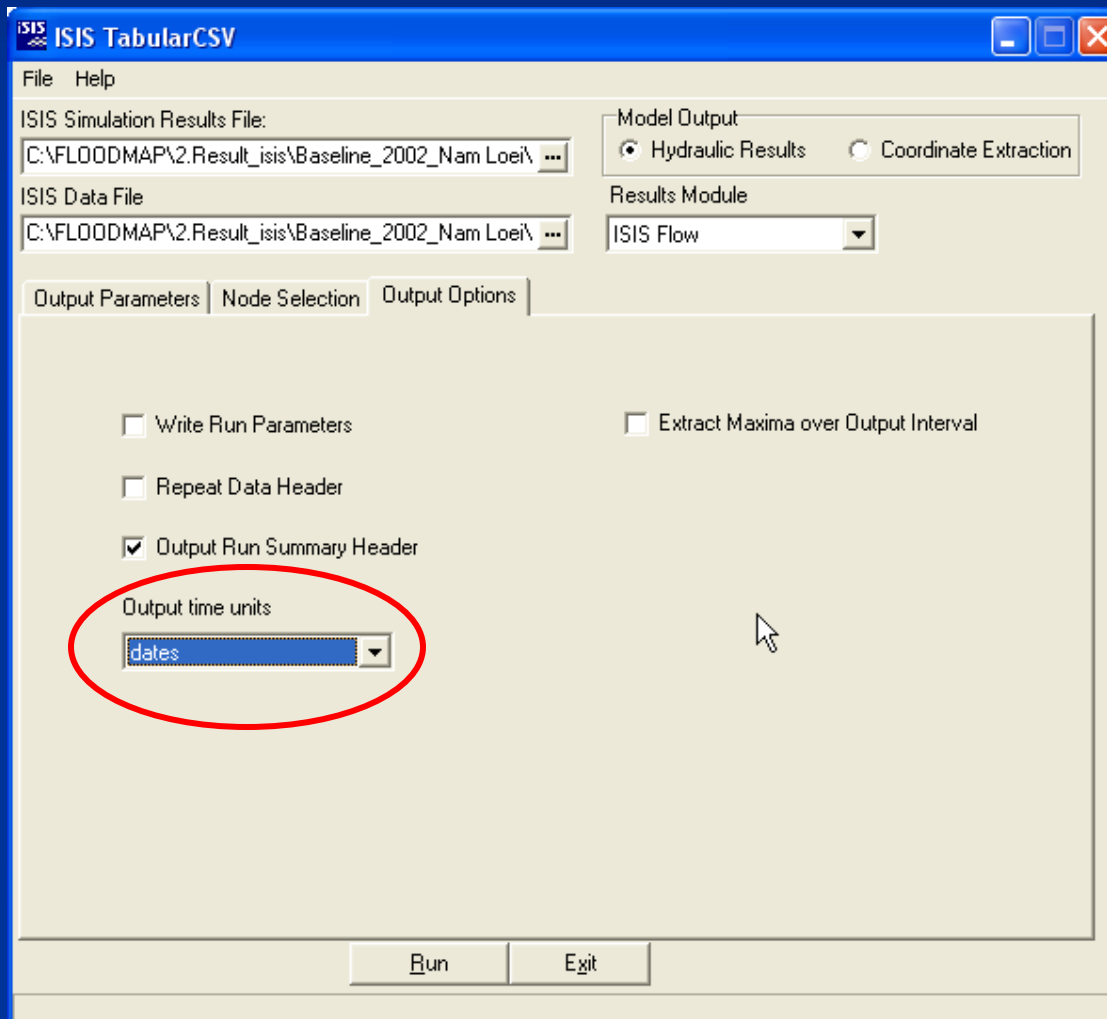


Node Selection

- Selected Nodes

How to prepare data for DM (2/3)

- Result from isis model with the formatted space delimited (*.csv)



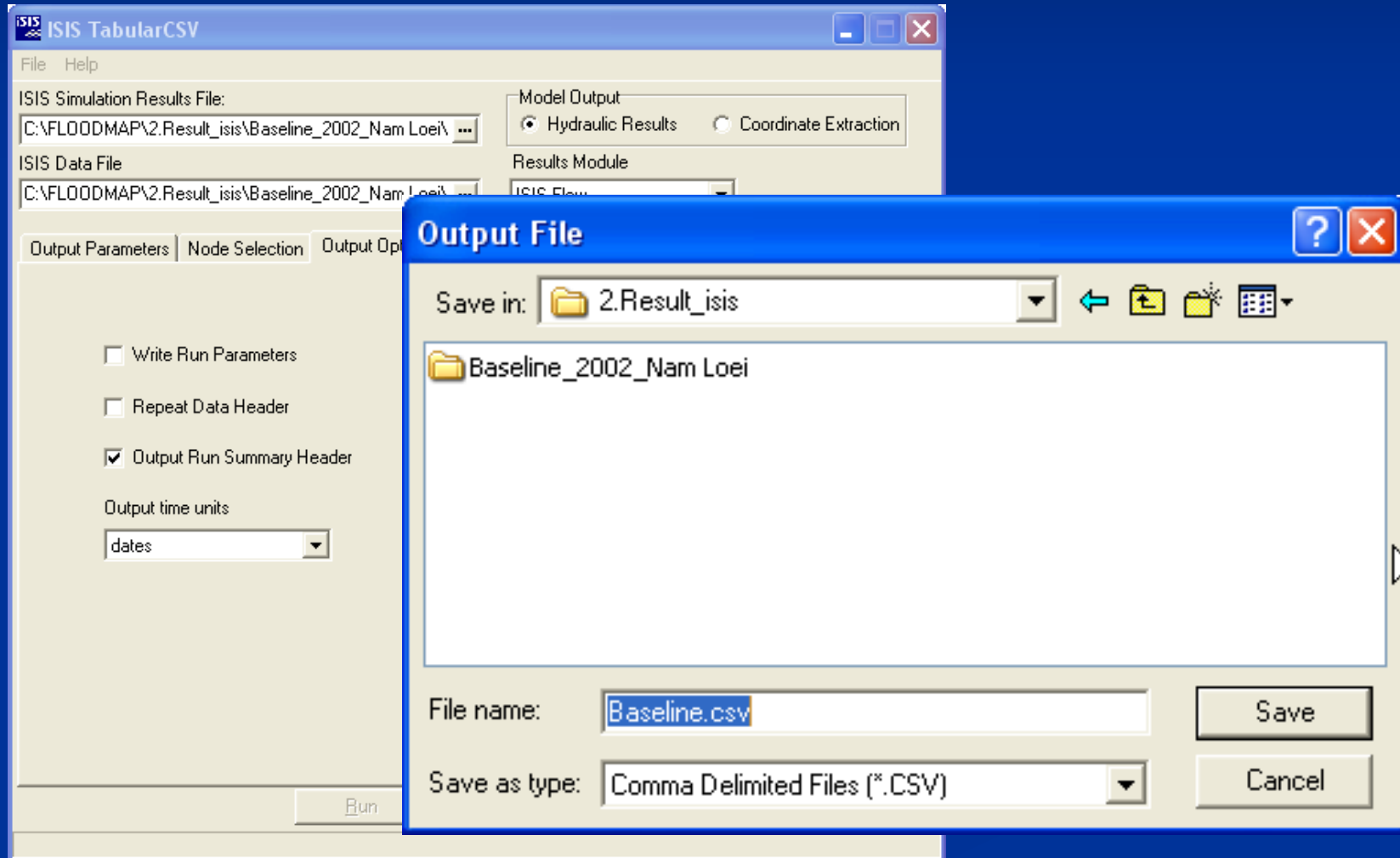
Output Option

- Selected “**dates**”
- Selected “**Run**”



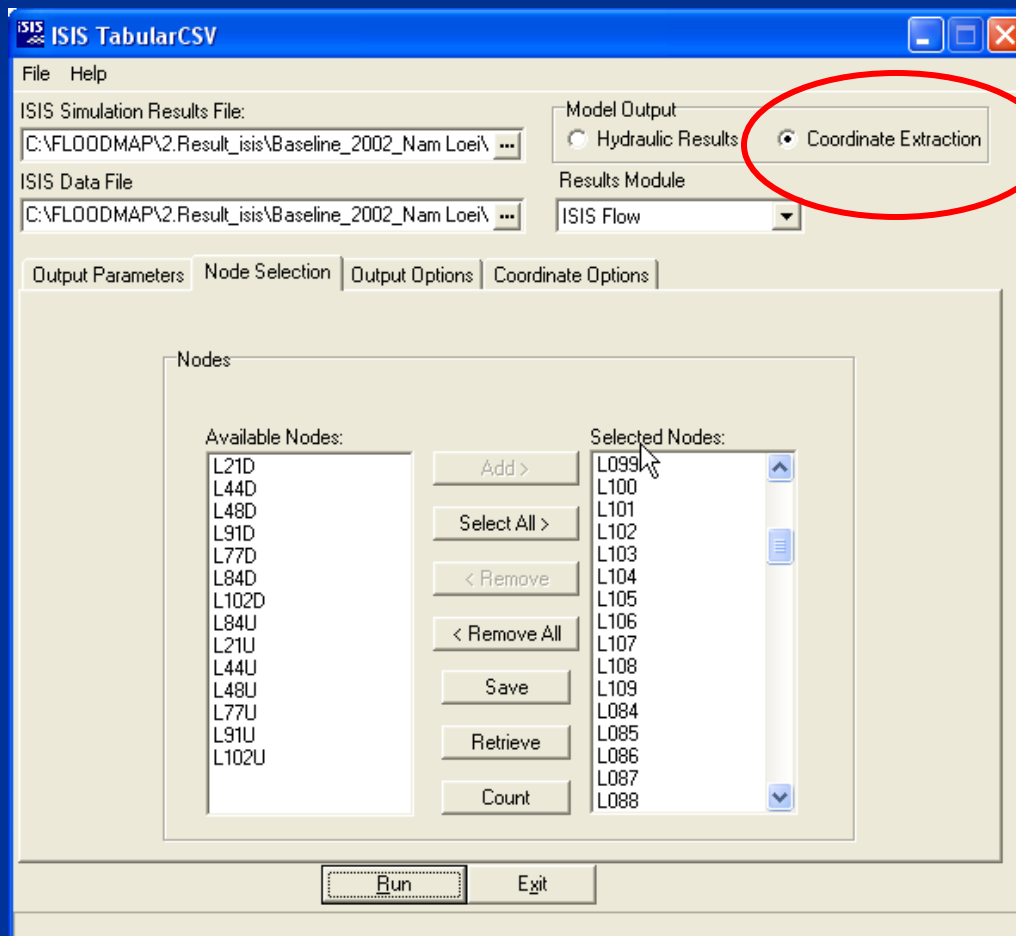
How to prepare data for DM (2/3)

- Result from isis model with the formatted space delimited (*.csv)



How to prepare data for DM (3/3)

3.) Nodes Coordination (*.txt) for create Tin schematization of isis model (*.htn)



- Selected “Coordinate Extraction”

How to prepare data for DM (3/3)

- Nodes Coordination (*.txt) for create Tin schematization of isis model (*.htn)

ISIS TabularCSV

File Help

ISIS Simulation Results File:
C:\FLOODMAP\2.Result_isis\Baseline_2002_Nam Loei\ ...

Model Output
 Hydraulic Results Coordinate Extraction

ISIS Data File
C:\FLOODMAP\2.Result_isis\Baseline_2002_Nam Loei\ ...

Results Module
ISIS Flow

Output Parameters | Node Selection | Output Options | **Coordinate Options**

Eastings/Northings extraction

Use the priority ordering box below to select from which source(s) and in which order (highest first) to extract Eastings and Northings for each node. An unchecked box next to the source means that this source will be ignored. The sources may be reordered by dragging and dropping. Section data includes RIVER, MUSK-XSEC, SPILL and FLOODPLAIN units. If either Visualiser file is selected, the corresponding file name should be entered in the appropriate box on the right, although if not entered, this source will merely be ignored. GISINFO map and schematic coordinates refer to those created with the ISIS Workbench (ISIS v1.5 and earlier).

