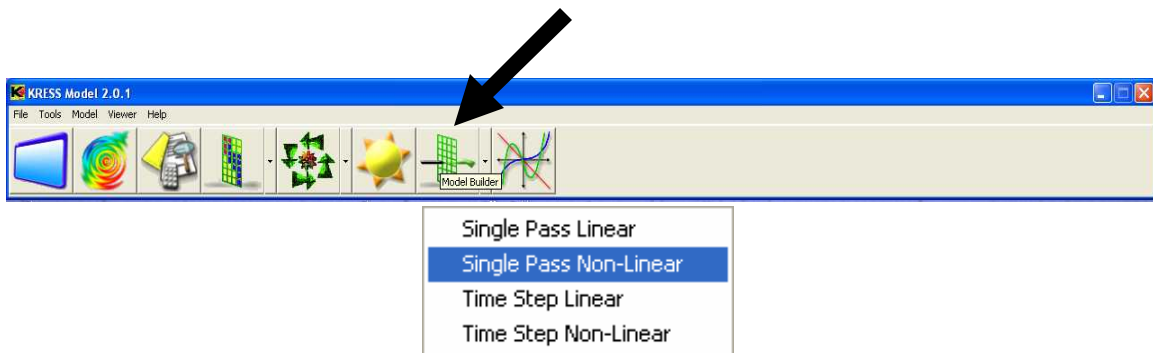
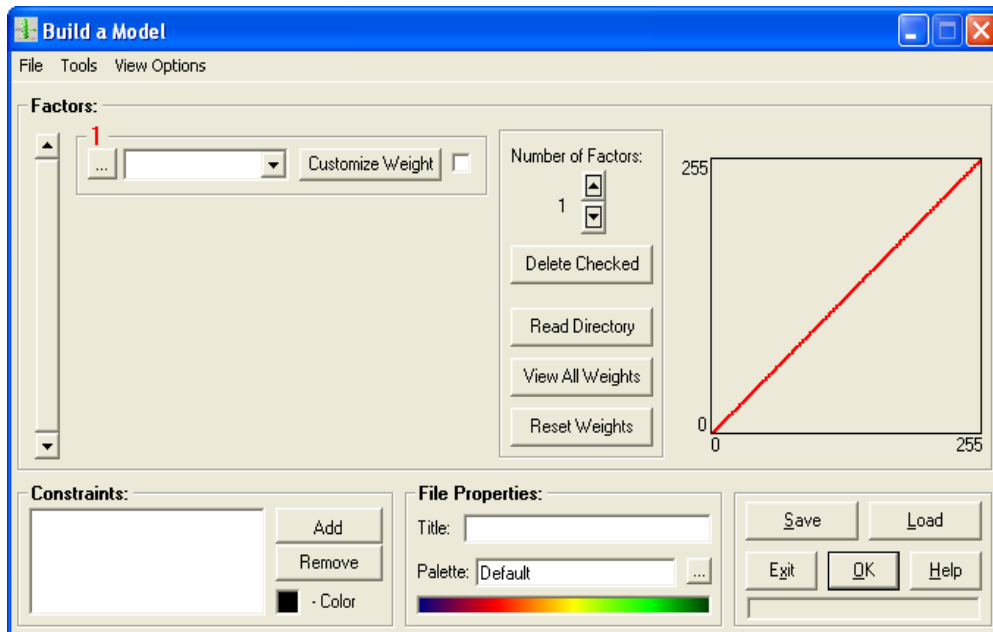


