

SEPTEMBER 23, 2019

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Hello Tom

This letter presents an updated equivalent clearcut area (ECA) analysis for Dumont Creek based on the more accurate watershed boundary that you provided me with earlier this month. In the 2016 assessment I estimated that about 33% of the Dumont Creek area was in a hydrologically disturbed condition. Of this, about 67 hectares of the previously delineated 623 hectare watershed (11%), situated in the upper headwater region, was in a fully cleared (disturbed) condition due to a pine beetle epidemic and harvesting.

I have updated this estimate using the 2018 Provincial VRI database, orthophoto imagery and a September 2019 Satellite image downloaded from the Sentinel Hub Playground and themed to enhance vegetation condition (Figure 1).

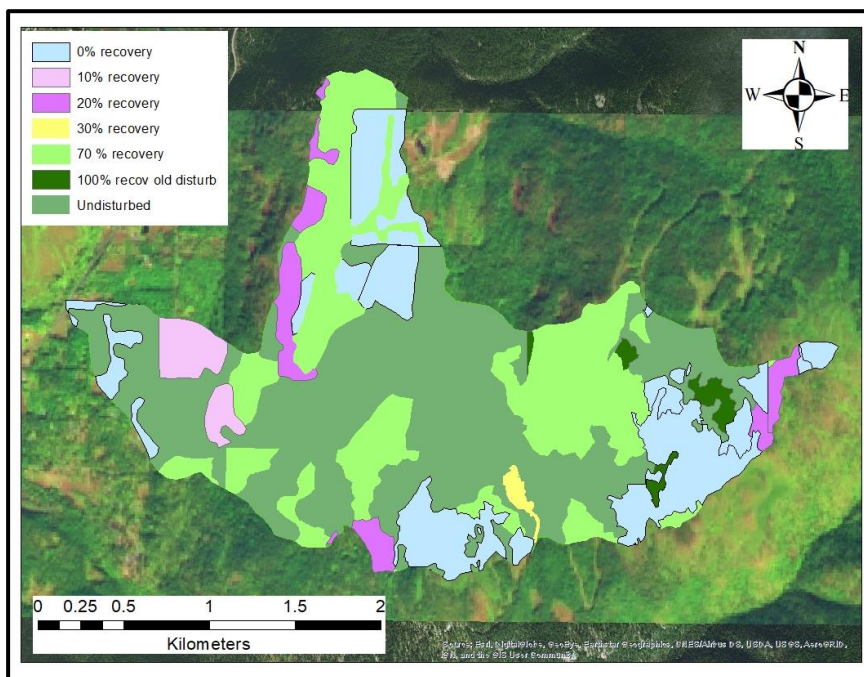


Figure 1. Summary of forest disturbance in terms of percent hydrological recovery. Dark and medium green areas are considered undisturbed or very old (> 100yrs) disturbance.

Based on the new watershed boundary Dumont Creek has a total area of 565.4 hectares. Currently 303.3 is considered disturbed either due to private land clearing, beetle mortality or past harvesting. The current

equivalent clearcut area in Dumont is estimated at 193.3 hectares or 34% of the total watershed area.

Table 1. Hydrological disturbance in Dumont Creek

Percent Recovery	Hectares (unrecovered)	ECA Ha (%)
0	111.8	111.8
10	16.7	15.0
20	25.3	20.2
30	3.7	2.6
70	145.8	43.7
100	8.2	0
undisturbed	253.9	0
Total	565.4	193.3 (34.2%)

In my previous assessment I estimated much of the disturbed area to be at 60% level of recovery. I have increased this estimate to 70% recovery to be consistent with more detailed ECA analysis undertaken on several nearby watersheds that I have completed in the last several years. The level of recovery applied considers the stand height and canopy closure characteristics documented in the VRI database relative to the mature, undisturbed stand for a give Biogeoclimatic sub-zone stand type.

As I indicated in my previous letter (August 2016), my opinion is that a small amount (less than 10% or 62 ha) undertaken on the west-aspect slopes below about 1000m elevation will not compound any existing changes to the peak flows and could possibly act to reduce any increases in peak flows associated with the high elevation clearing. In addition, harvesting below the 1000m elevation is unlikely to affect the timing or duration of low flows because it is downslope from the areas that likely contribute the majority of slope runoff that eventually enters the stream channel via the slower process of soil water (macro-pore flow) in the later summer months.

Regards,



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