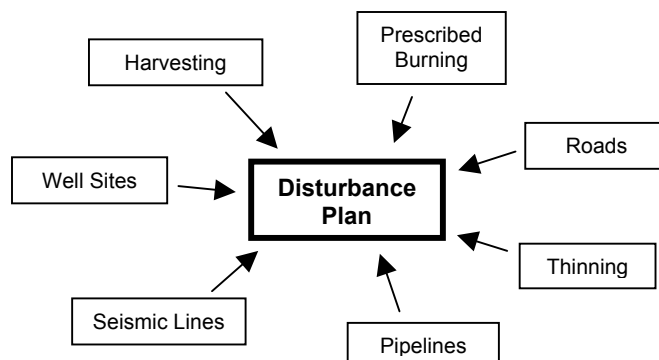


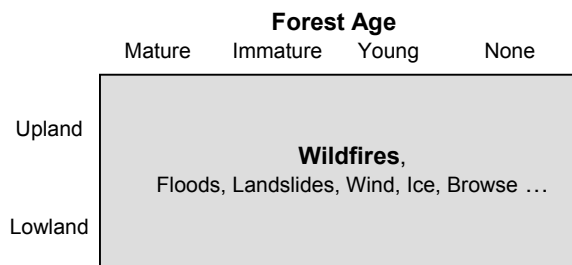
## What is a “Disturbance Plan”?

A *disturbance plan* is the design of location, extent, and timing of *all* planned disturbance agents for a given landscape. Although planning systems for disturbance activities on forested landscapes for forestry, oil and gas, or road-building activities have existed for many years, seldom are these efforts combined into a single plan. The Hwy40 project intends to fully explore this vision.

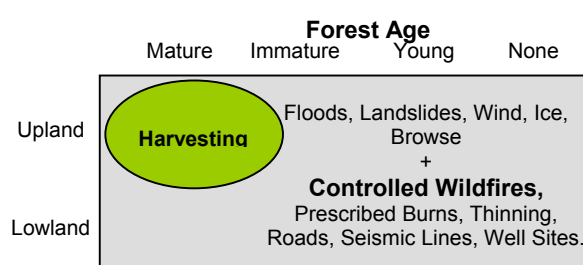
Usually the first, and too often the last, argument over the consideration of natural pattern emulation strategies is the capacity of harvesting activities alone to emulate Mother Nature. Harvesting activities are by definition restricted to merchantable stands, which tend to be mature or over-mature, and in upland positions (*ie*, not in riparian zones or wet areas). In the Alberta foothills, this accounts for about 20-40% of the landscape area at any given time (and this estimate is much lower for the remainder of Alberta). Historical, natural disturbance activities affect 100% of the landscape area (see figure below).



### Historical Disturbance Activities



### Current Disturbance Activities



Yet, our ability to control disturbance activities on forested landscapes extends well beyond harvesting. The location and total length of roads can be designed over time and space, and is even now being controlled. Other mechanical disturbance activities such as thinning are valuable tools as well. We may also choose not to aggressively attack wildfires, although in the Hwy40 area this is not a viable option given the other values at risk (including human life and property, caribou habitat, and timber value).

The greatest challenge we face with the development of a disturbance plan for the Hwy40 area is the integration of the disturbance activities of the oil and gas sector. Since long-term rights to sub-surface resources are not assigned to specific locations, (as they are with timber rights) exploration and development activities for the oil and gas sector in Alberta occur on significantly shorter time-scales than that of timber management activities. Furthermore, there are over 100 companies that may be involved. Within the Hwy40 study area, we have identified seven companies with existing sub-surface leases, and invited each to participate in the disturbance planning process along with the Alberta Department of Energy.

Perhaps the most powerful tool at our disposal for the Hwy40 Demo project is prescribed burning. The potential for PB's to disturb non-merchantable, and particularly non-forested, areas of the Hwy40 landscape is unique. However, we face a significant challenge since fire is not a deterministic tool, and some risk to other values exists, under even the most conservative burn plan scenarios.

In the end, it will be the degree to which we can combine the various disturbance activities by the various partners that will largely determine the success of the Hwy40 project to achieve the objectives.

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