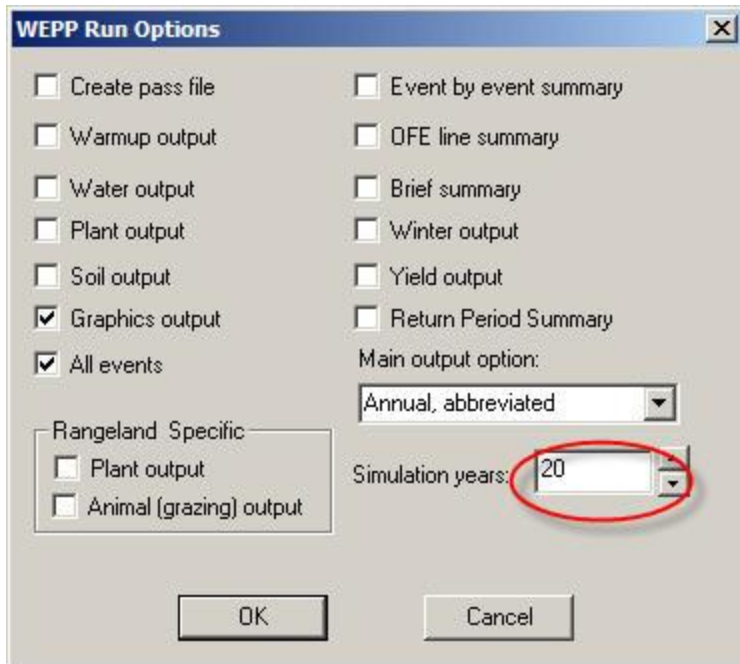This tutorial will show how to work with WEPP slope inputs and look at the effect on WEPP outputs.

First start the default WEPP project (default).
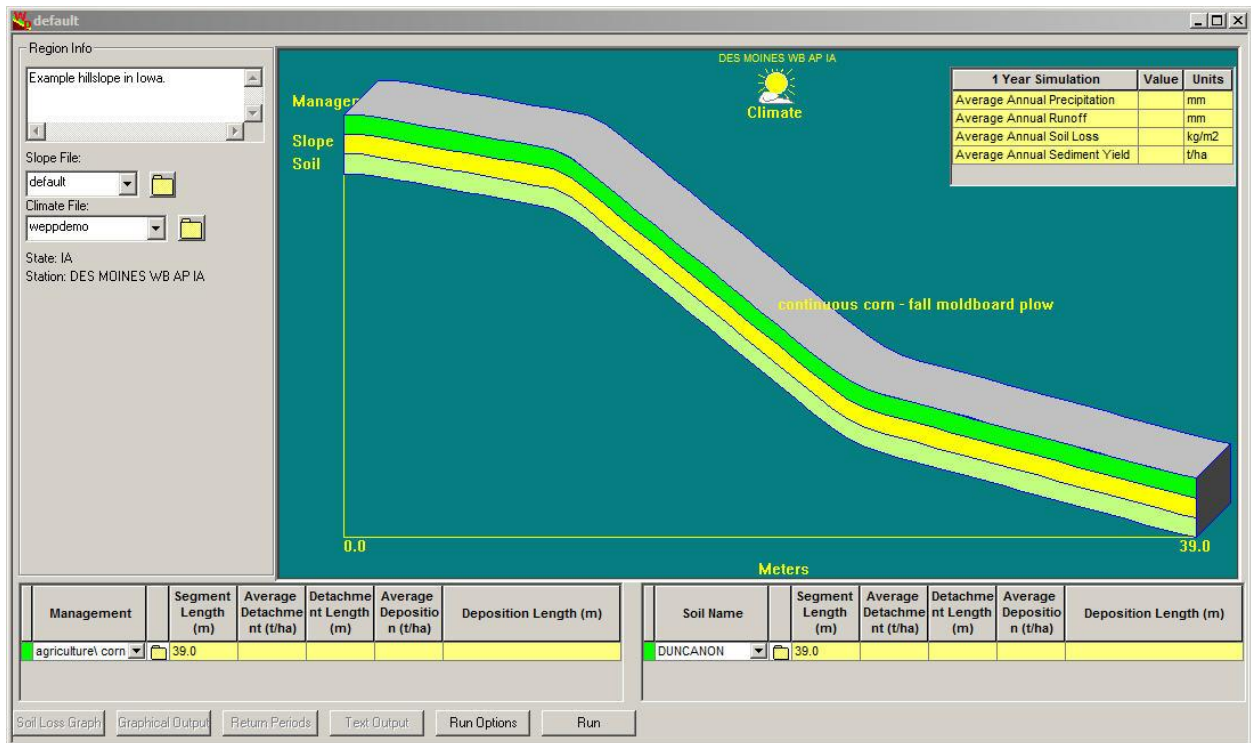
Make an initial baseline run. First change the number of years to run to 20. Click the Run Options button and then fill in the number of years and click OK.

