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A Highway 40 North Demonstration Project Update
Putting Natural Disturbance Research to Work

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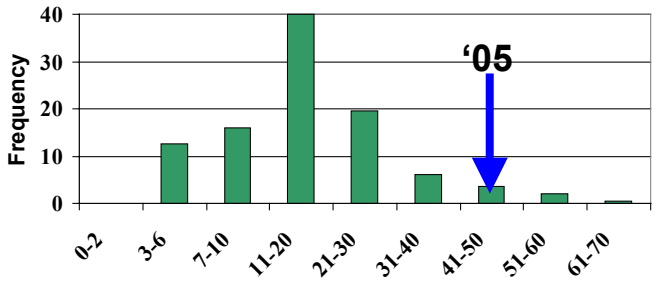
Question #1: How Much Disturbance is "Natural"?

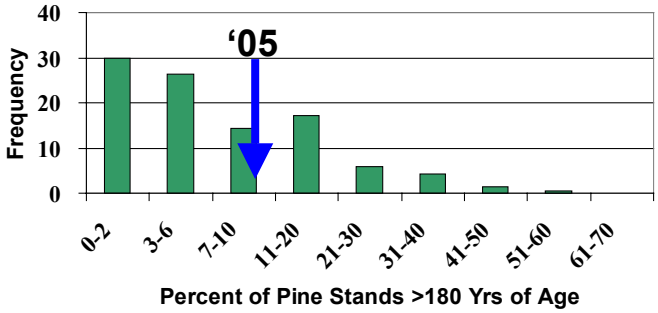
Recall that the first question for each planning decision in the Hwy40 project is "*What would Mother Nature do*?" (Update #5). The first logical decision in that sequence relates to the total area to be disturbed in the study area. However, since the Hwy40 project is an operational plan, the area disturbed is dictated by the respective strategic plans of each partner. Thus, the Hwy40 planning team has no control or influence over how much area will be disturbed (see Update #4).

On the other hand, it is well within the bounds of the project mandate to evaluate the area disturbed from a natural range perspective. Depending on stand characteristics, the disturbed area necessary to meet the collective strategic wood volume objectives of the partners requires 3,500-6,000 ha of harvesting in the next 10 years, plus whatever areas may be burnt via prescriptions. In other words, ***the Hwy40 planning team is obligated by existing strategic plans to allocate 3,500-6,000 ha of disturbance in the study area over the first 10 years.***

Estimated Natural Range of Spruce-Dominated Stands >180 Years of Age in the Subalpine Natural Sub-region



Estimated Natural Range of Pine-Dominated Stands >180 Years of Age in the Upper Foothills Natural Sub-region



How does this area align with the natural range of variation? There are two ways of answering this question. First, recall from Hwy40 Update #7 that the probability of different levels of natural wildfire activity is known. For example, we know that there is almost a 50:50 chance of at least 4,500 ha burning historically in the next 10 years, which is about the average area of our target range. In other words, *the proposed disturbance level is almost exactly the average of the historic level.* So far, so good.

The other way of considering proposed disturbance levels is within the context of the existing landscape. As the adjacent figures demonstrate, the study area currently has high to very high levels of old forest relative to natural conditions. This by no means translates into a requirement for disturbance – FMF research suggests that many large contiguous older patches of forest existed naturally. Furthermore, the biological value of these older areas is well recognized. However, it is also well recognized that large areas of older conifer forest pose an increased risk from natural disturbance agents. In particular, both wildfire and mountain pine beetle currently pose significant threats to not only the study area itself, but forests and habitat well beyond its borders.

In summary, although the first question of "*how much*?" was pre-determined for the Hwy40 planning team by higher-level plans, the comparison of this range to the historical range provided the planning team with useful information. Furthermore, differentiating between the historical probability of disturbance, and the existing landscape conditions was valuable.

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