

Response to Schneider *et al.* 2003. “Managing the Cumulative Impacts of Land Uses in the Western Canadian Sedimentary Basin: A Modeling Approach”

Assumptive Error and Overestimation of Effects in Wildlife Model Output

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Key Words: *avoidance; seismic line; wildlife model; woodland caribou,*

Schneider *et al.* (2003) make an assumptive error that limits the degree to which the model results should be considered as representative of ecosystem function.

The key assumptive error involves the woodland caribou “avoidance distance...100 m for seismic lines” attributed to Dyer *et al.* (2001). The term “avoidance” suggests a 100% reduction in use by woodland caribou. This is inconsistent with the results of Dyer (1999) that found statistically significant reduction in use by woodland caribou of between 25% and 52%, i.e., an average annual of 40%, of areas within 100 m of a seismic line. Woodland caribou do not avoid using areas within 100 m of seismic lines, but there is a reduction in the use of these areas, resulting in a loss of about 40 m of effective habitat equivalent on either side of the line. The model therefore overestimates the influence of seismic lines on woodland caribou habitat by about 250% above literature values.

Figure 1 explores this assumptive error using a simple spreadsheet model. Based on historical seismic lines and future projection provided in Schneider *et al.* (2003), and end of the effect after 40 yr of seismic line vegetative regeneration, there is a substantive change to the potential effects on habitat. Woodland Caribou in southern Manitoba begin to use coniferous dominated 30-50-yr-old cutblocks and wildfire burns at approximately the same rate as random points. Predicted effects of seismic lines on habitat availability are substantively reduced.

Responses to this article can be read online at:
<http://www.ecologyandsociety.org/vol12/iss1/resp3/responses/>

LITERATURE CITED

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Fig. 1. Results of model assumptions on habitat loss.

