

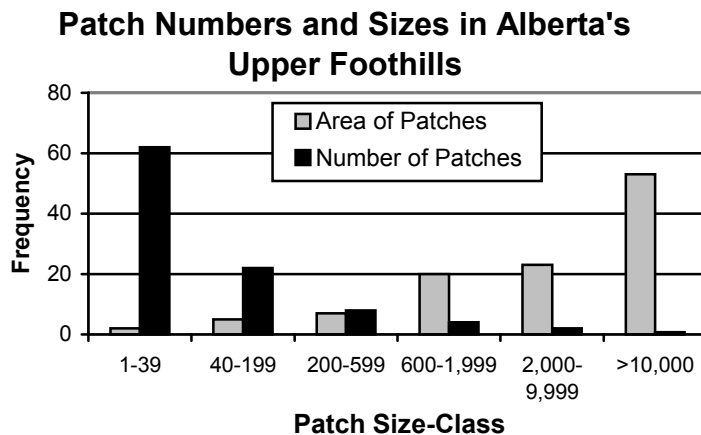
FMF Natural Disturbance Program Research

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The Forest Fire “Event”

By: David W. Andison

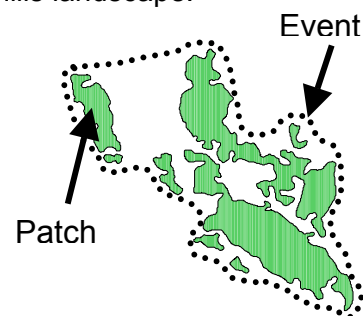
Fires in the boreal forest are commonly, and justifiably, referred to as “events”. They tend to be memorable, occur over a very short period of time, and leave behind a mosaic of burnt and unburnt patches. Understanding the relationship between events and their constituent patches is essential if we are going to successfully integrate natural patterns into forest management.



Here is what we know so far. Most disturbance patches are very small. For instance, in the Upper Foothills, 62% of the young forest patches are less than 40 hectares in size, compared to 0.7% greater than 10,000 hectares. We also know that the large patches account for most of the land. Although few in number, young patches larger than 10,000 hectares cover over 50% of the Upper Foothills landscape.

We can also define an area relationship between patches and fire events. Since most events are composed of a number of disturbance patches, we expect large events to be even more prominent on the landscape. For instance, disturbance *patches* greater than 2,000 hectares occupy 71% of the Upper Foothills landscape, but disturbance *events* greater than 2,000 hectares occupy 90% of the Upper Foothills landscape.

Finally, we know that the undisturbed bits within fire event boundaries include both forested and non-forested patches. In fact, on the Upper Foothills landscape, non-forested patches contribute almost 40% of the undisturbed area within an event, despite the fact that only about 10% of the Upper Foothills landscape is non-forested. Hence, the relationship between disturbance patches and events is greatly influenced the number and size of non-forested patches.



As our understanding of natural patterns evolves, so should our response to that new knowledge. We have long been aware that most of the forest fires in the boreal forest are small, and that the largest fires cover most of the land. However, we now understand that fire “events” are clusters of different types and sizes of patches, the nature of which is largely dictated by the landscape context (*i.e.*, non-forested areas). This implies that we have to move beyond simple distributions of patch sizes, to the spatial arrangement of those patches, if we want to capture “natural” patterns.