Priority ordering

- FEHBDY unit (ISIS Data file)
- Section Data (ISIS Data file)
- Visualiser schematic file (*.ixy file)
- Visualiser map file (*.qxw file)**
- GISINFO map coordinate (ISIS Data file)
- GISINFO schematic coord (ISIS Data file)

Schematic File Name
C:\FLOODMAP\2.Result_isis\Baseline_2002_Na ...

Map File Name
C:\FLOODMAP\2.Result_isis\Baseline_2002_Na ...

Cross Section Coordinates

Output blank records **Output from River Bed** Output from Left and Right banks

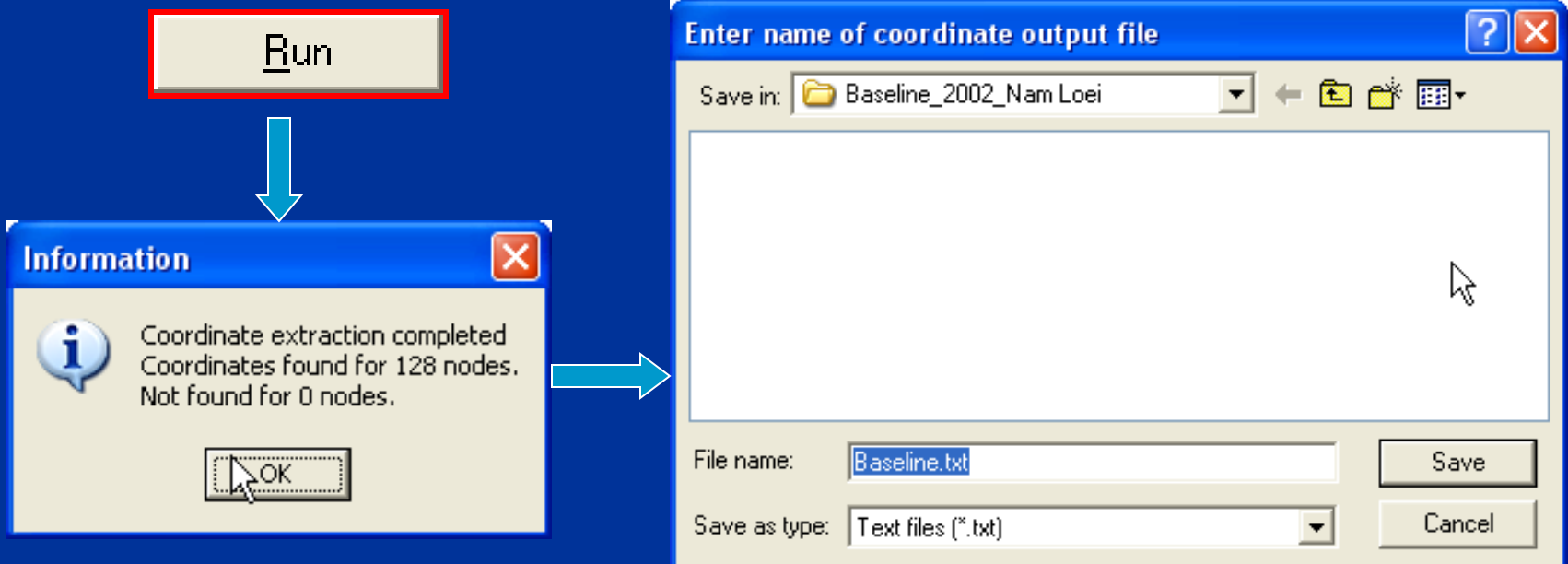
Run Exit

Use this page to extract coordinates from existing sources to a *.txt file, e.g. for import into the GIS Visualiser

How to prepare data for DM (3/3)

- Nodes Coordination (*.txt) for create Tin schematization of isis model (*.htn)

- Selected “Run”

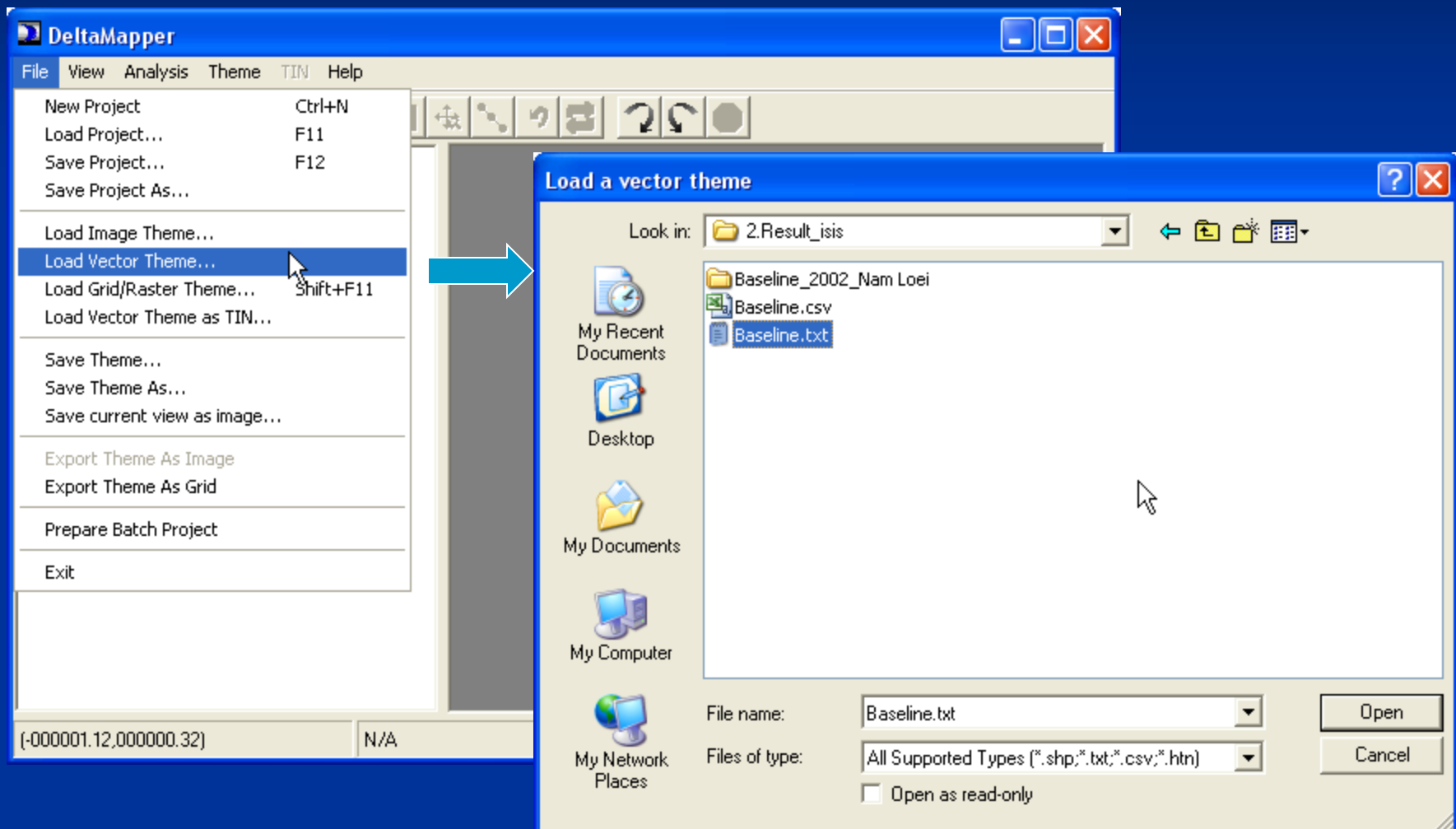


How to create flood map by using Delta Mapper ?



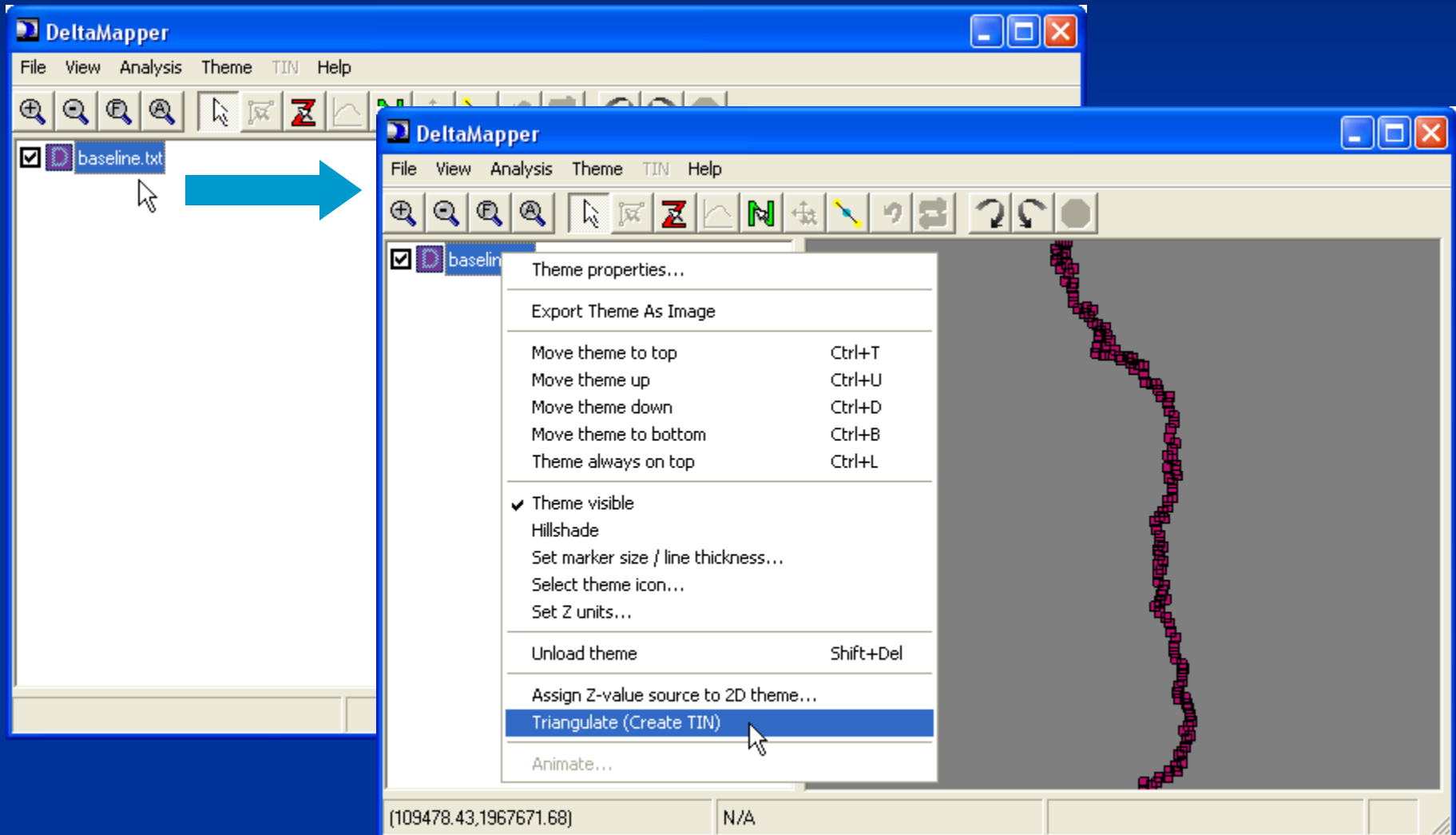
1. Open “DeltaMapper”

- Selected “File > Load Vector Theme”