WEPP Run Options

- [ ] Create pass file
- [ ] Warmup output
- [ ] Water output
- [ ] Plant output
- [ ] Soil output
- [x] Graphics output
- [x] All events

- [ ] Event by event summary
- [ ] OFE line summary
- [ ] Brief summary
- [ ] Winter output
- [ ] Yield output
- [ ] Return Period Summary

Main output option:
Annual, abbreviated

Rangeland Specific
- [ ] Plant output
- [ ] Animal (grazing) output

Simulation years: 20

OK   Cancel

Next , click the Run button:

default

Region Info

Example hillslope in Iowa.

Slope File: default
Climate File: weppdemo

State: IA
Station: DES MOINES WB AP IA

DES MOINES WB AP IA

Management
Slope
Soil

Climate

continuous corn - fall moldboard plow

0.0   39.0
Meters

20 Year Simulation	Value	Units
Average Annual Precipitation	829.80	mm
Average Annual Runoff	104.56	mm
Average Annual Soil Loss	1.908	kg/m2
Average Annual Sediment Yield	19.080	t/ha

Management	Segment Length (m)	Average Detachment (t/ha)	Detachment Length (m)	Average Deposition (t/ha)	Deposition Length (m)
agriculture\ corn	39.0	19.08	39.0	0.00	0.0

Soil Name	Segment Length (m)	Average Detachment (t/ha)	Detachment Length (m)	Average Deposition (t/ha)	Deposition Length (m)
DUNCANON	39.0	19.08	39.0	0.00	0.0

Soil Loss Graph   Graphical Output   Return Periods   Text Output   Run Options   Run

For the baseline condition the runoff was 104.56 mm/yr, soil loss 1.908 kg/m^2 and sediment yield 19.080 t/ha.

