



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

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Not Just Another “Coarse Filter” Study

The ultimate goal of the Hwy40 Demo Project is to:

“Demonstrate the effectiveness of using natural disturbance pattern knowledge as the foundation for effective operational-scale forest management planning”.

In other words, is Mother Nature’s strategy for disturbing forested landscapes a useful template for operational planning? Note that this is fundamentally different than the more common question of whether natural patterns are useful guides for operational-scale forest management planning. For example, *disturbance shape* is obviously a useful coarse-filter guide for operational planning, realized by developing a standardized algorithm for measurement, followed by establishing averages, ranges, or maximums as guides. Hence, shape becomes another “*filter*” through which operational planning options are passed. The Hwy40 project goes beyond *filters* to *process*. We want to know if natural patterns (including shape) provide some guidance for how to configure the planning process as a more defensible activity of sustainable forest management. For example:

- A: What is the natural range of variation (NRV) of disturbance shapes?
(Moderately convoluted)
- B: What is the current range of variation (CRV) of disturbance shapes?
(Simple rectangles, ovals, and lines)
- C: Why is NRV different than CRV?
(Necessity of roads & seismic lines, and simple shapes are easy to plan, install, and regulate,...)
- D: What management objectives would converge with moving towards shape-NRV in this case?
(Access management, reduce caribou risk of wolf predation, reduce habitat fragmentation...)
- E: What management objectives would conflict with moving towards shape-NRV in this case?
(Cost-efficient access to natural resources)
- F: (How) can we move towards NRV from CRV?
(Joint access planning, low-impact seismic, road de-commissioning, vary block shapes,...)
- G: Are there policy or practise implications?
(Planning and regulatory convention, potentially higher planning costs, reduced access,..)
- H: What are the new questions / issues?
(Cost increases, regulatory challenges, ecological impacts of not being within NRV,...)

The idea is that these same questions would apply to virtually all natural patterns – disturbance sizes, event sizes, island area, island locations, and so on. I have over-simplified the example here for the sake of brevity, but it is not difficult to imagine how this new model may 1) progressively build a holistic, powerful, biological defence for planning decisions, 2) distinguish between real and perceived impediments to change, 3) clearly identify conflicts between existing objectives, and 4) generate new and important questions. Note also that the model does not require that CRV must be within NRV – only that NRV directs CRV (as in point F above).

There is little doubt that many natural disturbance patterns are valuable *tools* for operational planners as coarse (biological) filters. The question we pose in the Hwy40 project is whether adopting a natural pattern foundation is valuable as a *template* for operational planning. At first glance, it would seem to at least be more transparent, and more consistent with ecosystem-based management ideals. In any case, it is a question that our partners feel is well worth asking.

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