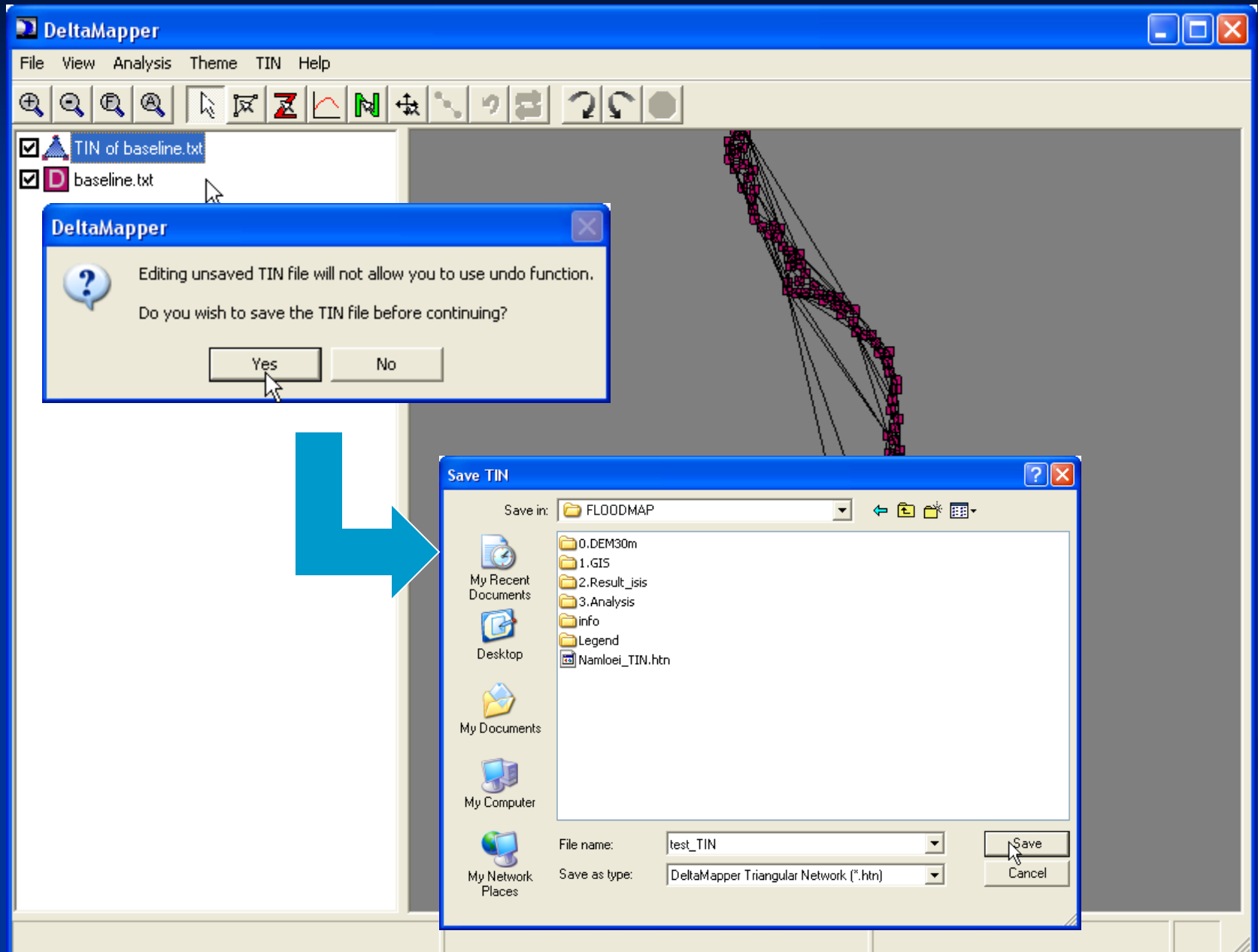


2. Create “TIN”

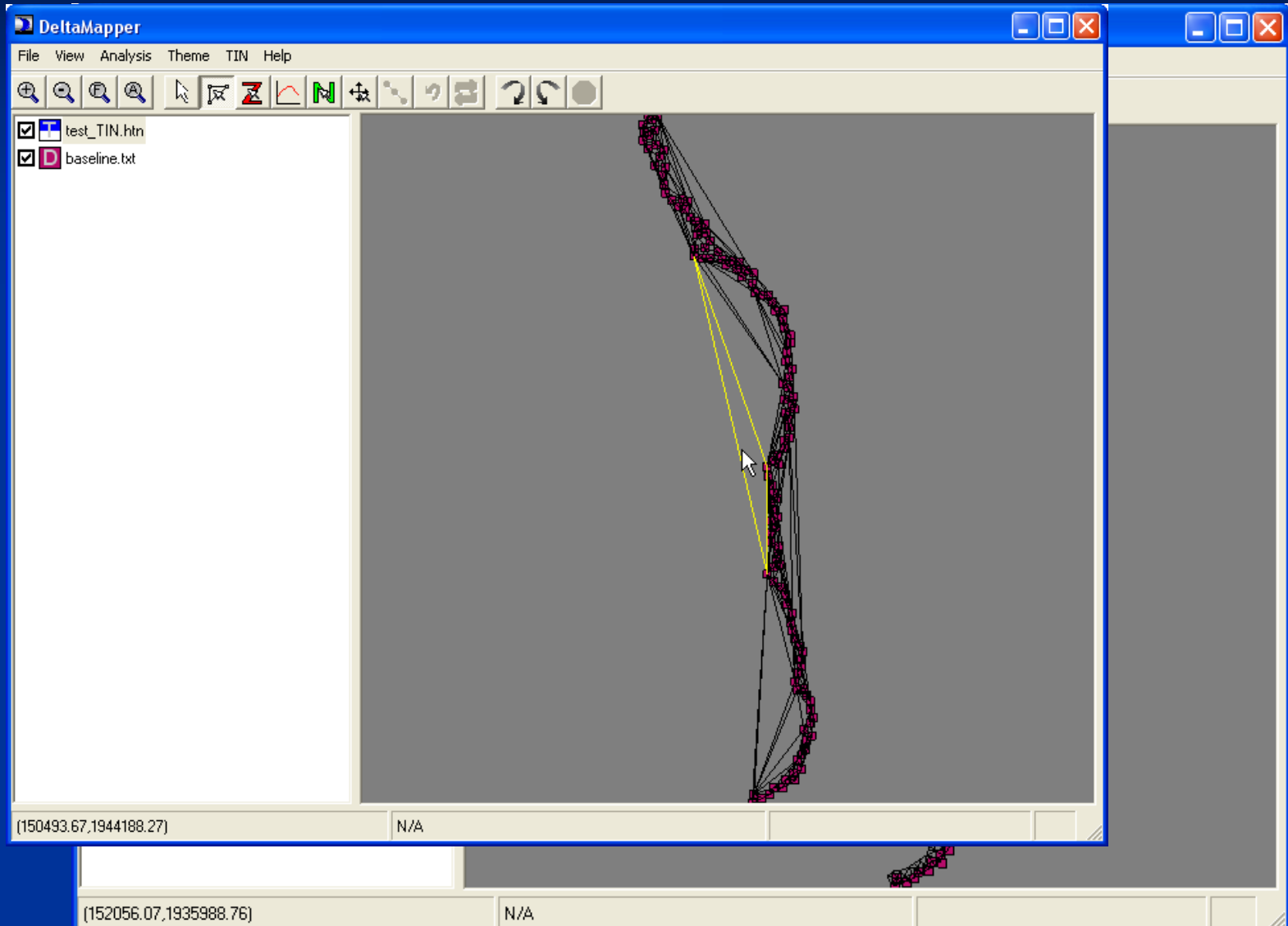
- Selected “*.txt” and Right Click



- Edit and Save TIN to “*.htn”

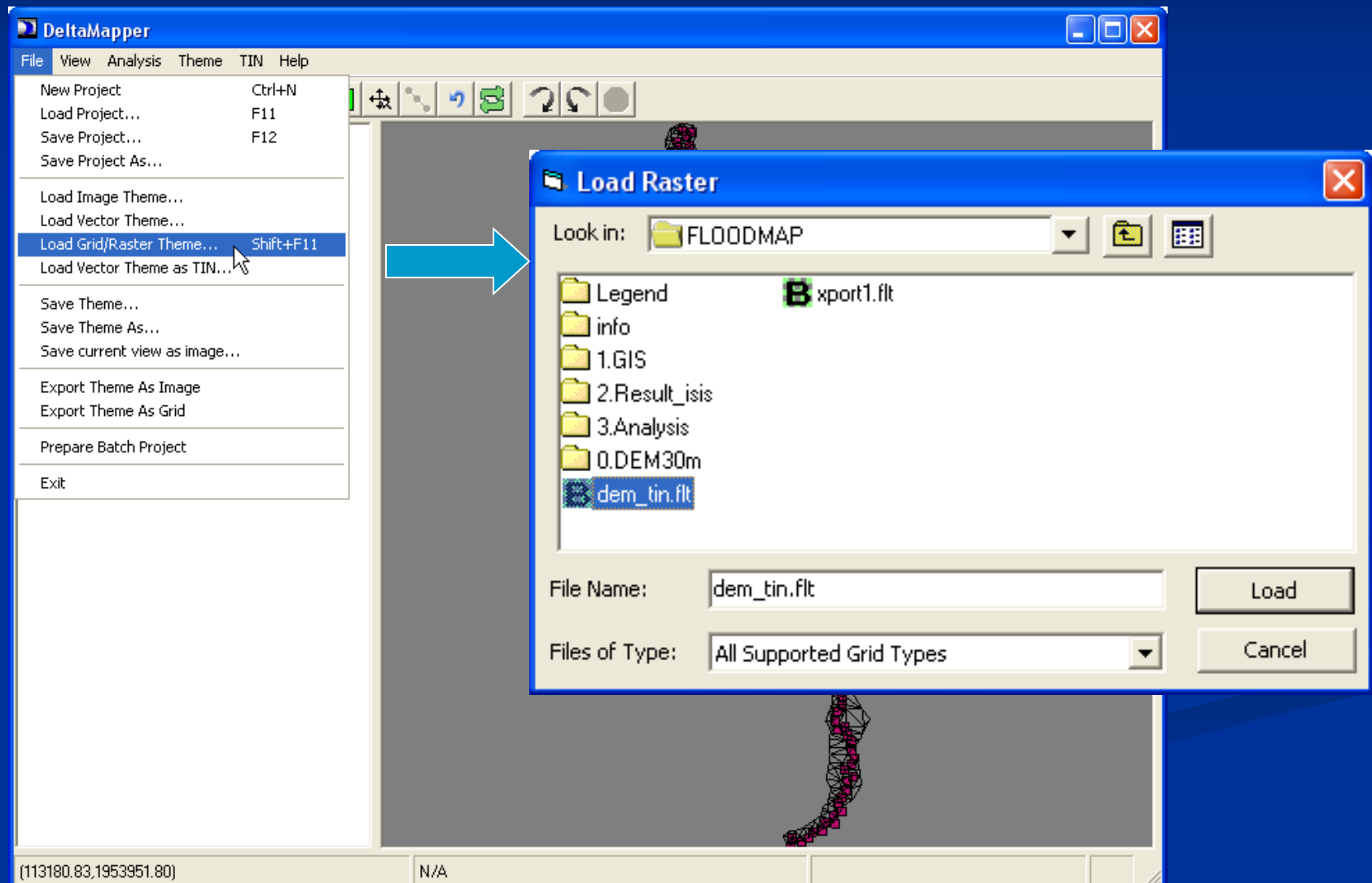


- Edit and Save TIN to “*.htn”



