

From: [Grizzle, Betty](#)
To: [Bush, Jodi](#)
Subject: Re: Questions re "small population size", genetic diversity, etc.
Date: Monday, May 8, 2017 1:51:15 PM

Jodi - Just wanted to let you know that I sent an email to John Wenburg with your revisions and other edits to my questions on May 3, and also attached 7 publications. I asked that he let me know how we can move forward.
No response yet.

On Wed, May 3, 2017 at 8:02 AM, Bush, Jodi <jodi_bush@fws.gov> wrote:

Here are some comments.....JB

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On Tue, May 2, 2017 at 2:57 PM, Grizzle, Betty <betty_grizzle@fws.gov> wrote:

Here are some key questions I developed after reviewing previous rules. **Feel free to edit these and/or provide others.**

I would like to send these to AK researchers.

Thanks.

(1a) Do genetic studies indicate that there is a loss of connectivity between wolverines in the northern Rocky Mountains (or the Cascades region) and Canada?

(1b) Relatedly, how does immigration of wolverines from Canada influence the genetic diversity of wolverines in the contiguous United States?

(2a) **Based on the genetic information you have**, Does the contiguous U.S. population of wolverines exhibit a reduction in genetic diversity?

(2b) Relatedly, is there evidence of genetic drift in wolverines in the contiguous US population? **What might this mean to long term persistence of wolverines in the US?**

(2c) If either (2a) or (2b) are true, what, if any, "adverse effects" have been documented in the US population of wolverines? **Betty. Not sure adverse effects is the right term here. Maybe ..Have we seen consequences to wolverine breeding, reproduction, fitness, persistence in the US population?**

(3) What is the "effective population size" of wolverines in contiguous United States, AND across it's entire North American range?

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