The slope file is changed by using the slope editor, this can be started in 3 different ways:
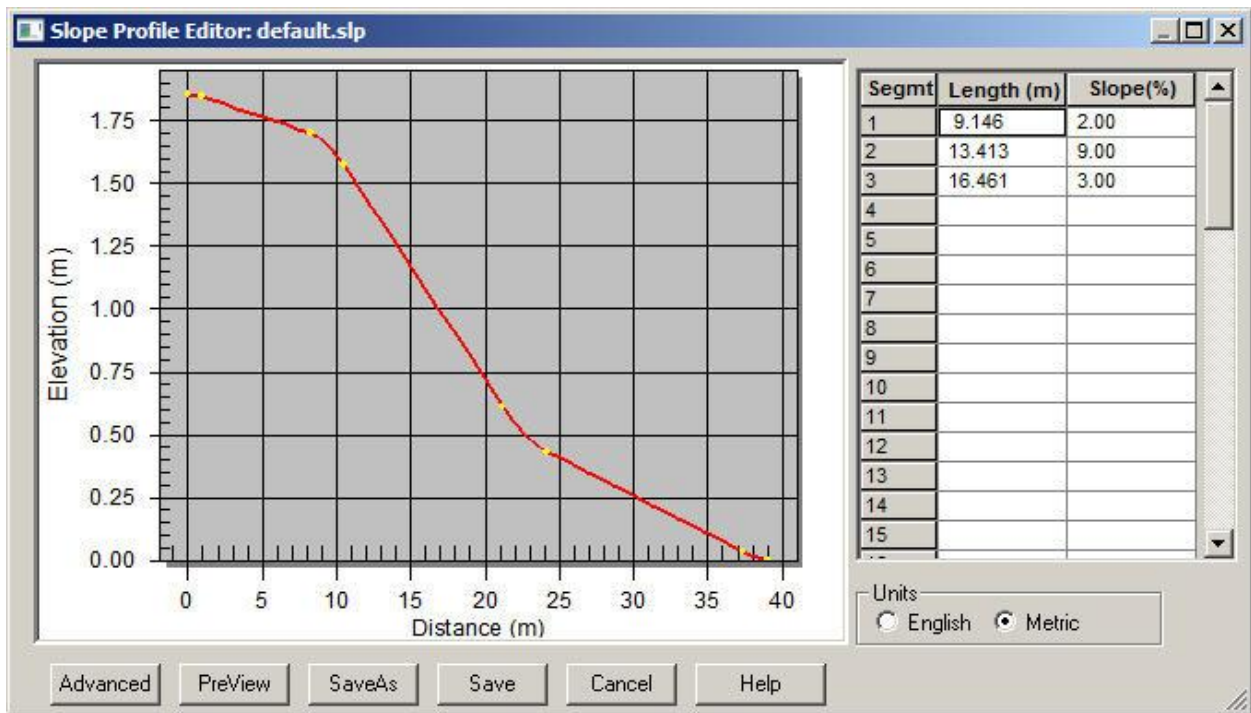
1. Right-click on the middle layer which represents the slope profile steepness:
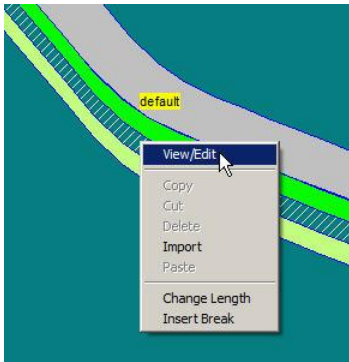
2. Double click the slope layer
3. Select the slope with ta left click and then the view toolbar button:

The slope editor window displays the current slope shape in the parameters used to define the shape.

The yellow dots represent transition zones between slope segments. The default slope shape has 3 segments with slopes of 2%, 9% and 3%. Let's change the slope to a 100m uniform slope of 6%.

First, highlight the segment lines in the table by holding down the shift key and then selecting rows 1-3 and then hit the delete key.

