



‘3D-thinking’ designed to keep B.C. fallers safe

By David Carson

Being a tree faller is risky business, especially on the west coast of British Columbia. Steep, rocky terrain combined with towering trees and challenging weather conditions put tree fallers at the highest risk of injury or death of any profession in the province.

In the past, the belief has been that logging is dangerous and you had to accept that there were going to be injuries and fatalities. “That’s the culture we’re trying to shift away from,” says Gerard Messier, manager of training and program development for the BC Forest Safety Council.

In 2005, the B.C. forest industry suffered a staggering 43 fatalities. “At that point,” explains Messier, “the forestry companies, government, and WorkSafeBC came together and said, ‘This is unacceptable. What are we going to do to prevent these fatalities from happening?’” The result was the formation of the

BC Forest Safety Council, which works with industry to reduce the number of fatalities and serious injuries in our forests.

As Jenny Colman, human factors specialist with WorkSafeBC, points out, “the forest has numerous risks. Human performance has its limits – we can’t see it all and hear it all, which can pose a huge number of risks to the fallers. The risks around them are constantly changing, even as they’re cutting.”

But what if there were a way to better identify hazards visually in the forest and improve faller safety? Last year, the newly formed Coastal Harvest Advisory Group – consisting of members from Interfor, Western Forest Products, Island Timberlands, TimberWest, BC Timber Sales, the Truck Loggers Association, and the United Steel Workers Union – made a series of recommendations to do just that.

◀ Kwantlen Polytechnic University psychologist Kevin Hamilton and his team have discovered that awareness of “degraded imagery” can vastly reduce injuries for forestry workers.

One of these recommendations was to incorporate “three-dimensional degraded imagery” into faller training, drawing on research from Kwantlen Polytechnic University psychologist Dr. Kevin Hamilton and his graduate student Niloufar Saffari. Simply put, a 3D degraded image is a photograph that is viewed three dimensionally and manipulated to incorporate some of the environmental challenges that coastal fallers experience. It has been used successfully in the U.S. in other industries, such as in the military and in mining.

“Degraded imagery can include a lot of things,” Hamilton says. “In a forest, it includes lighting, shadows, or something obscuring the view of something else. The weather can also obscure everything, which is why we decided to degrade the images with meteorological conditions.”

Using a pocket-sized digital 3D camera, Hamilton and Saffari were able to take hundreds of photos in areas being harvested. In a simulated environment, their research found that fallers were able to identify considerably more hazards when looking at 3D, versus 2D, images. To create the degraded aspect, Hamilton found another Kwantlen student who used PhotoShop™ to layer haze, shadows, dust, and cloud to varying degrees of intensity into the 3D pictures of the cutting sites. The digital photos can then be uploaded and aggregated into a library to be shared and distributed by industry.

“You’re training fallers to visually pick up on the little pieces of the bigger picture,” Messier says. “There are so many things for fallers to consider. The whole goal of the 3D degraded imagery is to train them better up front, and to give some tips and tricks to experienced fallers on identifying hazards.”

By year’s end, the advisory group aims to develop a 3D degraded image module for new faller training and a workshop resource for experienced fallers. “As far as I know,” Messier says, “this would be the first time 3D degraded imagery has been incorporated into training for the B.C. forest industry.”

For more information on this project, read Hamilton’s and Saffari’s report, submitted to WorkSafeBC in August 2013 (www2.worksafebc.com/pdfs/forestry/tree_falling_degraded_visual_imagery.pdf).



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