

From: [A.J](#)
To: [Grizzle, Betty](#)
Subject: recreation report
Date: Friday, December 29, 2017 7:18:42 PM
Attachments: [F1_2010 den.jpg](#)
[F2_2010 den.jpg](#)

Hi Betty

I hope you had a good Christmas and took some time off. I used the holidays to study the recreation report, brush up a bit on RSF models, and AIC etc., and also go over the previous progress reports. The more I got into everything, the more questions I developed regarding the final report and the conclusions. I really am disappointed that the final report is only a modeling exercise with little on-the-ground observations. When I looked through the material presented in the progress reports and compared it to the conclusions from the modeling exercise in the final report, I see a number of things that are contradictory. Furthermore, I think the interpretation of the model by the authors may not be the only interpretation that makes sense. I have so many questions and points I would make that if I were a reviewer of the report (submitted as a potential publication), I would recommend major revisions. Too many points to address in this email. I'll just conclude with my opinion that the data collected over the 5 years of the field study indicate to me that there is not enough information on the levels of recreation (or wolverines exposed to recreation) to conclude that recreation is now having an affect on wolverines, and nothing that indicates that recreation will increase appreciably in the future into new areas or higher intensities. In fact, I wonder if, with earlier spring melt, recreation will end earlier, leaving the area without recreation disturbance during the entire April period. Recreation was not monitored after April 15, which I assumed was because snow conditions at access points was no longer amenable to recreation activity after mid April.

I find the term "indirect habitat loss" unfortunate because the disturbance is temporary in nature (if indeed wolverines are actually avoiding recreated areas) and I believe you will soon see people stating that the winter recreation is causing wolverines to lose up to 50% of their habitat in the Payette and other areas and this percentage will increase in the future with climate warming.

I also don't like the term "avoided" in presenting the results of the modeling exercise because it insinuates that there is something negative about the "avoided" areas, when in fact, it may simply not be "selected" in winter period for various reasons. I would prefer "selected" or "not selected." There are only 3 denning females that were exposed to relatively high recreation, and movements for those females overlaid on recreation is only available for F1 and F2 (attached: "D" marks the den; F10's den in 2014 was just east of F1's 2010 den) from the 2010 progress report. One does not know if these females would have had these same movements and locations even if there had been no recreation in their home range. Their

apparent "avoidance" of a lot of the recreated area may not have been due to recreation but to some other factor, since wolverine movements often are quite different in the denning period than in the rest of the year. However, the attached maps show that they used portions of the recreated area, even denning in recreated areas when un-recreated areas were nearby.

I can only hope that additional data analyses will be forthcoming from the recreation study that will not be focused on modeling, but actual observations of wolverines and recreationists and how they interacted.

I assume you are getting close to being done with the SSA and can move on to other things.

Hope you have a Happy New Year!

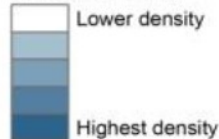
Upper
Payette
Lake

D

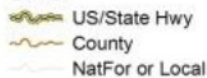
Payette
Lake

Area
of
Map
Detail

Recreation Density



Roads



F2 Home range

F2 Track

F2 Locations