## Single-Pass Non-linear

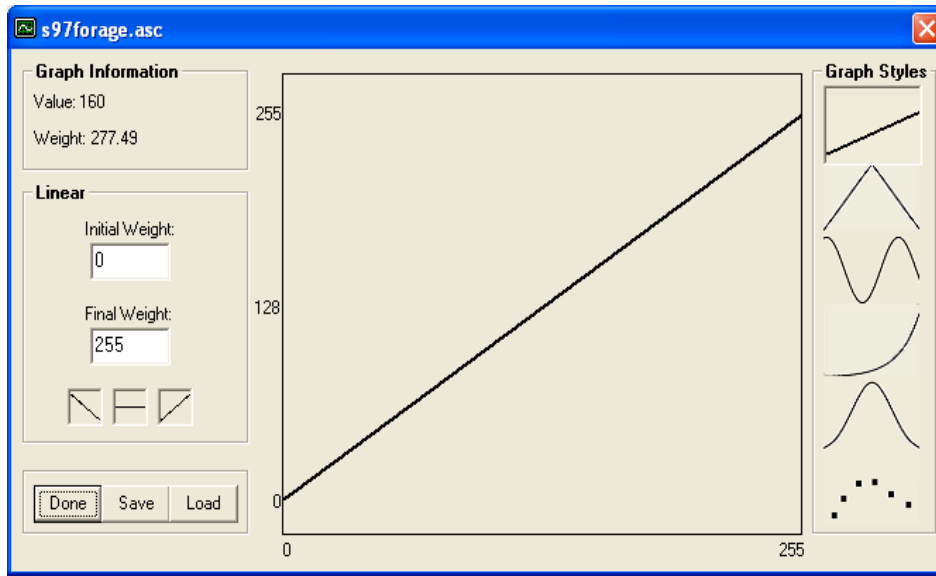
The Single-Pass nonlinear model is available by clicking the models menu, then selecting **New, Single MCE, and Non-Linear**. It can also be reached by pressing F3, or clicking the arrow next to the **Model Builder** icon and selecting **Single Pass Non-Linear**. The Single-Pass Non-Linear form is very similar to the Single-Pass Linear form, so it is suggested that the user read over the previous section of this manual before reading this section.



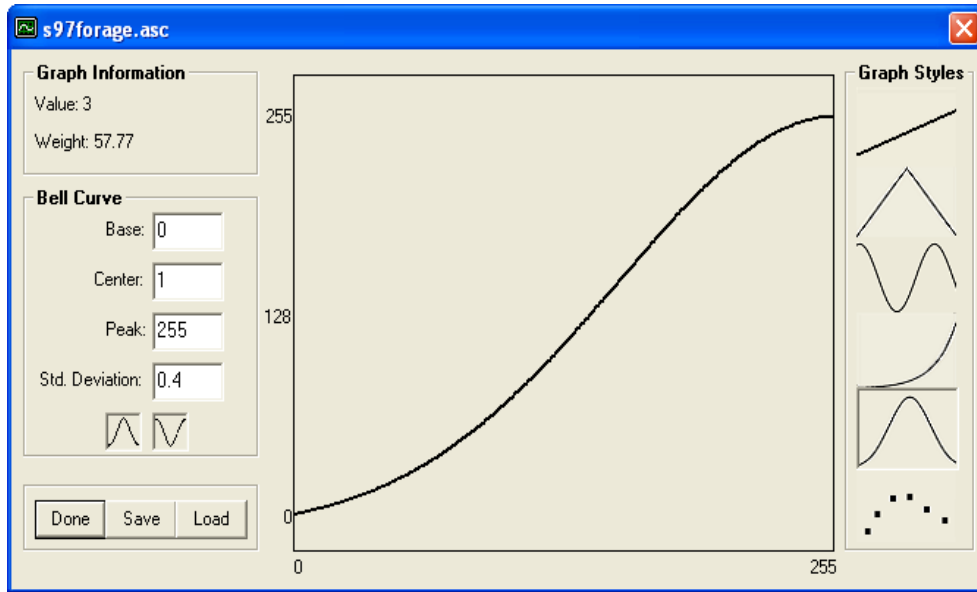
There are two distinct differences in using the Single-Pass Non-Linear form rather than the Single-Pass Linear form. The first is in designating the factors, and the second is having the option to view the factors. The first step is to determine the number of factors and load the filenames, then load and constraints, just like in the Single-Pass linear form. To set the factor weight, click the **Customize Weight** button next to the intended factor.