Next, on segment line 1 enter 100 and 6 and click the Preview button. The window should now look like this:
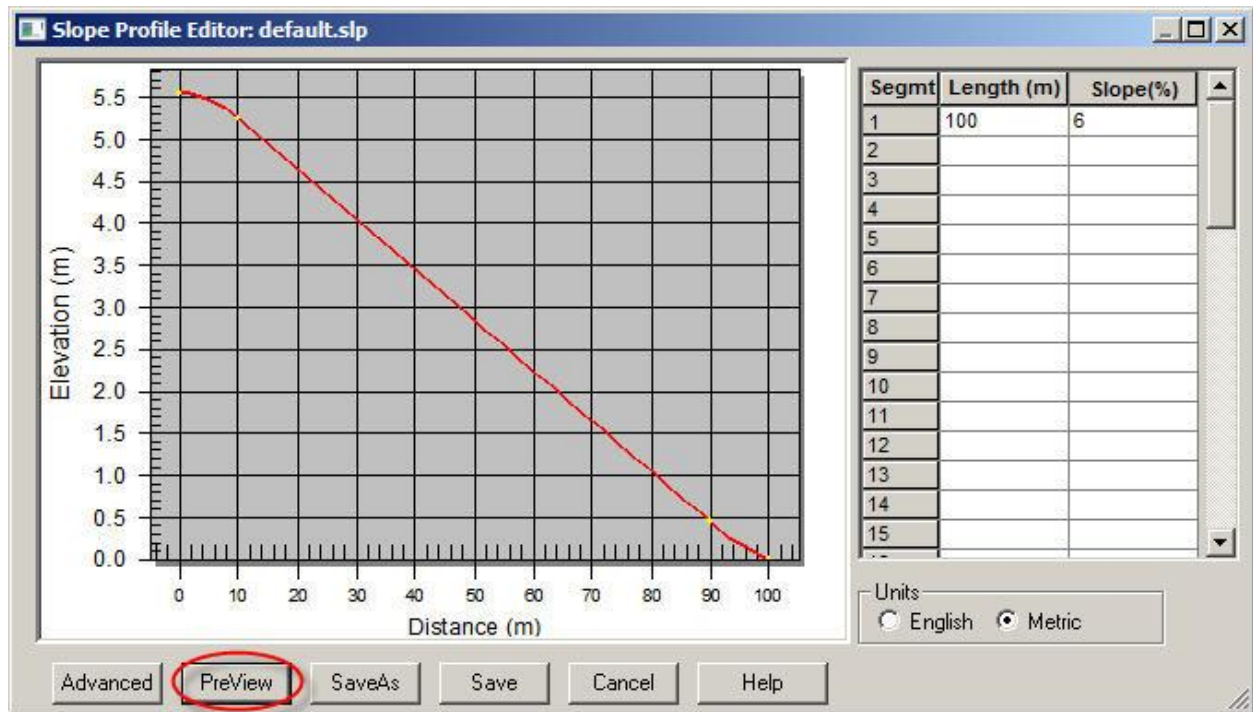
There are still two transition zones at the top and bottom. To make change these make the slope completely uniform click the 'Advanced' button to expand the window:
