

From: [William Harrower](#)
To: ["Grizzle, Betty"](#)
Subject: RE: Metapopulation question
Date: Thursday, October 5, 2017 1:01:24 PM

Betty,

You could try these:

Justina Ray (Wildlife Conservation Society); jray@wcs.org

Tom Jung (Yukon Territorial Government); Tom.Jung@gov.yk.ca

Rich Weir (BC Ministry of Environment); Rich.Weir@gov.bc.ca

Jason Fisher (University of Victoria); Jason.Fisher@innotechalberta.ca

Bill

From: Grizzle, Betty [mailto:betty_grizzle@fws.gov]

Sent: October 5, 2017 9:04 AM

To: harrower@biodiversity.ubc.ca

Subject: Re: Metapopulation question

Thanks Bill. We were discussing who to send our **DRAFT** report to in Canada. Who would we send it to for possible review (agency and contact)? I can make sure that you receive a copy as well.

On Thu, Oct 5, 2017 at 8:57 AM, William Harrower <harrower@biodiversity.ubc.ca> wrote:

Betty,

Good to hear about the draft. Can't wait to see it.

I don't think we view the Canadian wolverine as being distributed in a metapopulation structure, and in fact COSEWIC seems to have done away with the western and eastern distinction. I think the new listing will be Special Concern country wide and it should be official next year (they say).

I typically think of subpopulations in a metapopulation as each having its own distinct dynamics, and likely we don't typically think about metapopulation dynamics in Canada is because wolverine habitat is relatively contiguous. We certainly have areas where there is good and bad habitat but mostly we think of wolverines as a single large group because they are easily able to move between areas of really good habitat.

Our worry in the southern BC is that in the south there is less movement between really good patches and thus more risk of population declines, isolations, or extirpation from human activities. Our goal is to maintain continuous populations. In the north and with Alaska we certainly don't think of the populations being separated at all. Population genetics tells us they are quite well mixed up there and the habitat is good and contiguous. We are working to delineate diet differences between areas such as central Yukon and Alaska, and the north slope of the Yukon and

Alaska but really, we are splitting hairs as far as population dynamics is concerned.

I hope that helps, have a great day!

Bill

From: Grizzle, Betty [mailto:betty_grizzle@fws.gov]

Sent: October 5, 2017 8:24 AM

To: harrower@biodiversity.ubc.ca

Subject: Metapopulation question

Hi Bill - I am finishing up the first draft of our Status Review for the wolverine and one of my colleagues asked a question about population structure. Inman et al. 2013 stated that in the contiguous US, wolverines are considered to represent a metapopulation (defined as a set of local or subpopulations within a larger area and where migration is possible between patches).

I went through the COSEWIC 2014 report to see how the Canadian population is described, but I did not see an explicit discussion of metapopulation. Based on my understanding, it seems that there is some distinction in western and eastern subpopulations. Would the Canadian population be considered a larger metapopulation? Canada and Alaska?

Thanks for your time,
Betty

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