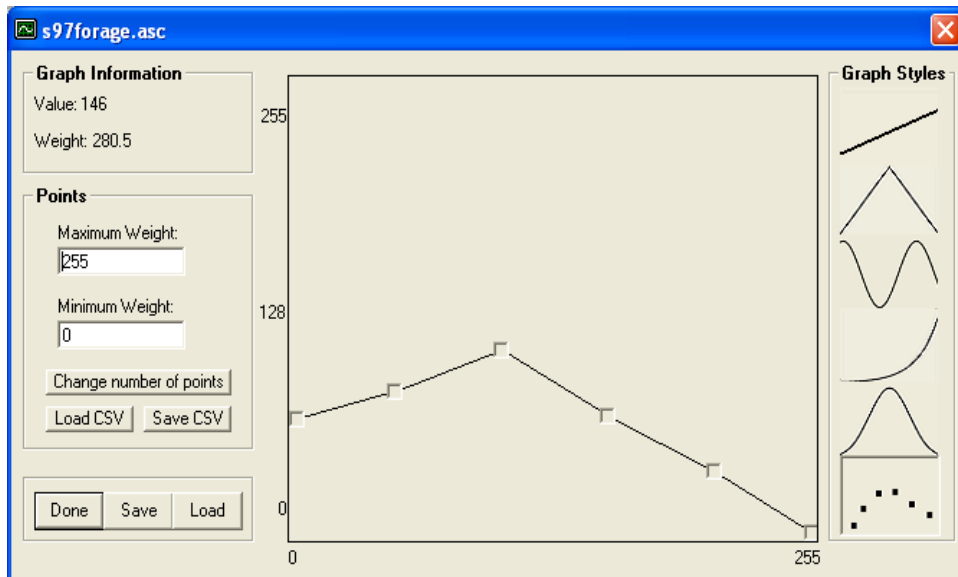
In the form that pops up, the user has the option of choosing a geometric shape or designing a custom shape for the factor weighting. Shapes can be chosen by clicking the appropriate type of shape on the right hand side of the screen (representing linear, triangle, sine curve, exponential, bell curve, and custom) then using the text boxes on the left hand side to give meaningful values to those factors.



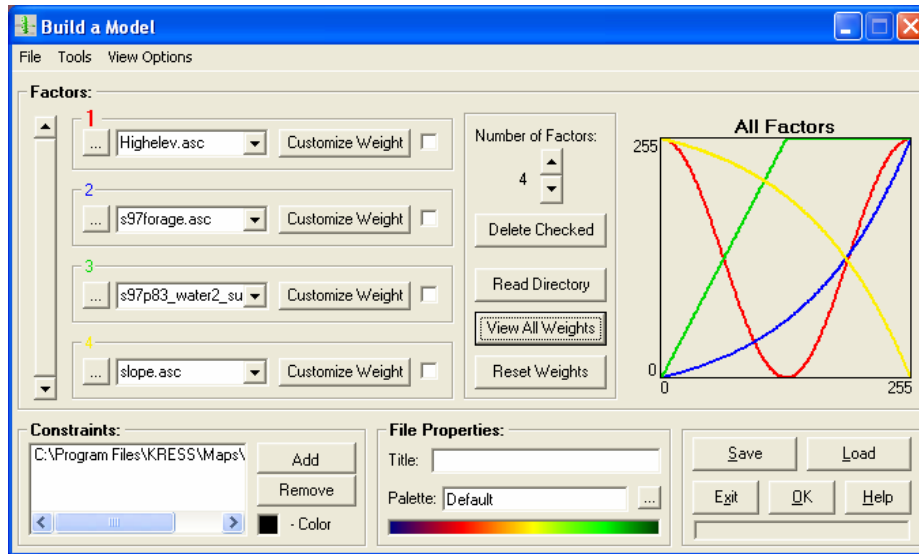
For the linear factor, the program must have initial and final values, and it will draw a straight line between them. For the triangular, the program needs to know the start value, end value, and the value of the vertex. The sine curve requires maximum, minimum, phase, and period values. The exponential option requires initial, final, and growth rate values. The bell curve requires base, center, peak, and standard deviation values.



