

# Channel Routing

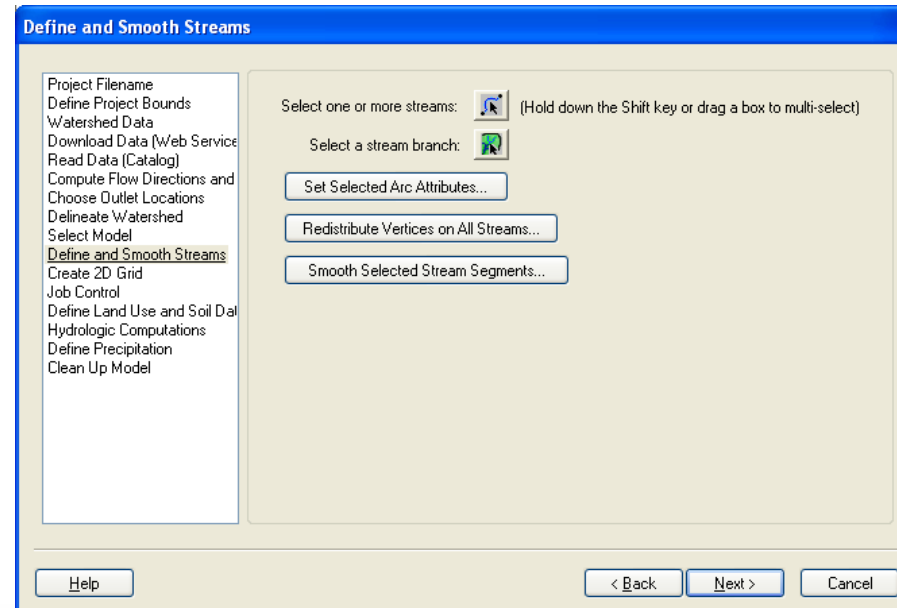


# Setting up 1D Stream Routing for GSSHA Models

- Define channel cross section properties
- Redistribute vertices
- Smooth stream thalwegs
- Turn on channel simulation in the GSSHA job control
- Adjust output control as necessary
- Save and run
- Visualize results



- The first three steps are handled in the “Define and Smooth Streams” step of the hydrologic modeling wizard:
  - Define channel cross section properties
  - Redistribute vertices
  - Smooth stream thalwegs



