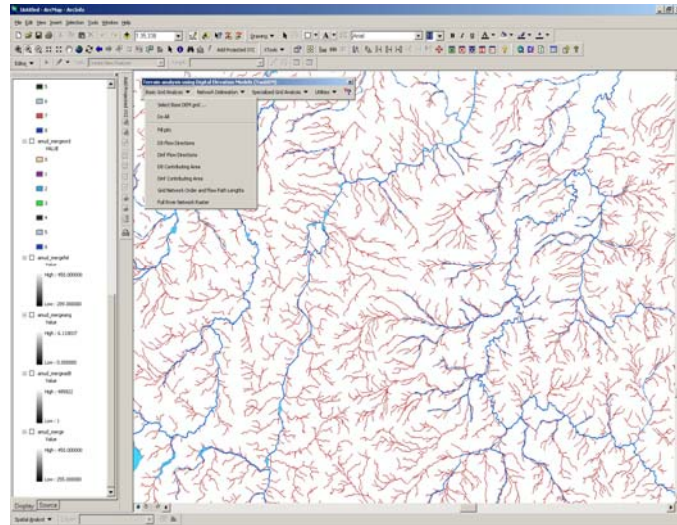


Predictive Drainage Modelling:

Ken W. Durst

The image at right represents a screen shot from software being used to analyse the high resolution LiDAR Digital Elevation Models to predict ephemeral, intermittent, and permanent drainage features on the Romeo Malette Forest.

Practical field testing of the predictive model results on forests with available LiDAR data is indicating a very high level of reliability. The ability to identify previously unmapped streams prior to field layout provides a significant advantage for forest operations in helping to refine block layout, minimize the number of crossings, and reduce approval delays.



Currently the discovery of unmapped streams during operations results in approval delays of one to three (or more) days per crossing and can require a change in operating plan. Estimated cost savings, as a result of this reliable predictive information, range from \$15 000 to \$30 000 per management unit per year.

Tembec planning and operations personnel are using this predictive drainage information in the preparation of the Romeo Malette Forest Contingency Plan and Forest Management Plan and are expecting to dramatically reduce the number of surprises associated with unmapped streams.

A number of Forestry Research Partnership projects have also been examining these predictive models in conjunction with the LiDAR data sets with similar interesting results. Research findings will be discussed during the FRP/CEC Hydrology Workshop on November 28 and 29th and in published papers.