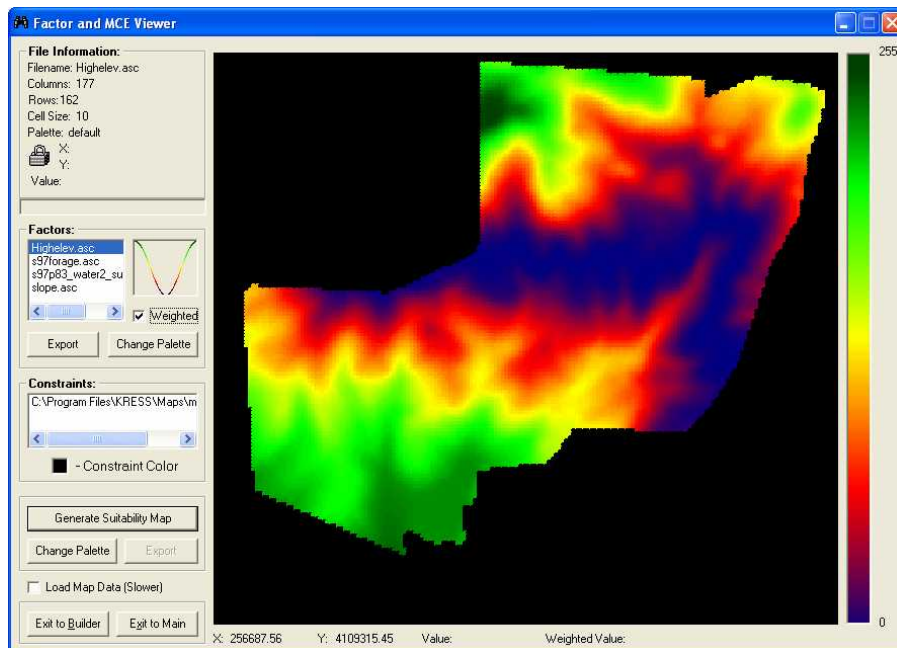
To create a custom curve, it generally works best to get as close as possible using another standard curve, then click the custom curve button. That way the shape the user starts with is as close as possible to what they want. They can then click a point using the mouse, turning it red, then click where on the screen they want that point to be (but it must remain in the same horizontal location, only the vertical location of the point will change). The number of points can be altered by clicking the **Change Number of Points** button. Points can be saved or loaded as CSV files for later use with the same factor weighting. Any of the curves can be saved as a graph information file (GPI) file for later use in the program as well. Click the **Done** button when finished adjusting the factor weight curve.



When one returns to the **Build a Model Screen** each factor will have a different color, and will be displayed on the right hand side of the screen. If you wish to view all the factor weight curves at the same time, select the **View All Weights** button or press **CRTL+A**. This will allow the user to view all the factor weight curves in relationship to each other.



Everything else on this form is the same as the Single-Pass Linear form. Please see that section of the manual for explanation of the other buttons and functions. When ready to generate the suitability map, click the **OK** button.



The **Factor and MCE Viewer** is identical to the Single-Pass Linear viewer with the exception of the Factor viewing capability. The Single-Pass Non-Linear viewer allows the user to view the weighted factor maps by clicking the **Weighted** checkbox under the **Factors** menu. Also, when the **Load Map Data** checkbox is selected, the small display box in the Factors frame will identify where on the weighted curve a point on a factor map lies by identifying it with a black circle.