

Response to Lessard *et al.* 2005. "Should Ecosystem Management Involve Active Control of Species Abundances?"

## Response to: 'Should Ecosystem Management Involve Active Control of Species Abundances?'

*Don E. Harron*

Key Words: *model; moose; predation; wolves; woodland caribou.*

Lessard *et al.* (2005) errors in "Case 2: Large mammal interactions in northern boreal forest" when assuming that "caribou are more vulnerable to predation than moose". James *et al.* (2004), in a study of northern Alberta woodland caribou, notes that "caribou were not killed in proportion to their availability" and found that individual woodland caribou were approximately one-tenth as likely to be subject to predation compared to individual moose, supporting the Hayes *et al.* (2000) observation that "wolves did not show a strong switching response away from moose as the ratio of caribou to moose increased in winter". The assumption of increased predation risk is contrary to the literature and results in an order of magnitude error being introduced into the model results.

The Case 2 scenario also assumes that both moose and woodland caribou initial population densities are the same at about 0.15 per km<sup>2</sup>. While moose densities can occur at the stated levels, Thomas and Gray (2002) note that typical woodland caribou densities are between 0.01 to 0.03 per km<sup>2</sup>, or an order of magnitude lower. This introduces another order of magnitude error into the analysis.

It is likely that the Case 2 model over estimates the linkage between moose, woodland caribou, and wolf population ecology by at least two orders of magnitude and the study conclusions should be rejected.

Responses to this article can be read online at:  
<http://www.ecologyandsociety.org/vol11/iss1/resp1/responses/>

### LITERATURE CITED

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