Healthy Landscapes Program Quicknote #53

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# What Part of the NRV Story are we Missing?

The integration of "natural" (i.e., pre-industrial) range of variation - or NRV, - strategies is now well established in regulations, guidelines, and planning standards across the Canadian forestry sector and beyond. So-called *coarse filter* indicators today include seral-stage levels, disturbance sizes, disturbance residual levels, and woody debris.

However, as discussed in Quicknotes #50, Ecosystem-Based Management (EBM) is a journey, not a specific end point. In the interests of that journey, we need to be continually asking ourselves questions such as: ***What are we missing - that might be relevant?***

Towards an answer, consider the maps below of the cumulative mortality levels from wildfire over three 20 year periods from northern Saskatchewan summarized by 10,000 ha grids. Green cells have no fire activity, and the red cells capture increasing levels of disturbance as darker shades of red. Note that the total level of fire activity in each of the three time periods varies, although the overall patterns are consistent.

Details aside, what do you see? ***Wildfire activity clusters in both time and space!***

The concentration of the green and darkest red cells is unmistakable – and independent of disturbance levels. Even during periods of extreme fire activity where much of the landscape burned (e.g., period 2) there is still a modest proportion of cells with no disturbance.

Period 1   Period 2   Period 3
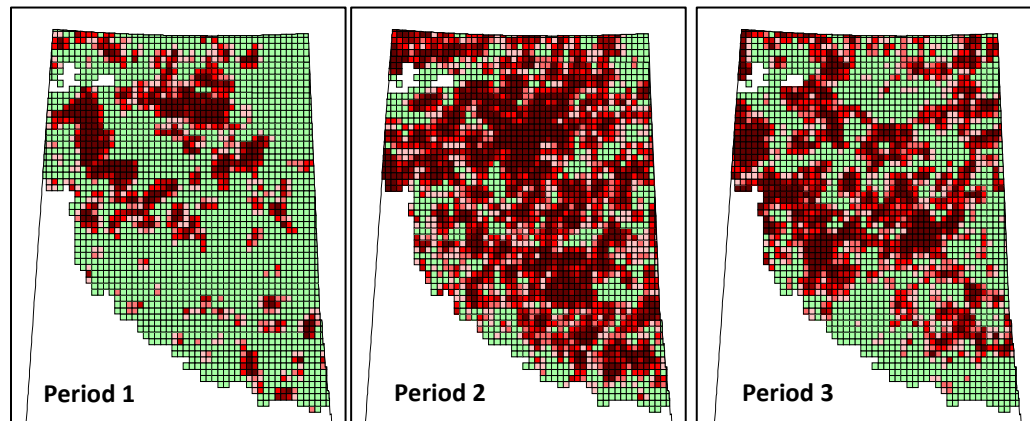
(Why) Is this relevant? First, disturbance clustering is clearly a natural phenomenon, and thus by definition should be captured as a part of a robust NRV strategy in the service of EBM. Second, it is a pattern with some obvious biodiversity implications. For example, the green cells represent significant areas of interior forest, which is a well-documented attribute of high quality habitat for several boreal species. Third, it is a pattern that is easily measured and compared to NRV. And lastly, NRV for this indicator already exists - and is published.

Despite this, there are no jurisdictions in Canada today that capture, track, or require planning to account for patterns at this (intermediate or meso) scale. The potential benefits of doing so include the ability to track interior / intact forest, edge density, landscape scale diversity, resilience (to climate change), wildfire risk, and woodland caribou habitat – all relevant areas of concern today.

The lack of a robust and NRV defendable coarse filter indicator at intermediate scales is a notable gap in our EBM toolkit. One or more measures of meso-scale patterns is a prime candidate to become the next most important coarse-filter indicator as part of our EBM journey.