

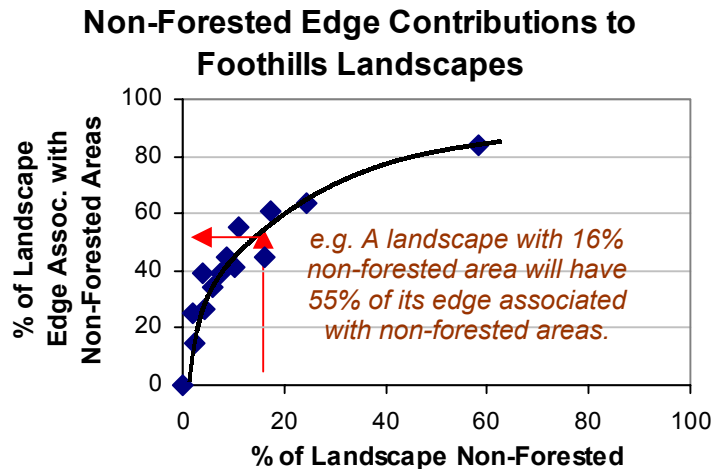
FMF Natural Disturbance Program Research

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Are All Edges Created Equal?

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In order to help us describe and understand landscapes, we group similar types and sizes of vegetation into “patches”. One of the more common ways of evaluating a landscape is through the amount and/or density of “edges” - the boundary zones between these patches. Edges can affect the flow of water, light, nutrients, and wildlife from one patch to another, and may even serve as unique habitat. The edge density of a landscape is easy to calculate, and we know more every day about how and where edges affect what species, and in what way. On the other hand, we know very little about landscape edge dynamics.



It is all too easy to think of edges in universal and simple terms; one much the same as another. It has also become common to think of edges in a negative context. In fact, natural landscapes in the Alberta Foothills are almost all dominated by *permanent* edges. If we define the patches in unmanaged landscapes using universal criteria, we find that most of the total edge is due to the boundary between forested and non-forested patches. This is particularly surprising given

that the non-forested portion of a given landscape is only between 3-20% in most cases. In other words, non-forested patches are generating far more edge - proportionally - than expected. The explanation of course is that the shapes of non-forested patches are highly convoluted.

This discovery is very informative. First, it highlights the importance of non-forested areas on our landscapes. We tend to focus on upland, merchantable forest for both research and management, but clearly non-merchantable areas play a significant role in landscape dynamics. Second, it demonstrates that there are different types of edges on landscapes - presumably, with different functions. Third, the consistency of the area-to-edge ratio in the figure suggests that landscapes have intrinsic, predictable, levels of forest-to-forest edges. This information could be used as a landscape-level guide for management or monitoring purposes. And lastly, edge density assessments that do not differentiate between different types of edges don't tell the whole story.