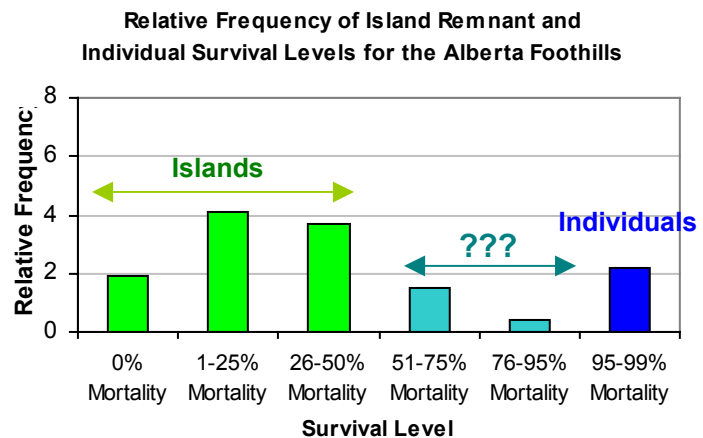


Surviving as an Individual?

Barely. The vast majority of the area of the Virginia Hills fire of 1998 has no surviving trees *that are not associated with island or matrix remnants*. In fact, only about 2% of the disturbed area of the Virginia Hills fire contains individual survivors. As a point of reference, recall from Quicknote #18 that island remnants account for an average of 12% of the disturbed area of historic fires in west-central Alberta.

But how does one differentiate *individuals* from either low-density, or very small *islands*? There are no definitive rules. Recall from Quicknote #19 that the lowest survival class of islands in the FMF database is only 6-25%, which means that *individuals* are found below the 6% survival threshold. This threshold was based largely on aerial photo interpretation capabilities, so it is simple enough to modify if one has all of the relevant data. For instance, one may choose to use 50% mortality as the line between *islands* and *individuals*, in which case the contribution of islands would decrease to about 10% by area, and individuals would account for 4% by area. The adjacent figure shows the relevant areal contributions of the different survival classes of islands (from Quicknote #19) together with the data on individuals from the Virginia Hills fire.



The same argument could be made for the inclusion of tiny clusters of surviving trees as *islands* as opposed to *individuals*. The FMF data used a lower size limit of about 0.01 ha, or 10 meters square for islands. If one chose a new threshold of, say 25 meters square to represent islands, this would account for about 8% of the total number of islands in our dataset, but only a fraction of a percentage of the total area in islands.

In the end, we have to be careful not to let arbitrary classifications obscure the relevance of the natural patterns revealed. Regardless of how we might define different types of residuals, the fact is that the majority of the area of forest fires in west-central Alberta experience 100% mortality. There is no evidence to suggest that residuals here survive uniformly, or even randomly, spatially across a burn. Simply put, residuals - *of all types* - tend to cluster in space.

This is a significant finding. It means that although residual classifications can be chosen arbitrarily, they must be defined very specifically, and applied consistently. It also means that residuals are best represented by areal calculations. For example, the statement “the fire had 10% survival” may be accurate, but misleading. A more precise statement would be “residual areas (which would include all levels of survival) account for 10% of the fire area”.