

**From:** [Inman, Bob](#)  
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**Subject:** FW: WSB den site paper: Abstract  
**Date:** Friday, January 20, 2017 10:36:48 AM  
**Attachments:** [Detecting Snow at the Den Site Scale.docx](#)

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The attached abstract is part of an upcoming publication of interest in the Wildlife Society Bulletin. I understand that there are still technical editor revisions to be made thus it is not final.

The point of the study was to examine known denning areas to see if there is snow capable of being a den at the May 29 date that McKelvey et al 2011 used as a prediction of what May 15 would look like years from now under climate change.

-Bob Inman

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We have permission from WSB to send the abstract ONLY to colleagues as "accepted for publication." Attached below.

----- Forwarded message -----  
From: "A J" Magoun

## Detecting Snow at the Den-Site Scale in Wolverine Denning Habitat

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**ABSTRACT** The relationship of wolverines (*Gulo gulo*) to persistent spring snow (PSS) may be obligate at the den-site scale but this relationship has yet to be examined at this scale. Our objective was to detect snow at the den-site scale in late May using low-altitude aerial photography in wolverine denning habitat both in the Rocky Mountains of western United States and in northwest Alaska, USA. In the Rocky Mountains, we detected snow on 31 May 2016 in low to heavy categories in 82% of 40 transect segments flown through home ranges of 4 reproductive female wolverines that had denned in Idaho and Montana, USA, prior to our study. In the Alaska study area, we photographed snow on 29 May 2016 at 4 den sites of female wolverines that denned in 2016. By then snow remained only in occasional, widely scattered patches. Remnant snowdrifts remained at all 4 den sites. High-latitude tundra habitats in Alaska may lose PSS sooner than montane habitats at the southern extent of wolverine distribution. To incorporate PSS in models of future wolverine habitat, we must understand the relationship of wolverines to snow and measure PSS at an appropriate resolution and scale that is biologically meaningful for the species.

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