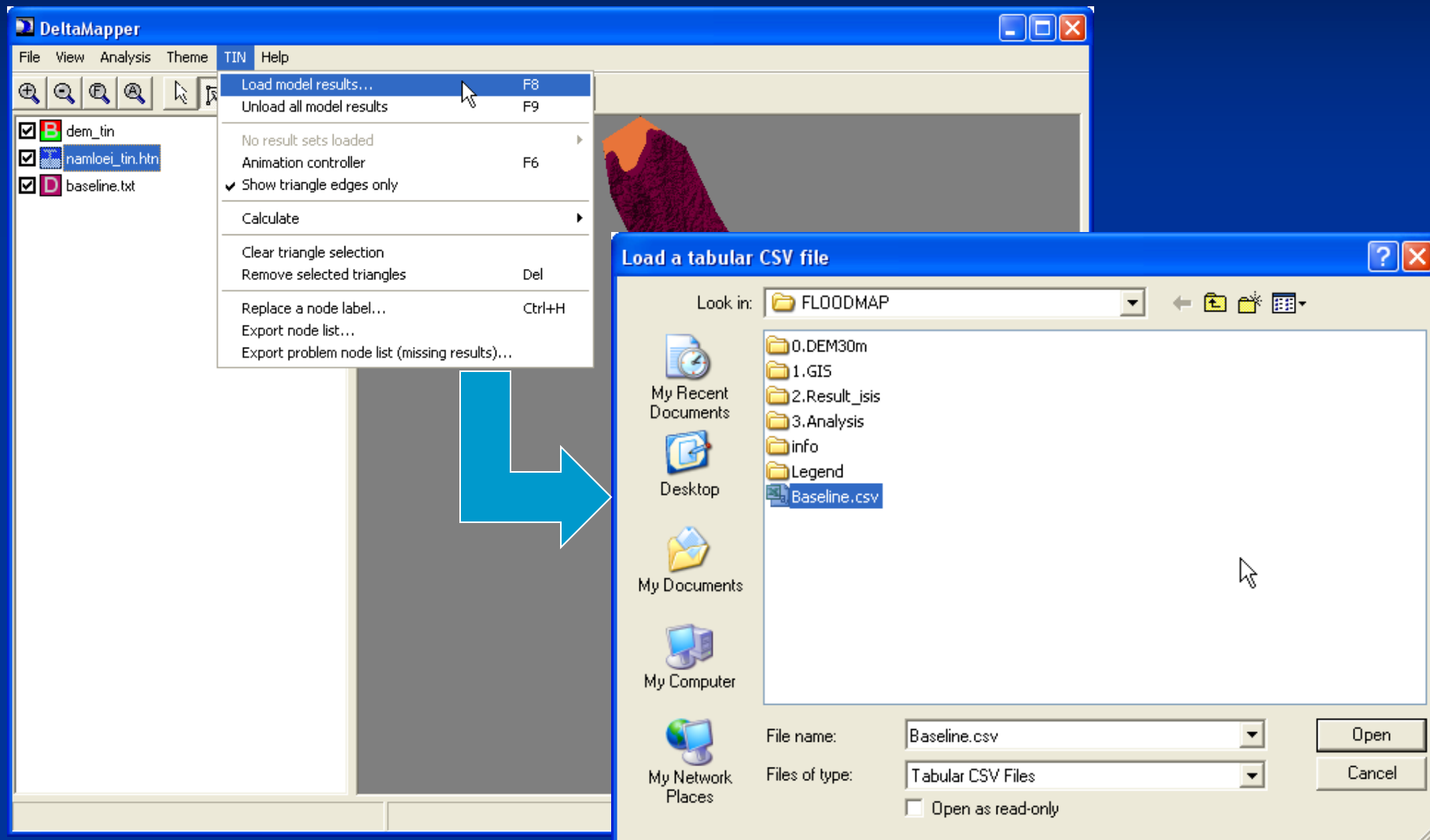
3. Load “DEM”

- Selected “File> Load Grid/Raster Theme...”

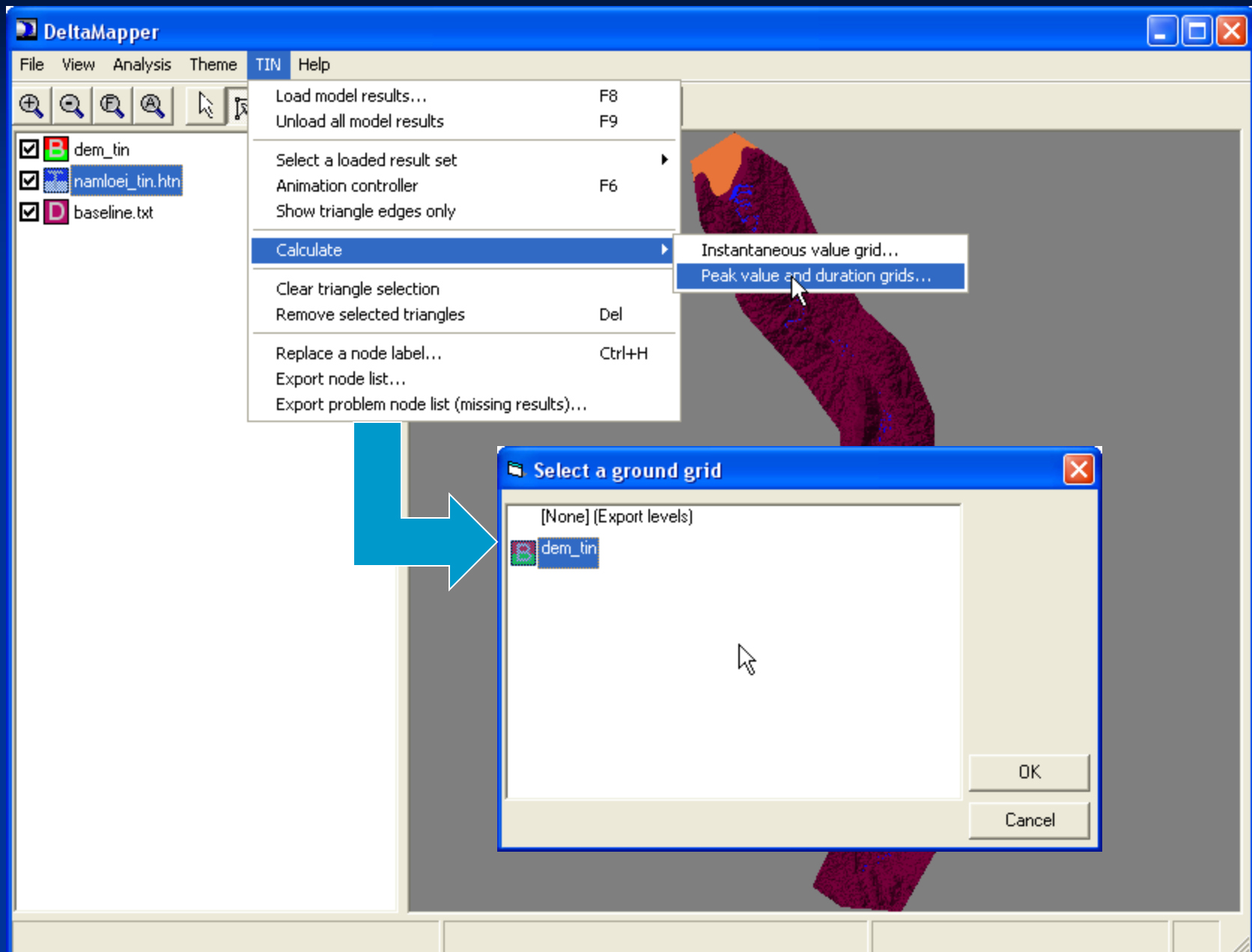


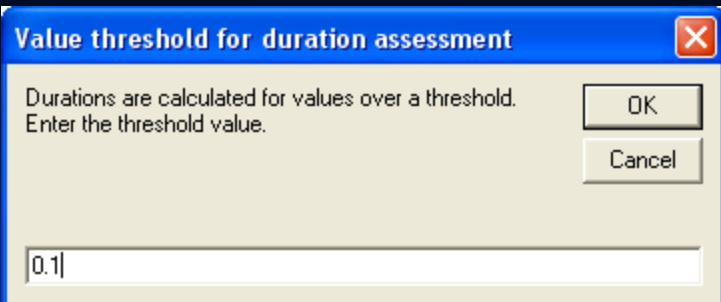
4. Load “Model Result”

- Selected “TIN> Load model results...”

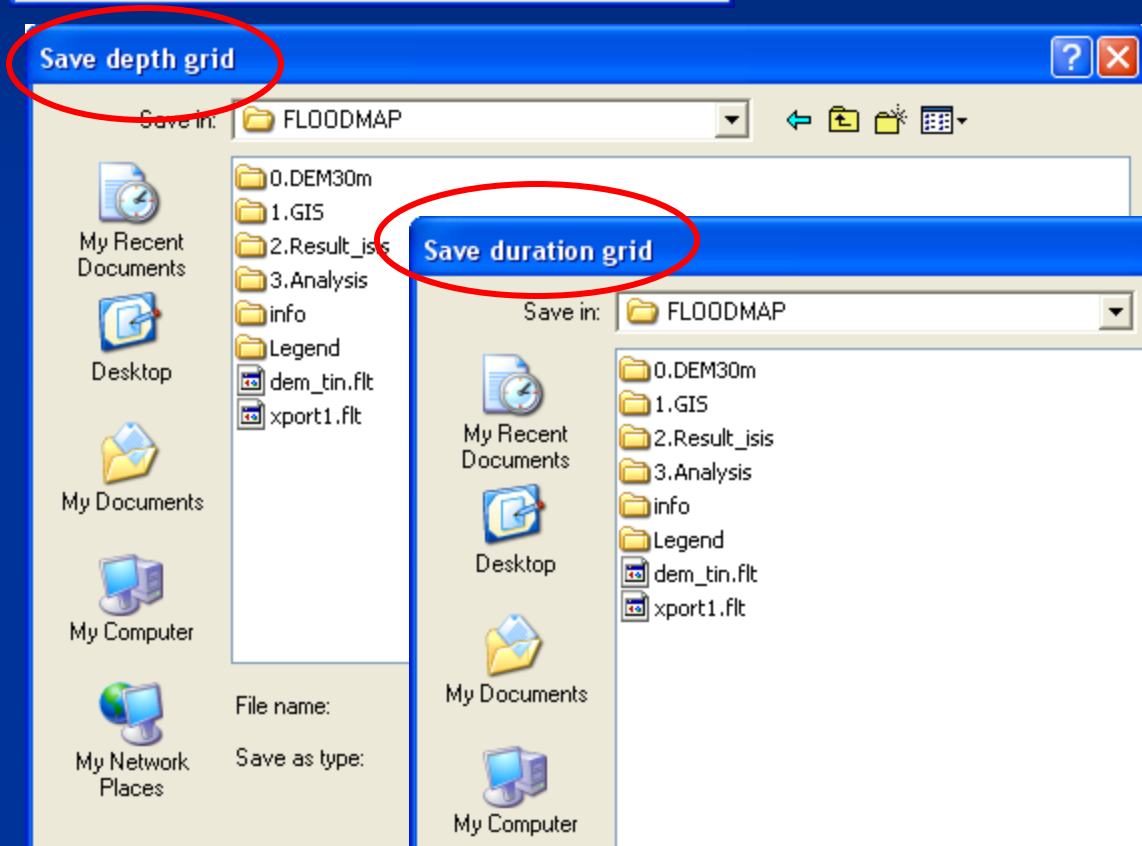


- Selected “Calculate> Peak value and duration grid”

