

# FMF Natural Disturbance Program Research

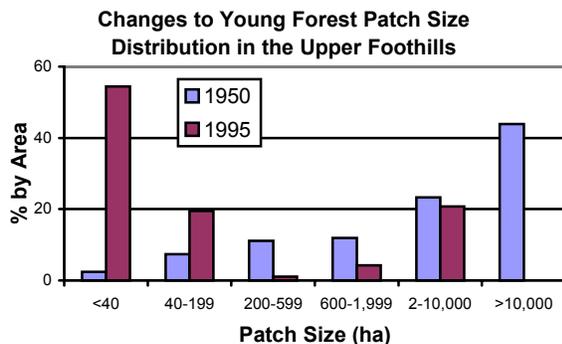
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## What's the Deal with "Fragmentation"?

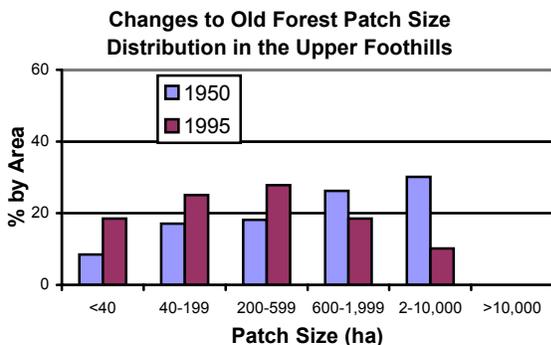
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One of the most prominent changes to disturbance patterns in boreal forests over the last 50 years has been a shift in disturbance sizes. For example, in 1950 - prior to harvesting and fire control activities – about 2/3 of the young forest in the Upper Foothills area of the FMF

was in patches larger than 2,000 hectares, and over 40% larger than 10,000 hectares. In sharp contrast, over half of the young forest on the same landscape in 1995 was in patches less than 40 hectares. In other words, disturbance sizes have declined tremendously over the last 50 years.



the Upper Foothills was in patches larger than 2,000 hectares, compared to only 10% in 1995. The percent of old forest area in patches less than 40 hectares grew from 8% to 18% over the same period.



The patterns discussed here are classic, and logical, indicators of "fragmentation". The shift towards smaller patches of old forest is occurring because our dominant disturbance activity (i.e., harvesting) is limited to older forest. Since we have been harvesting in such small patches, this can only result in a decline in the patch sizes of older forest. However, the results also strongly suggest that harvesting is not the only cultural activity causing fragmentation. The fact that non-forested (i.e., non-commercial) patches are declining in size can only mean that other cultural disturbance activities (such as road or seismic line building, or land clearing or conversion) are having an impact. In the end, although managing the sizes of harvest areas is important, it is our *cumulative* disturbance activities that are creating fragmented forest patterns and habitat.

There are other, related changes to consider as well. For instance, there has also been a shift in the patch size distribution of older forest. In 1950, about 30% of older forest in

A similar, but less striking pattern can be seen in the patch size distribution of non-forested areas. Between 1950 and 1995, the percent of non-forested areas in patches greater than 2,000 hectares dropped from 46% to 37%, and the area in non-forested patches less than 40 hectares increased from 7% to 14%.