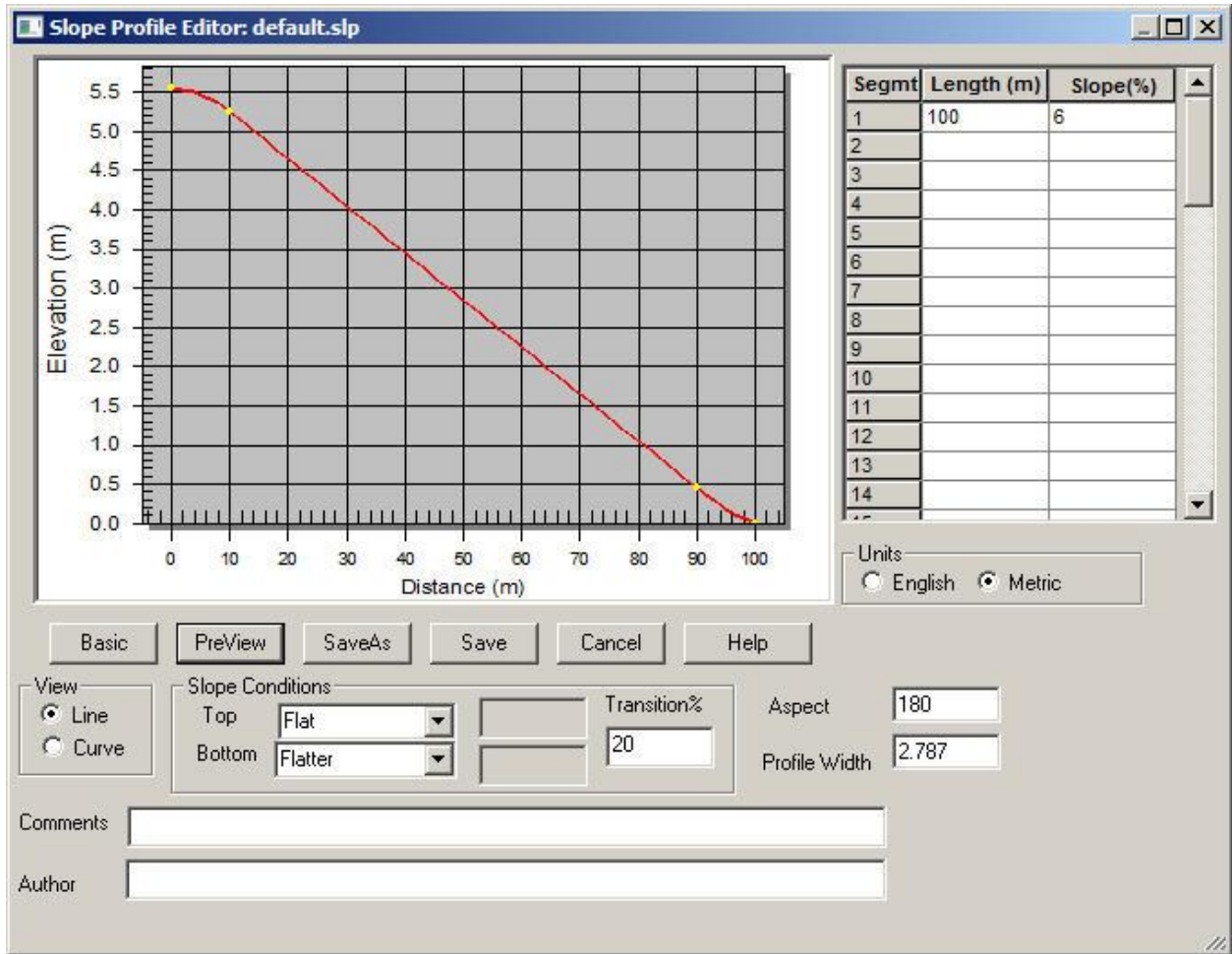
Next, change the slope conditions field to be 'Equal' which means it is equal to the adjacent slope segment. In this example 6%. Then click the 'Preview' button to display the updated slope profile.
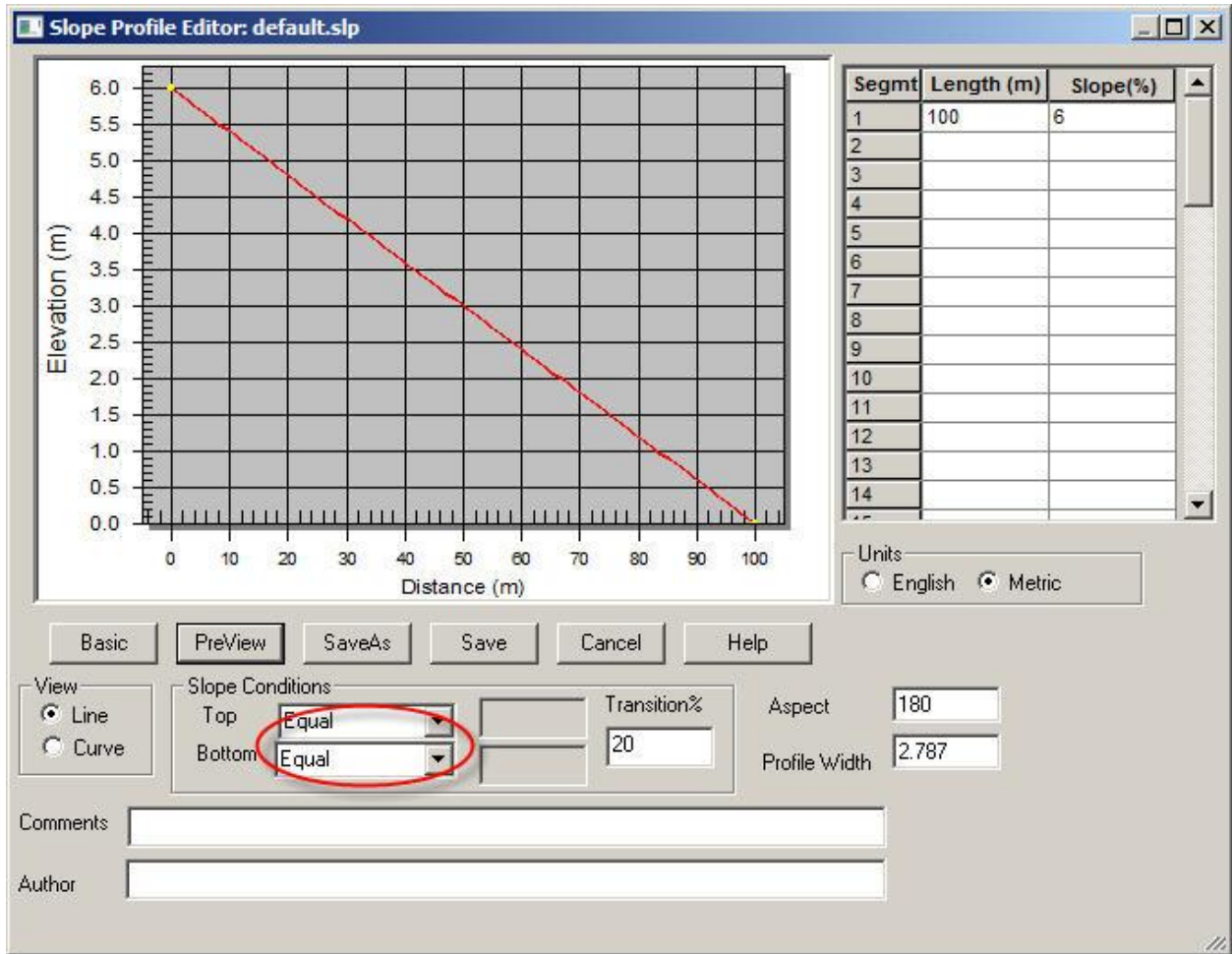