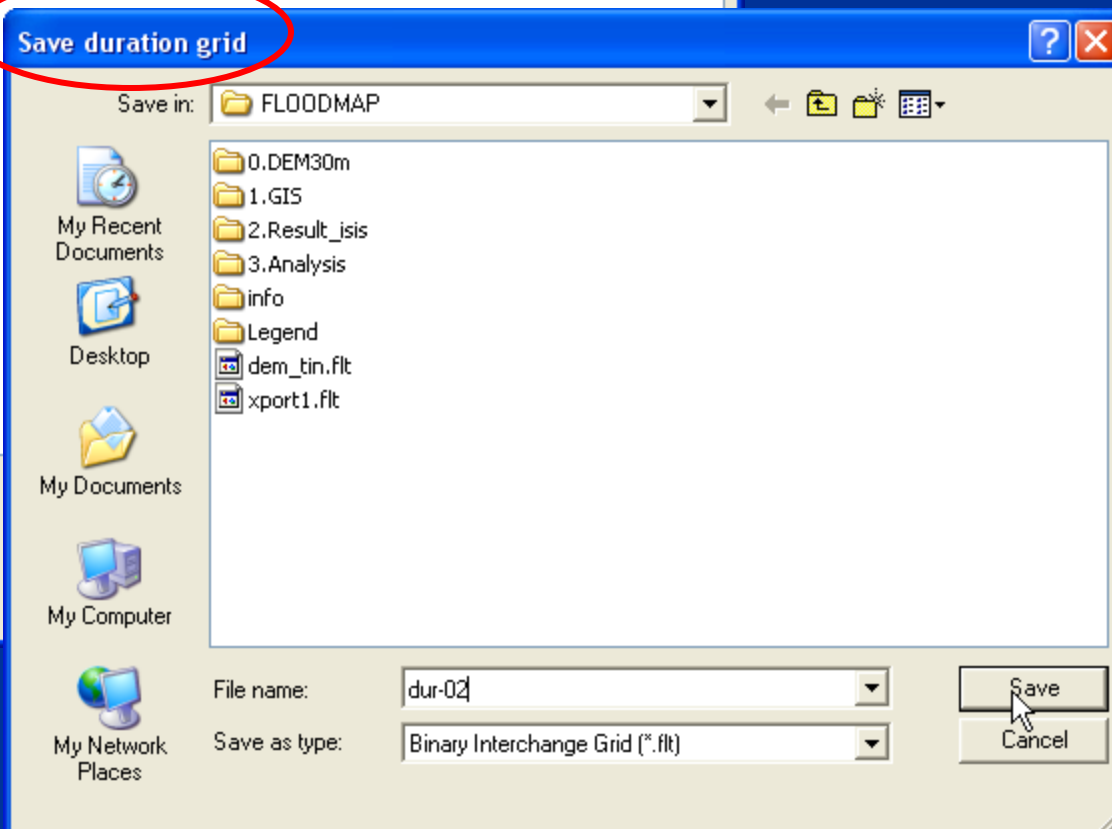




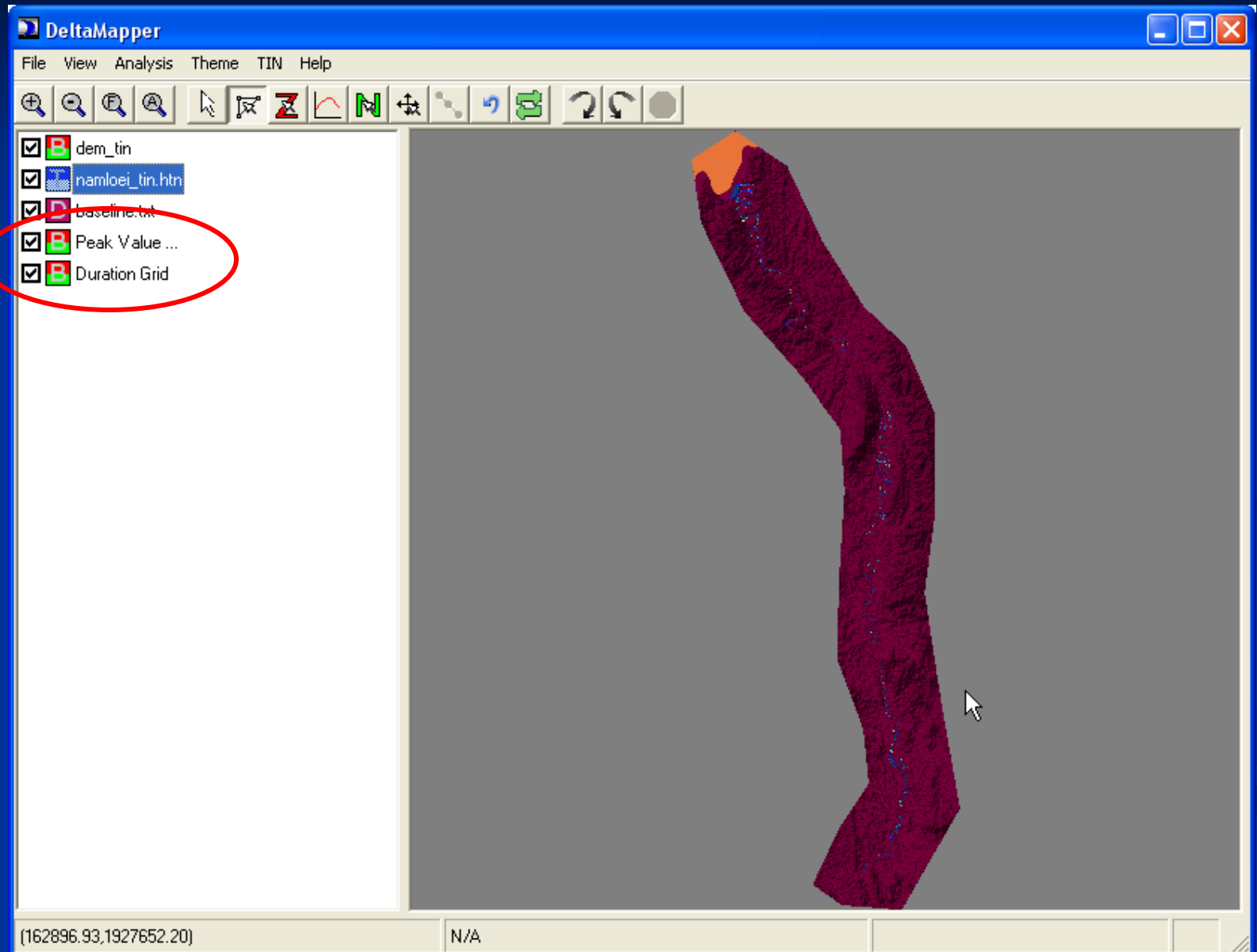
- Selected “Values over threshold”



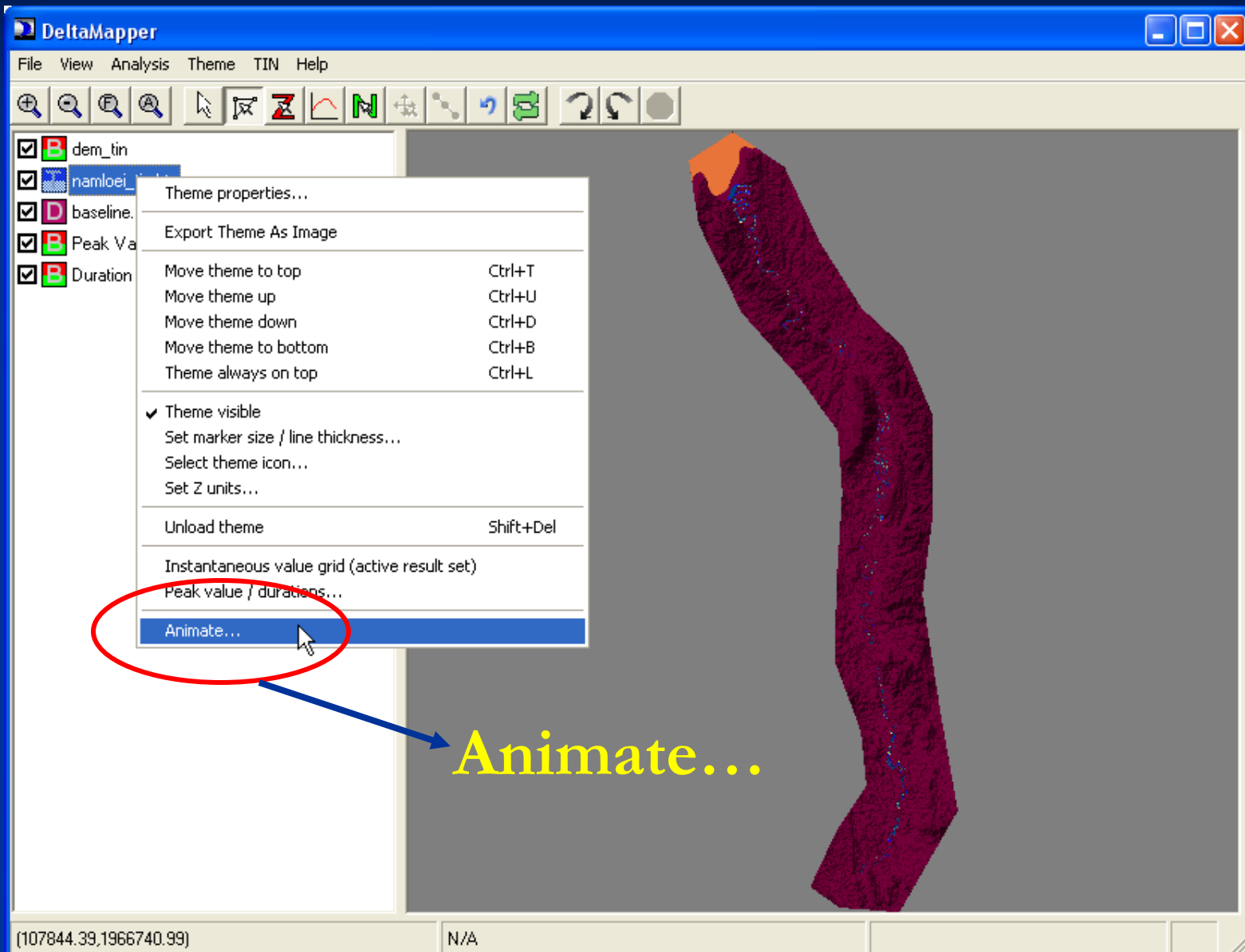
- Save “Depth grid”
- Save “Duration grid”



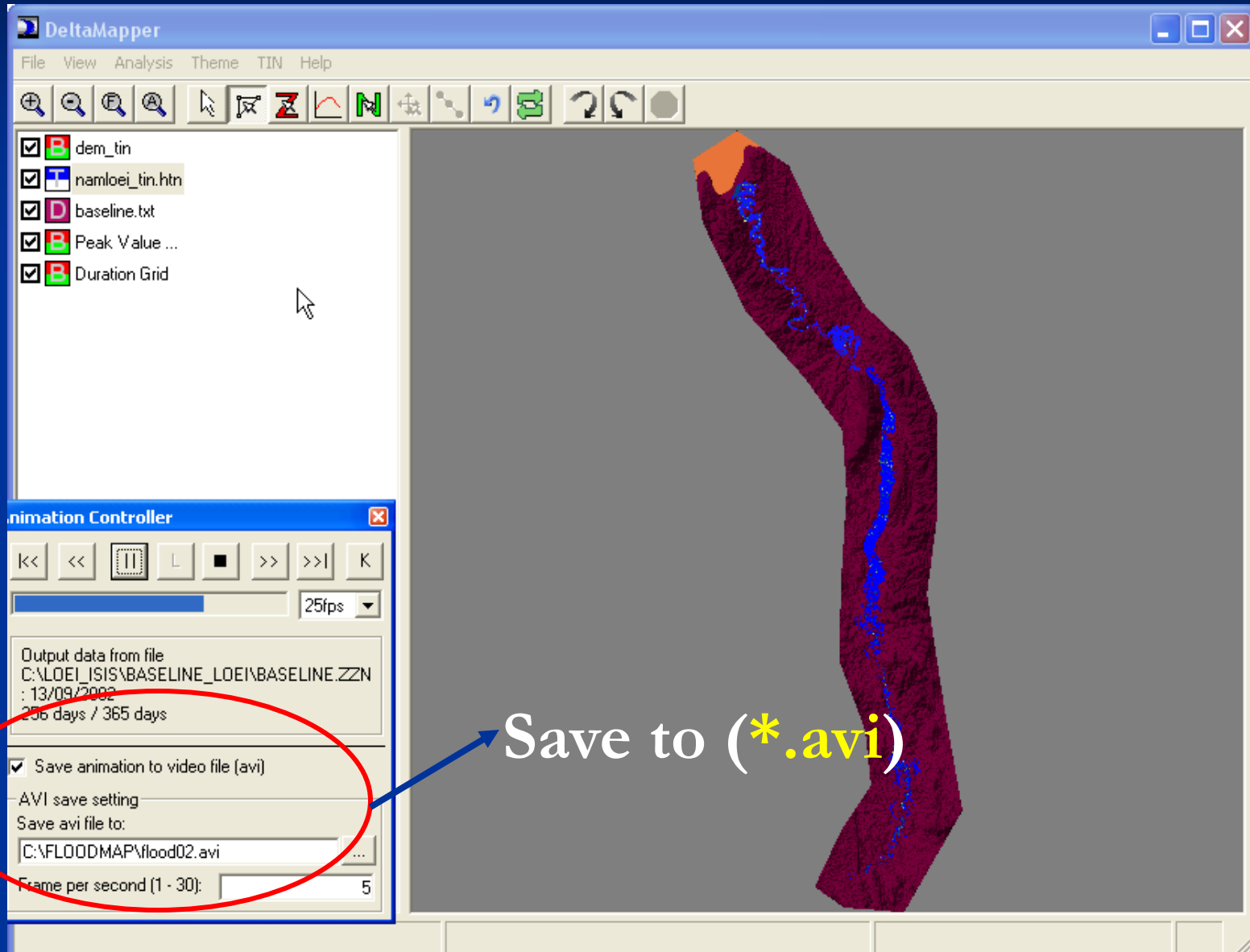
Calculation “Max.Depth & Duration” Finish