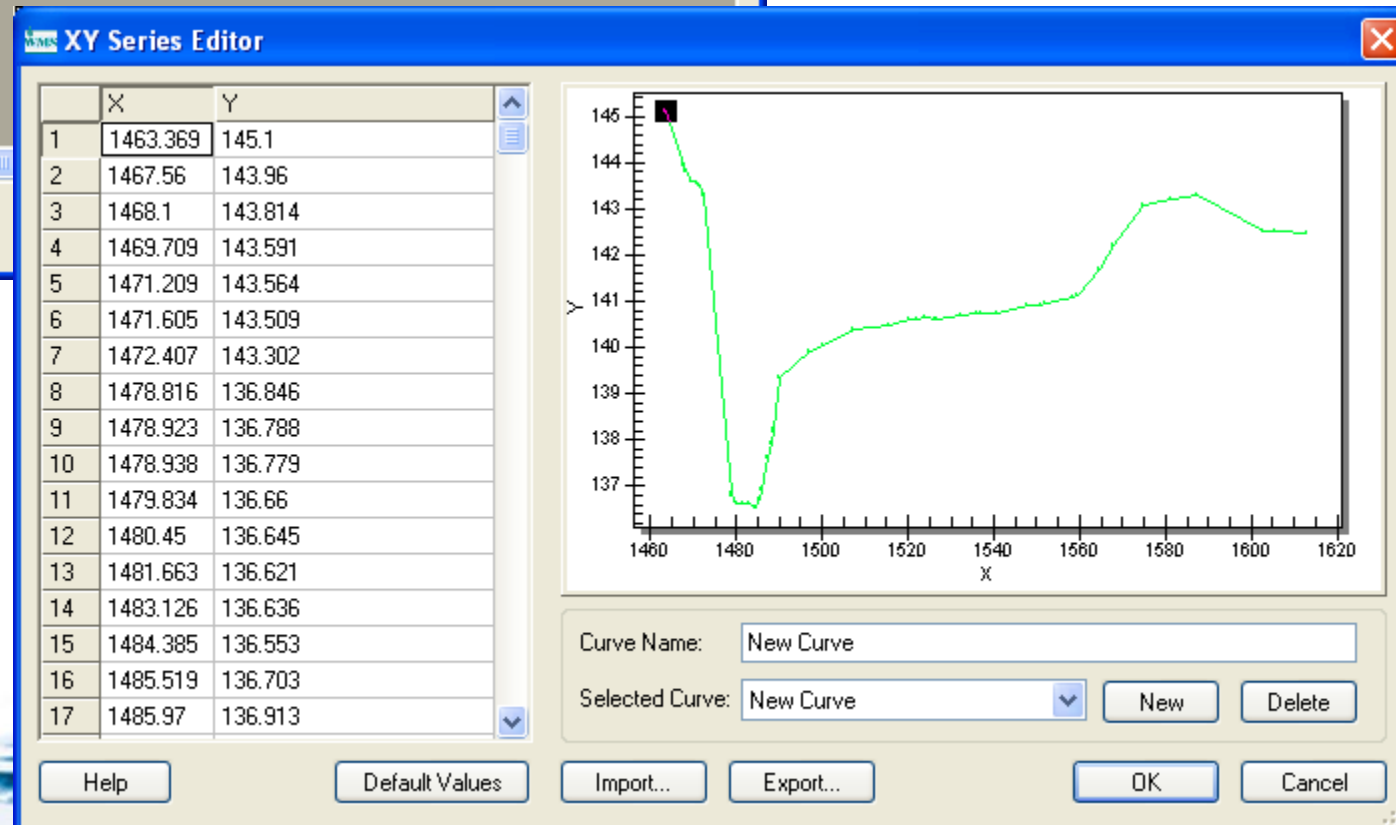
# Define Channel Cross Section Properties