The aspect indicates the direction the slope is facing, in this case 180 is south facing. The parameter that can be set is the profile width. Change the profile width to 20m and the aspect to 90 and then click 'Save As' and name the file 'uniform-100-6.slp':
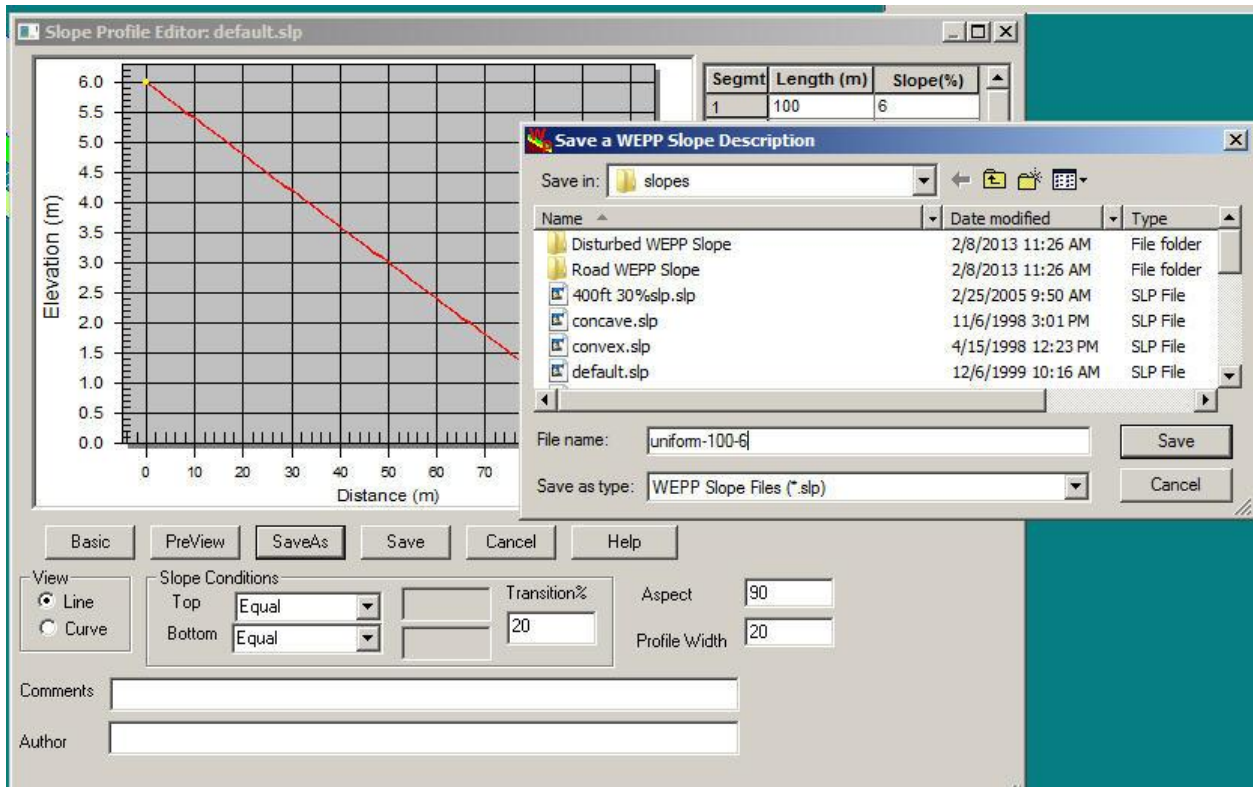
Next click 'OK' and then 'Save' to close the slope editor window.

