

## Generate Slope and Aspect from DEM

Both the slope and the aspect of land are important determinants for ecological site classification and natural resource management and use. For example soil classifications often use landscape categories such as 0-5% slope, 5 to 15% slope, and 15 to 45% slope because it influences the pattern of native vegetation. In a similar fashion land with northern aspects produces different plant communities than land with southern aspect. We therefore programmed a module that will calculate both slope and aspect from a Digital Elevation Model (DEM) in ASCII format. **Generate Slope and Aspect from DEM** is available via the **Tools** button on the menu bar or from the button beside the data preparation button, as shown below.

The user inputs the name and location of the DEM file which must be in ASCII format and specifies an output name for both the slope and aspect files. The user also has the choice of the method of calculation. By selecting the Rook's method, the program uses the cells north/south and east/west of the cell being evaluated to determine the slope and aspect. The Queen's method will also use diagonal cells when calculating these parameters for increased accuracy but also a longer processing time. The slope format may be output in several ways: 1) tangent, 2) % gradient, 3) degrees, or 4) radians.

**If information is to be used in the insolation modeler, slope must be calculated in degrees.**

The user also has the option of extrapolating the border cells or assigning them a no data value, usually -9999.