**Properties**

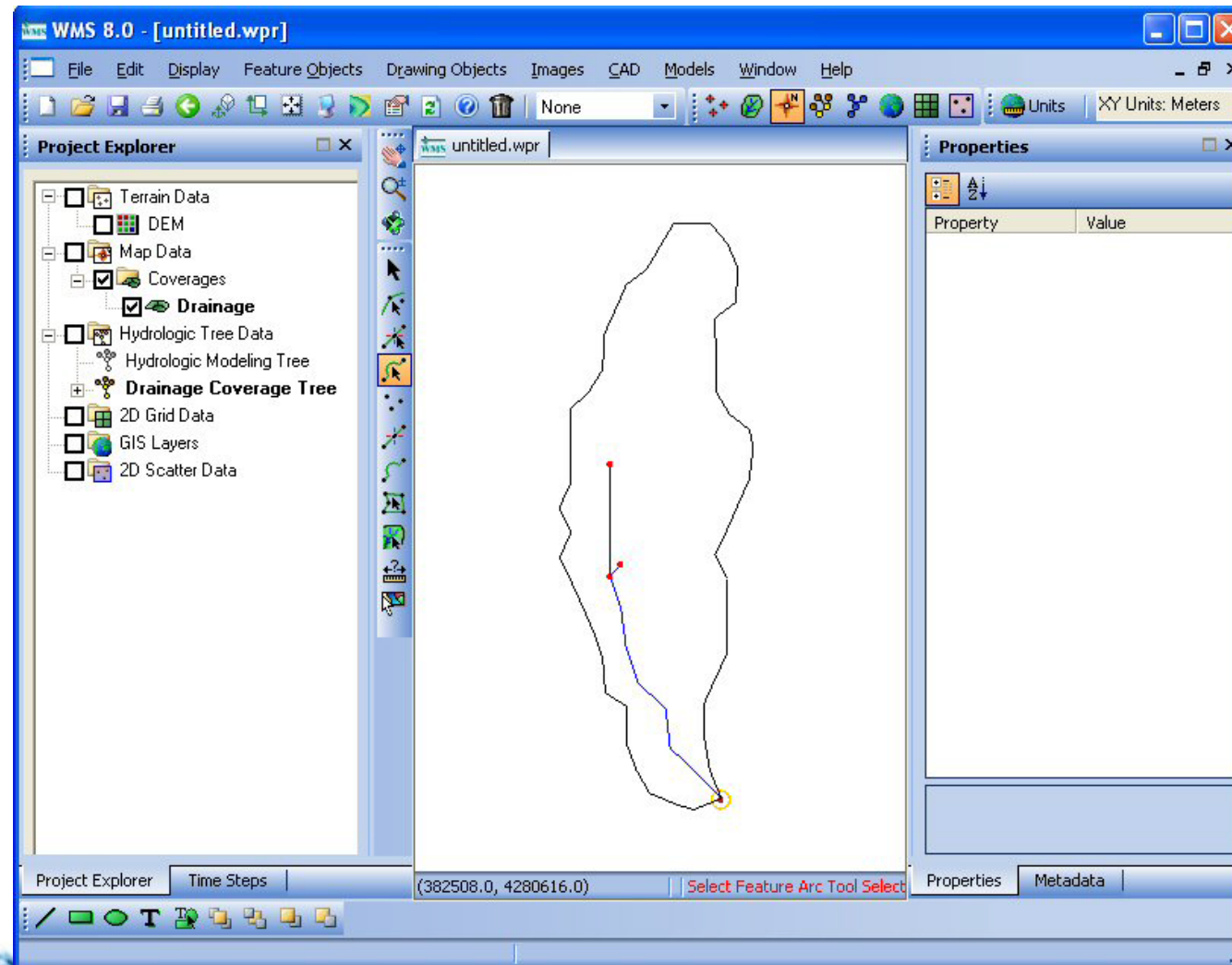
Feature type:  Show:  Filter using: Column:  Value:

ID	Type	Link/Superlink	Manning's n	Depth (m)	Bottom width (m)	Side slope (H:V)
All						
2	Trapezoidal channel	2	0.043	1.0	3.0	1.0