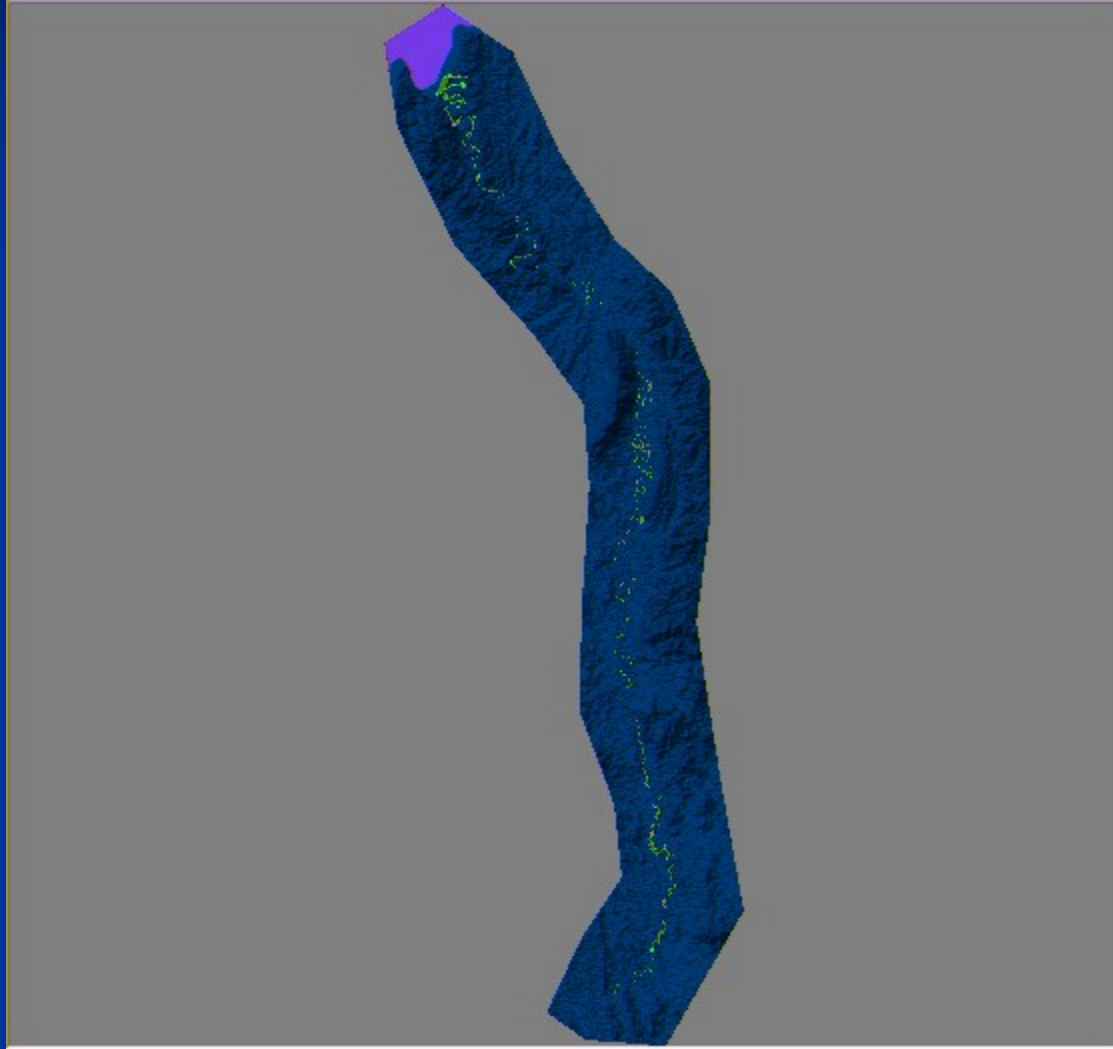
View Result



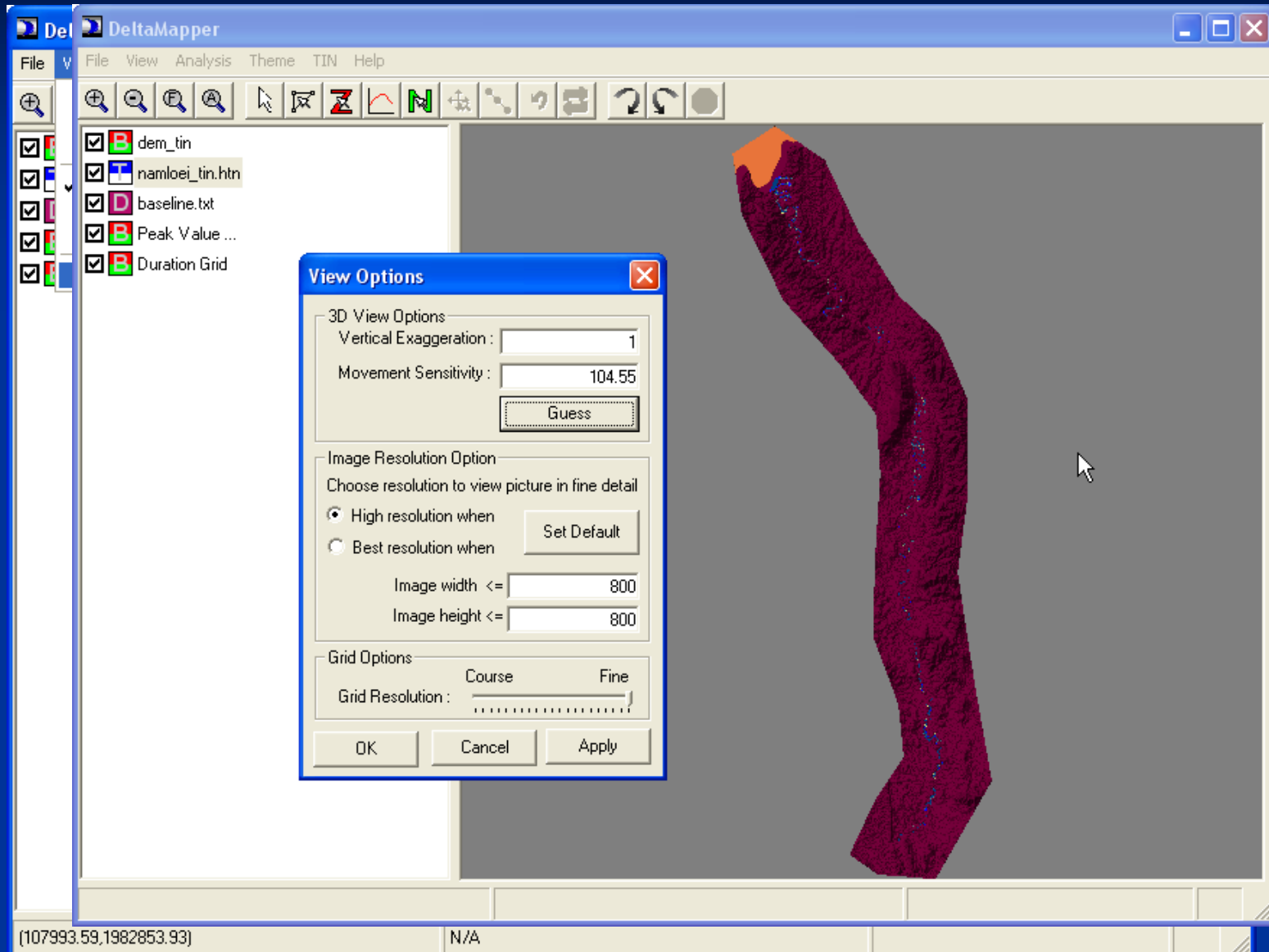
Animation View



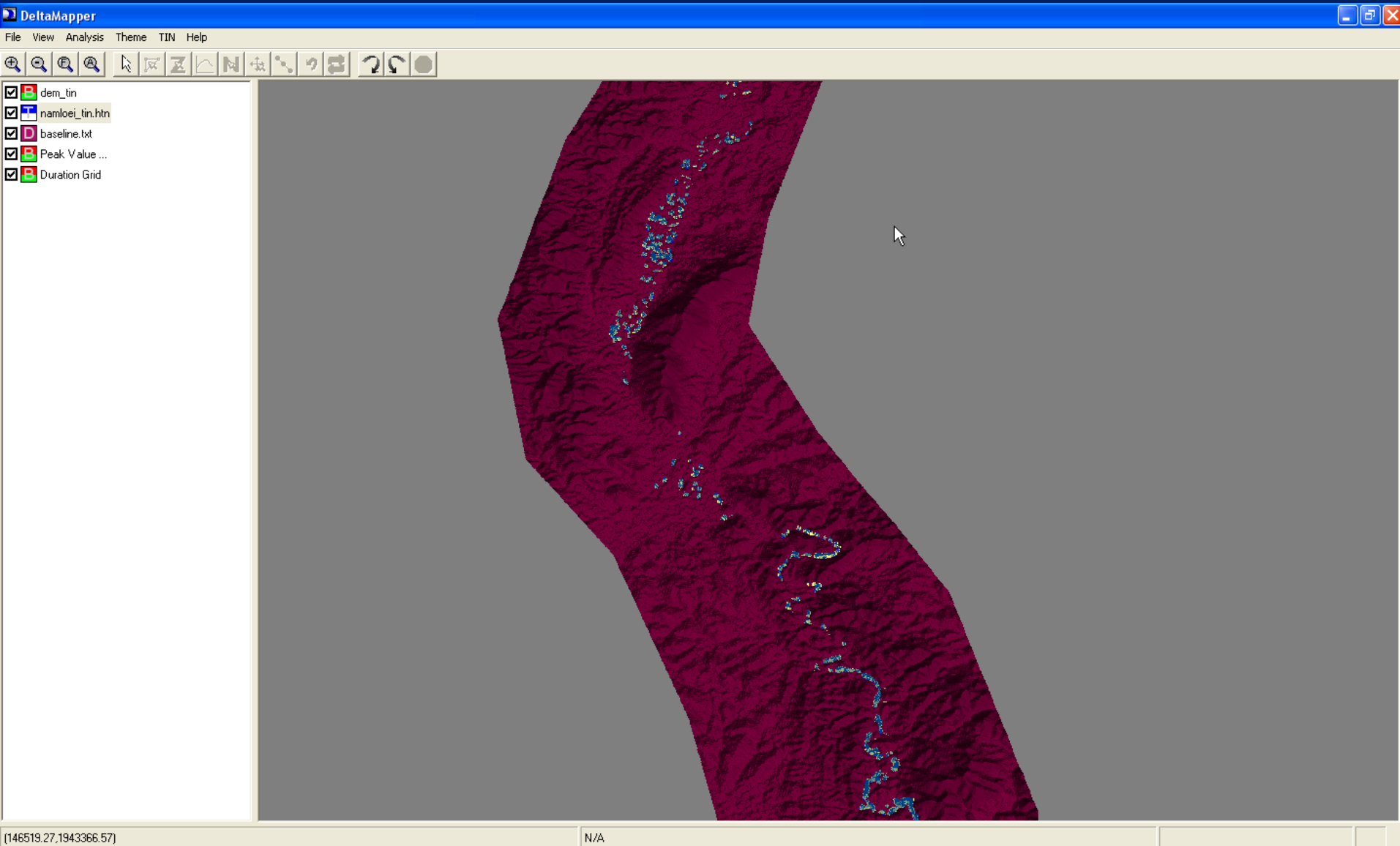
Example : Flood_2002.avi



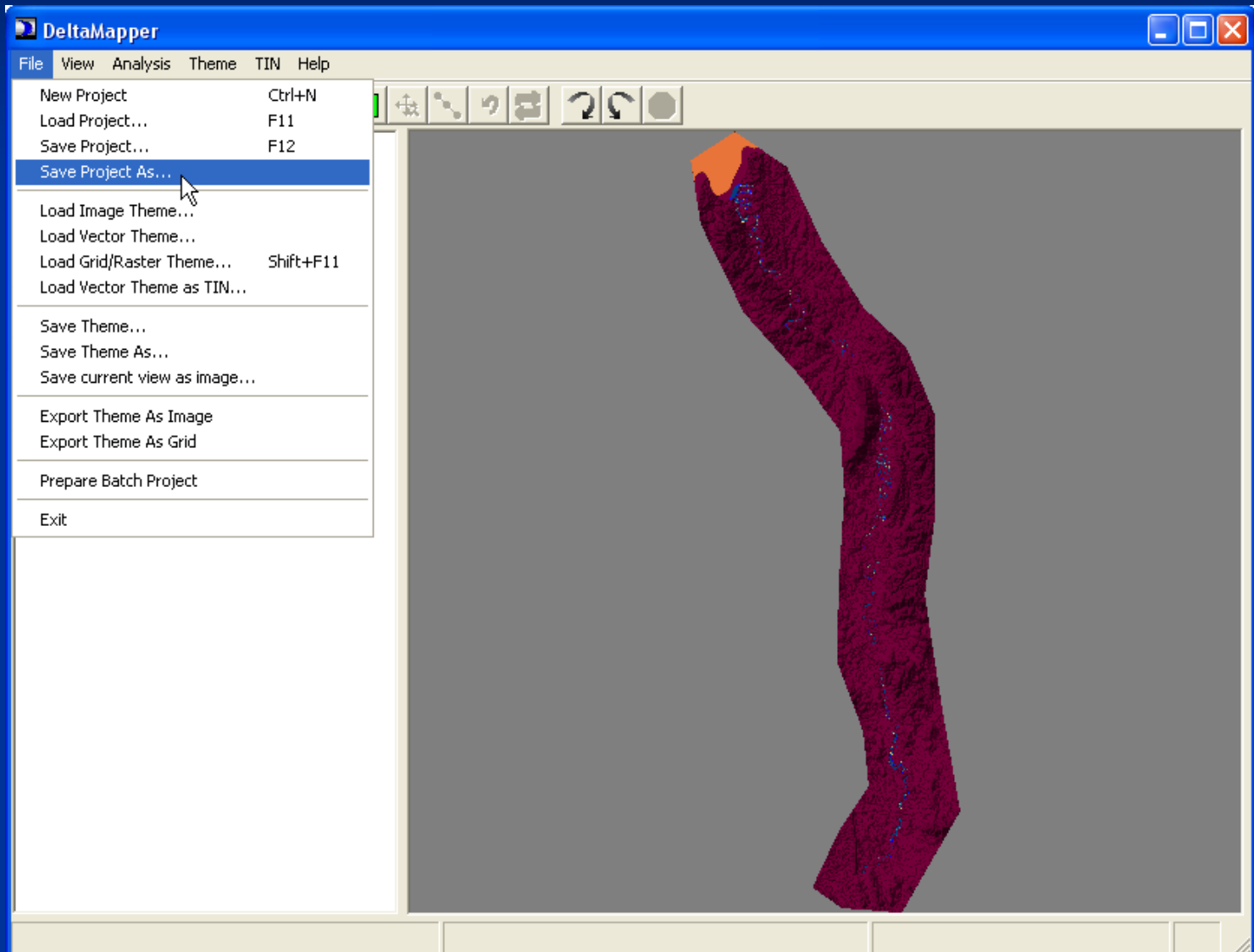
View option : 3D View



Example : 3D View



Save Project As...

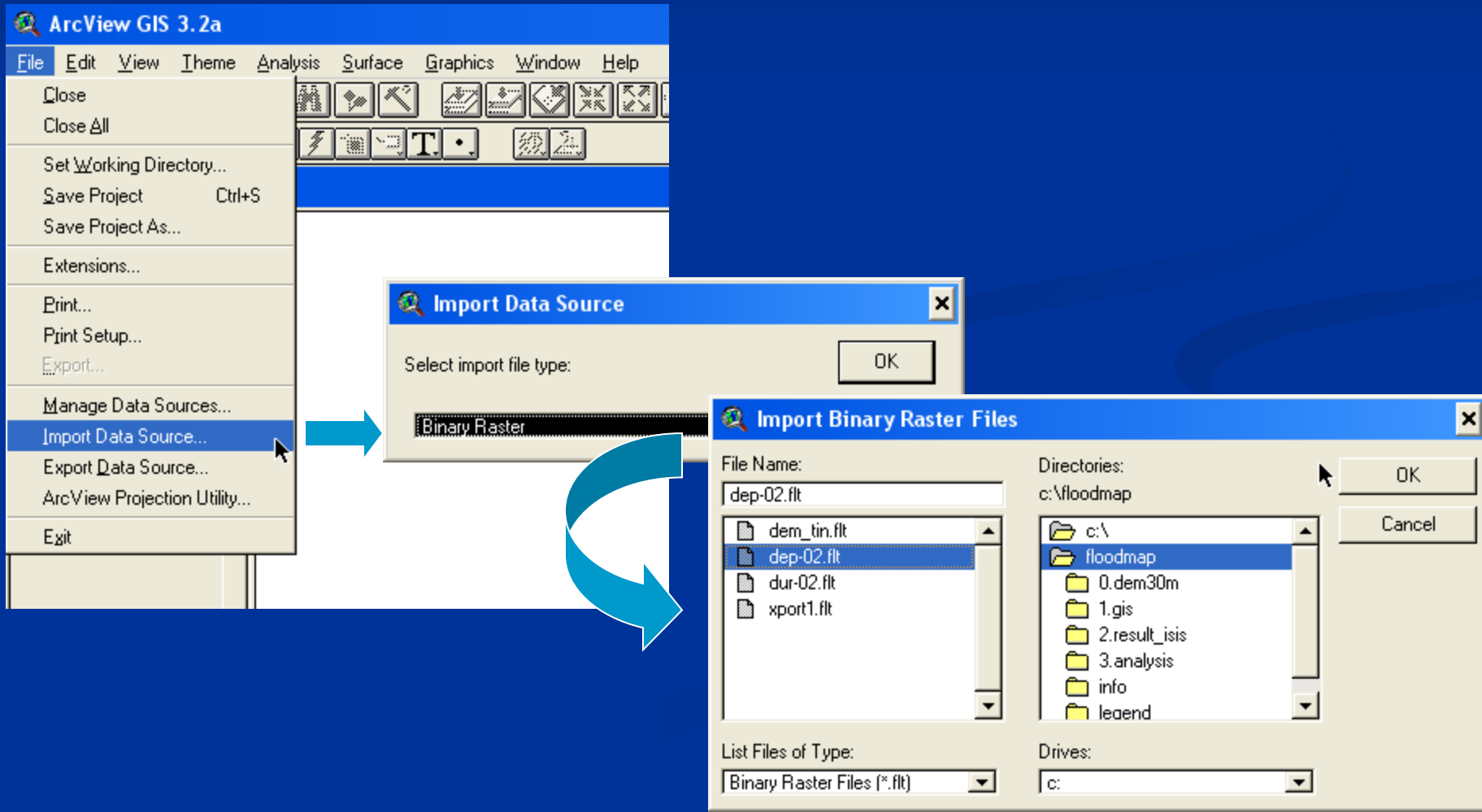


Result Analysis

Calculate Flood map area

By Using : ArcView / ArcGIS

1. Import data source “ **File > Import Data Source...** ”



2. Map Calculator “ Analysis > Map Calculator...”