Next click the Run button on the main window to run WEPP with the new hillslope:
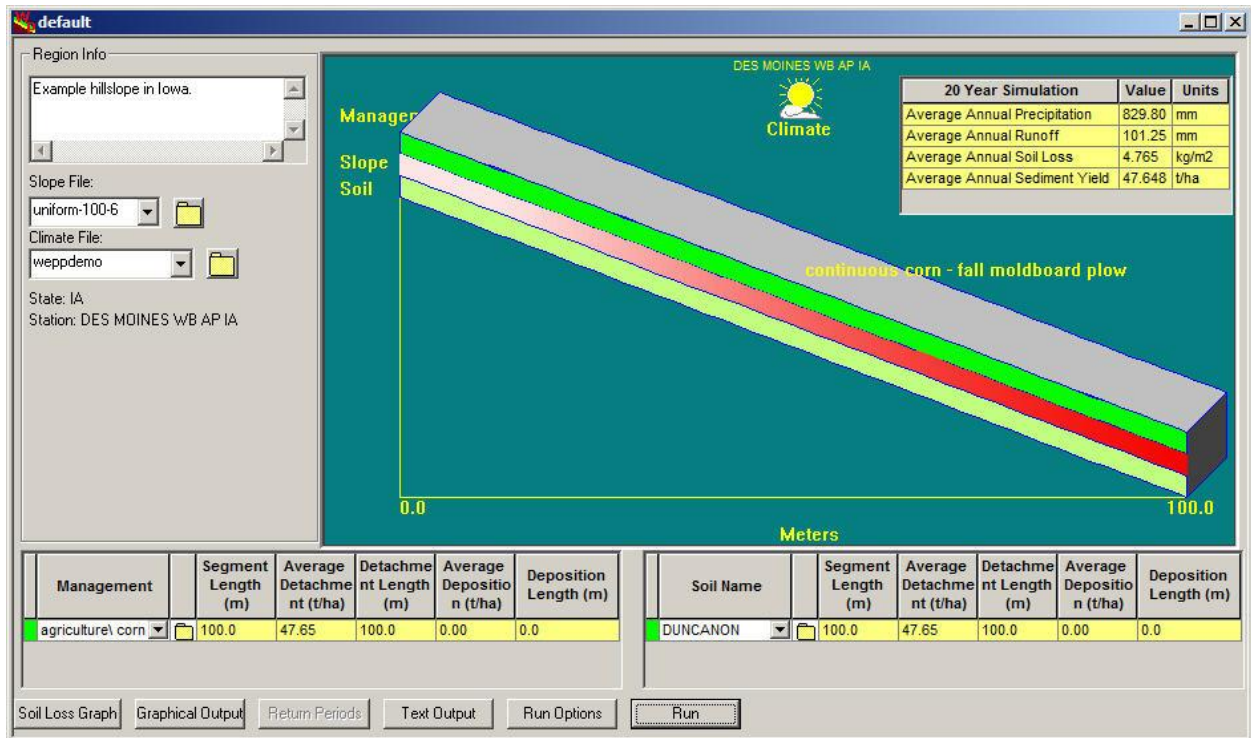
Here is the comparison to the baseline run:

Output Values	Baseline	100m 6% slope
Runoff (mm/yr)	104.56	101.25
Soil Loss (kg/m^2)	1.908	4.765
Sediment Yield (t/ha)	19.08	47.648

Changing the slope length, shape and steepness has signifcanly increased the sediment yield leaving the end of the hillslope.