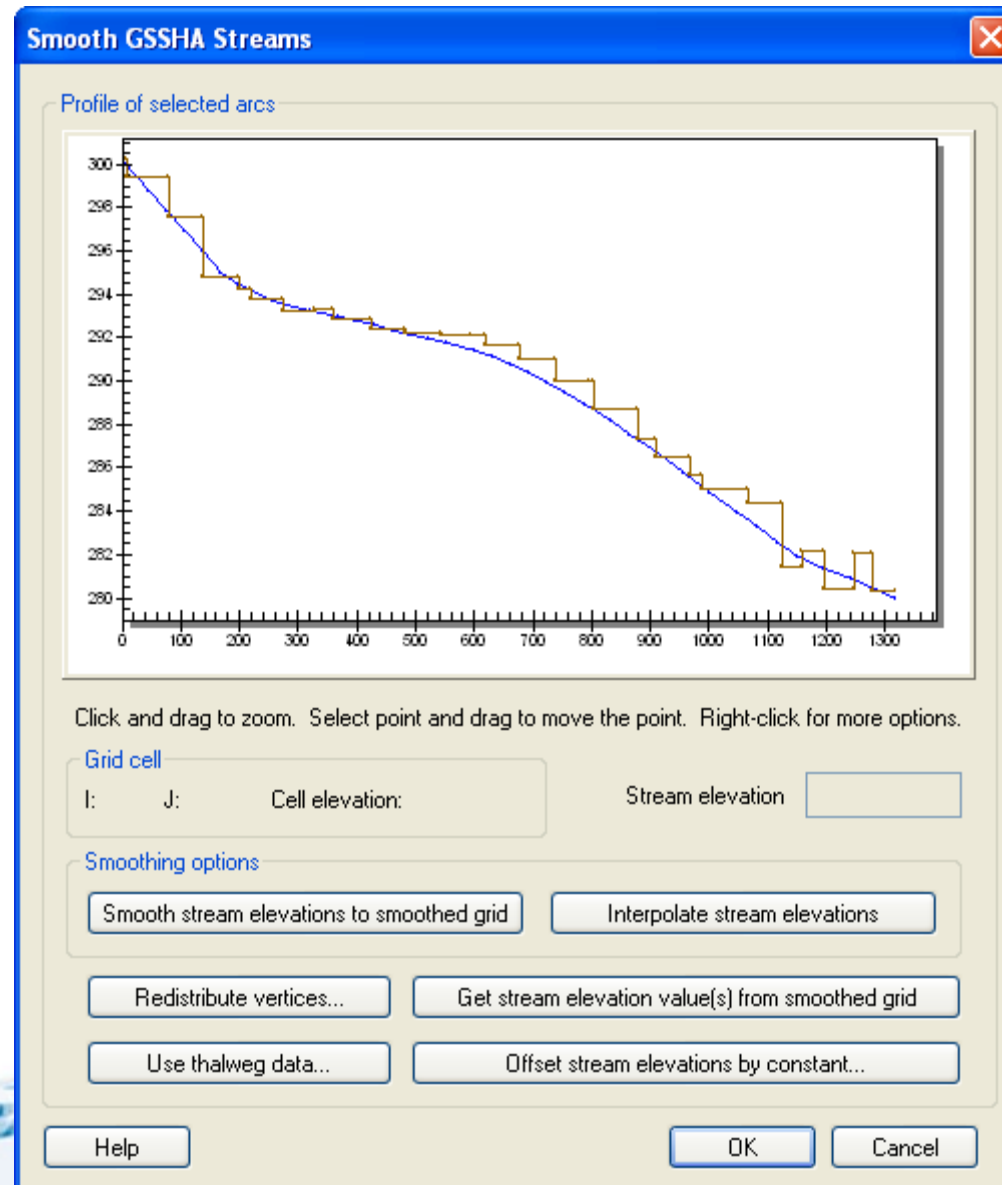
Help...



# Redistribute Vertices



# Smooth Stream Thalwegs





# Turn on Channel Simulation in the Job Control

**GSSHA Job Control Parameters**

**Computation parameters**

Total time (min): 1500

Time step (sec): 10

**Overland flow**

Computation method: Explicit

☐ Interception

☐ Initial depth

☐ Retention depth

☐ Area reduction depth

**Outlet information**

Column: 1

Row: 64

Slope: 0.00100

**Evapotranspiration**

☒ No evaporation

☐ Deardorff method

☐ Penman method

☐ Seasonal resist.

**Infiltration**

☒ No infiltration

☐ Green + Ampt

☐ Green + Ampt with soil moisture redistribution

Sacramento Model...

☐ Richard's infiltration

Edit Parameters...

**Channel routing computation scheme**

☐ No routing

☒ Diffusive wave

☐ MESH

Edit Parameters...

<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

# Adjust Output Control

**GSSHA Output Control**

**Gridded data sets**

Data type: General

- ☐ Distributed rainfall intensity
- ☒ Surface depth
- ☐ Cumulative infiltration depth
- ☒ Infiltration rate
- ☐ Surface soil moisture
- ☐ Groundwater elevations
- ☐ Volume suspended sediment
- ☐ Sediment flux
- ☐ Net sediment transfer

**Link / Node data sets**

- ☒ Channel depth
- ☒ Channel flow
- ☐ Channel velocity (avg)
- ☐ Sediment flux
- ☐ Net sediment transfer
- ☐ Flood (max) depth
- ☐ Water surface elev
- ☐ Pipe flow
- ☐ Pipe node depths
- ☐ Pipe node in/out flow
- ☐ Stream nitrite (NO2-)

**Write frequency**

Write frequency: 30 (min)

**Gridded data set output format**

☐ Binary ☒ ASCII ☐ GRASS ☐ XMDf

**Hydrograph**

Write frequency: 30 (min)