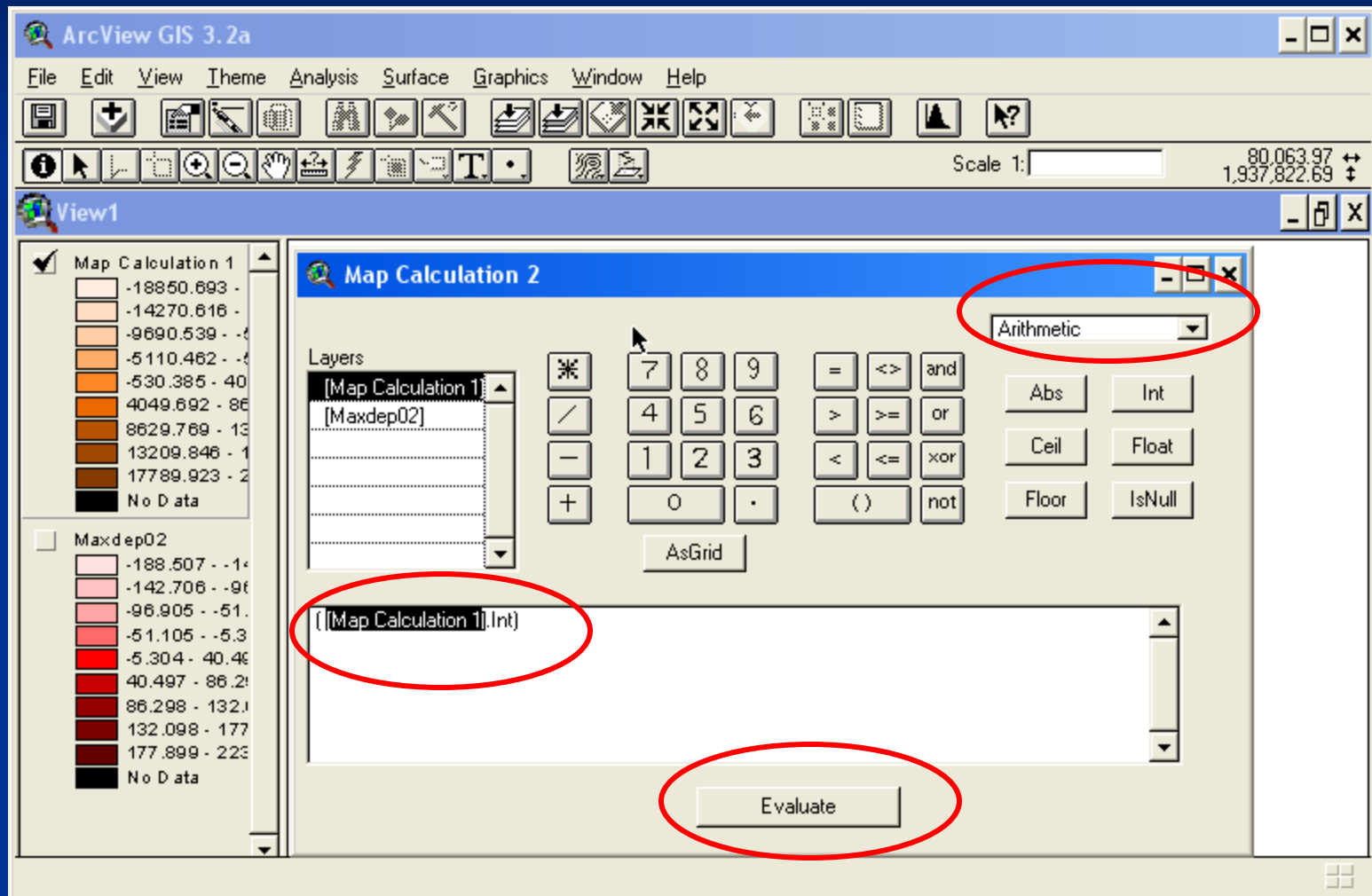
- Convert unit from “ m. ” to “ cm. ”

The screenshot shows the ArcView GIS 3.2a interface. The 'Analysis' menu is open, and 'Map Calculator...' is selected. The 'Map Calculation 1' dialog box is displayed, showing the expression $[(\text{Maxdep02}) * 100]$ in the input field. The 'Arithmetic' dropdown menu is set to 'Arithmetic'. The 'Evaluate' button is highlighted. A blue arrow points from the 'Map Calculator...' menu item to the dialog box.

