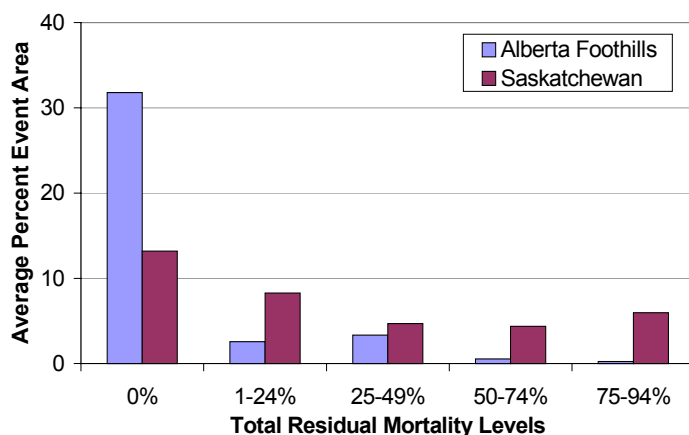


## Residual Survival Levels: Alberta Foothills vs. Saskatchewan

We already know from Quicknote #41 that wildfires in Saskatchewan and Alberta Foothills have similar levels of total residuals (island remnants + matrix remnants). However, survival levels of those residuals for each landscape are fairly distinctive.

**Wildfire Residual Mortality Levels for Alberta Foothills and Saskatchewan**



Out of a possible 38% by area in residuals in the average Alberta Foothills wildfire, over 31% survive intact. Only a fraction (0.8%) of the area of Foothills wildfire events is in residuals with more than 50% mortality. In contrast, of the 36% of the area in residuals in the average Saskatchewan wildfire, only 13% survives intact, compared to 11% that survives in residuals with greater than 50% mortality (see adjacent Figure).

In other words, Alberta Foothills wildfires tend leave a more obvious burn pattern of either entirely burnt or entirely unburnt vegetation, while Saskatchewan wildfires tend to be more transitional in severity.

This suggests that wildfires in the Alberta Foothills tend to be more spatially abrupt; harder edges, and thus more patchy. Recall that Quicknote #43 concluded that Alberta Foothills wildfires had significantly more disturbed patches relative to Saskatchewan wildfires.

But why would wildfires in the Alberta Foothills be so much less likely to have partially burnt areas? One possible explanation is the difference in fuel types. Saskatchewan tends to have a far greater proportion of (hardwood and softwood) mixed stands and a moderate proportion of non-treed wet areas. The Alberta Foothills landscape is dominated by (more flammable) dense pine and spruce. Saskatchewan also has more subtle terrain compared to the Alberta Foothills. As one can imagine, significant topographic features will influence fire movement.

Another possible explanation is differences in fire weather. As already discussed in Quicknote #43, the weather may be more likely to undergo sudden and significant shifts in the Alberta Foothills, which may translate into (more) sudden changes in fire behaviour – which may manifest itself as a patchy burn pattern.

On a final note, consider that if one adopted a more conservative definition of a residual, the residual levels of the two landscapes would be significantly different. For example, by ignoring any areas with greater than 50% mortality, Alberta Foothills wildfire events would still average 37% residuals by area, but now the average Saskatchewan wildfire will only have 26% residuals by area. While there is no *right* way to conduct or summarize natural pattern research, there are clearly management-related consequences of those choices.

*Many thanks to Mistik Management Ltd., the Saskatchewan Forest Centre, and Saskatchewan Environment for the use of their data for this Quicknote.*

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