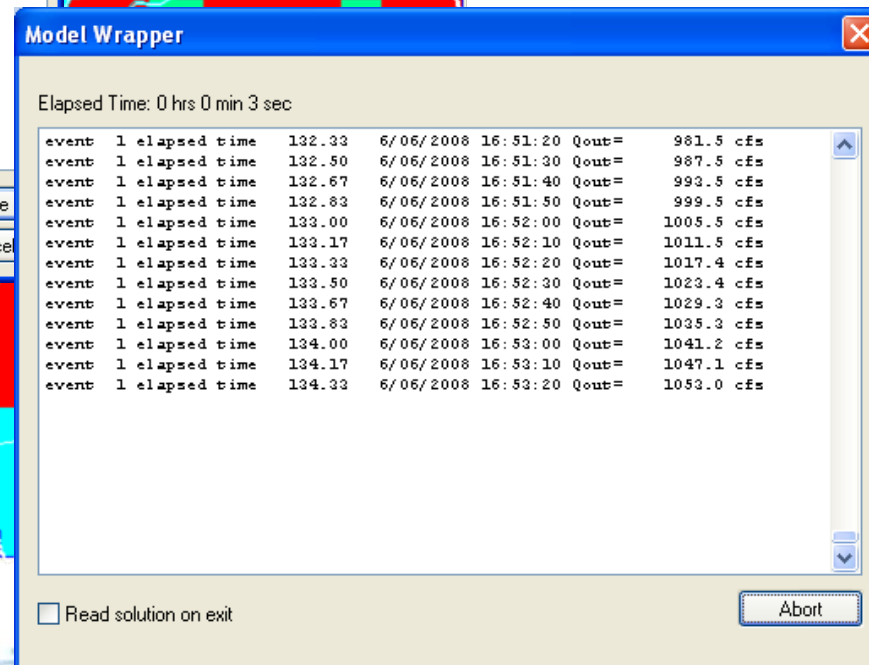
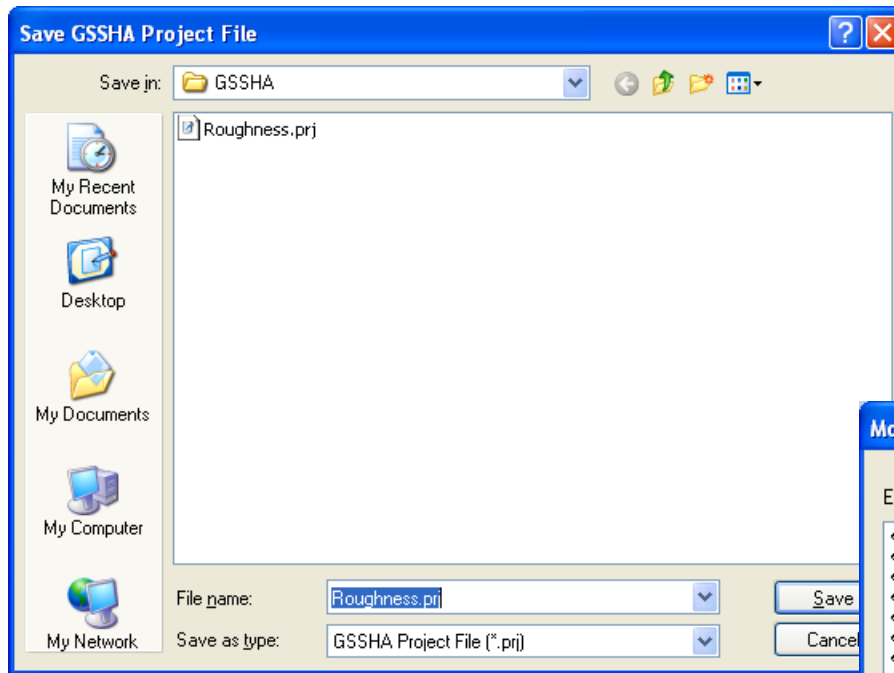
Output units: ☒ Metric (cms) ☐ English (cfs)

**Other**

- ☒ Suppress screen printing
- ☐ Strict Julian dates

Help OK Cancel







# Visualize Results