Displays the dialog box to create a grid theme with an algebraic statement

2. Map Calculator “ Analysis > Map Calculator...”

- set value to “ Integer ”



3. Classification “Legend Editor”

The screenshot shows the ArcView GIS 3.2a interface. The main window displays a legend for the 'Max_dep02' layer. The legend is divided into two sections: 'Max_dep02' and 'Map Calculation 1'. The 'Max_dep02' section shows a vertical color scale from light purple to dark blue, representing depth ranges from 0 to 8 meters. The 'Map Calculation 1' section shows a vertical color scale from light orange to dark brown, representing numerical ranges from -18850.693 to 17789.923. The 'Legend Editor' dialog box is open, showing the 'Max_dep02' theme and 'Graduated Color' legend type. The 'Classification Field' is set to 'Value' and 'Normalize by' is set to '<None>'. The dialog box contains a table with columns for 'Symbol', 'Value', and 'Label'. A blue arrow points from the 'Legend Editor' dialog box to the 'Max_dep02' legend in the main window.

Legend Editor

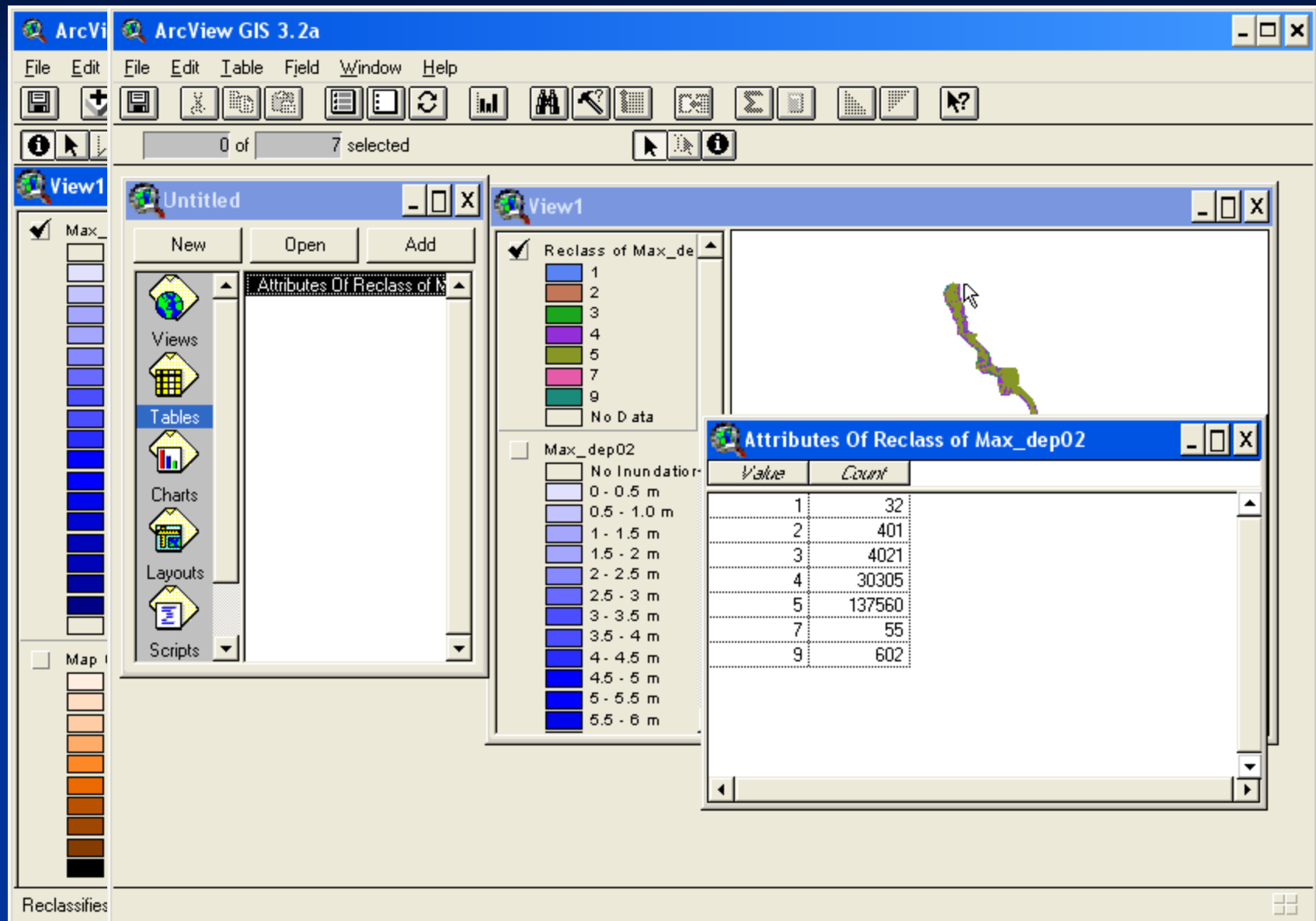
Theme: Max_dep02
Legend Type: Graduated Color
Classification Field: Value
Normalize by: <None>

| Symbol | Value | Label |
|------------------|-----------------|-----------------|
| [Light Purple] | -18850 - -14270 | -18850 - -14270 |
| [Light Blue] | -14269 - -9690 | -14269 - -9690 |
| [Medium Blue] | -9689 - -5110 | -9689 - -5110 |
| [Dark Blue] | -5109 - -530 | -5109 - -530 |
| [Very Dark Blue] | -529 - 4050 | -529 - 4050 |
| [Black] | 4051 - 8630 | 4051 - 8630 |
| [Dark Blue] | 8631 - 13210 | 8631 - 13210 |

Color Ramps: Red monochromatic

Advanced... Statistics... Undo Apply

4. Reclassify “ Analysis > Reclassify...”



The screenshot shows the ArcView GIS 3.2a interface. The main window displays a map of a region with a reclassified layer. The 'Reclass of Max_dep02' dialog is open, showing a legend with 9 classes and a color scale. The 'Attributes Of Reclass of Max_dep02' dialog is also open, displaying a table of values and counts.

Reclass of Max_dep02 Legend:

- 1
- 2
- 3
- 4
- 5
- 7
- 9
- No Data

Attributes Of Reclass of Max_dep02 Table:

| Value | Count |
|-------|--------|
| 1 | 32 |
| 2 | 401 |
| 3 | 4021 |
| 4 | 30305 |
| 5 | 137560 |
| 7 | 55 |
| 9 | 602 |

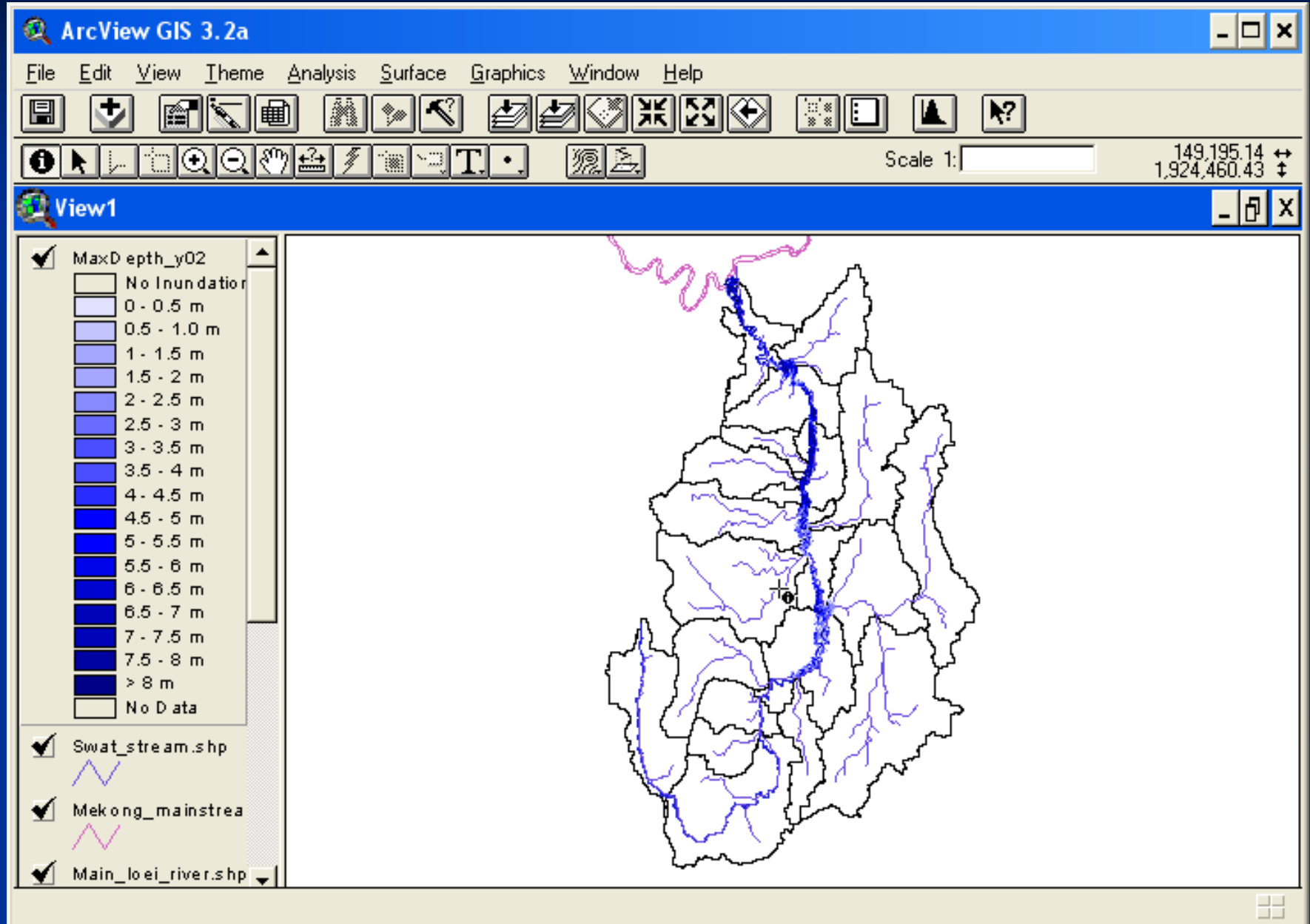
5. Export Data for calculate flood area by “Excel”

The screenshot shows the ArcView GIS 3.2a interface. The main window displays a map titled 'View1' with a legend for 'Reclass of Max_dep02'. The legend shows nine categories with corresponding colors and labels. The 'Legend Editor' dialog box is open, showing the 'Reclass of Max_dep02' theme and a 'Unique Value' legend type. The 'Values Field' is set to 'Value'. The dialog contains a table with the following data:

| Symbol | Value | Label | Count |
|--------|-------|---------------|--------|
| 1 | 1 | No Inundation | 32 |
| 2 | 2 | > 0.5 m | 401 |
| 3 | 3 | > 1.0 m | 4021 |
| 4 | 4 | > 2.0 m | 30305 |
| 5 | 5 | > 3.0 m | 137560 |
| 7 | 7 | > 4.0 m | 55 |
| 9 | 9 | < 5.0 m | 602 |

The 'Color Schemes' dropdown is set to 'Bountiful Harvest'. The 'Advanced...', 'Statistics...', 'Undo', and 'Apply' buttons are visible at the bottom of the dialog.

5. Check Result and **Impact analysis**



**Thank You for your
kind attention**