

From: Fortin-Noreus, Jennifer
To: [van Manen, Frank](#)
Cc: mharoldson@usgs.gov
Subject: RE: human-caused mortality
Date: Wednesday, September 09, 2015 8:27:00 AM

Thank you, that's very helpful.

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From: van Manen, Frank [<mailto:fvanmanen@usgs.gov>]
Sent: Tuesday, September 08, 2015 4:29 PM
To: Fortin-Noreus, Jennifer
Cc: mharoldson@usgs.gov
Subject: Re: human-caused mortality

Jennifer,

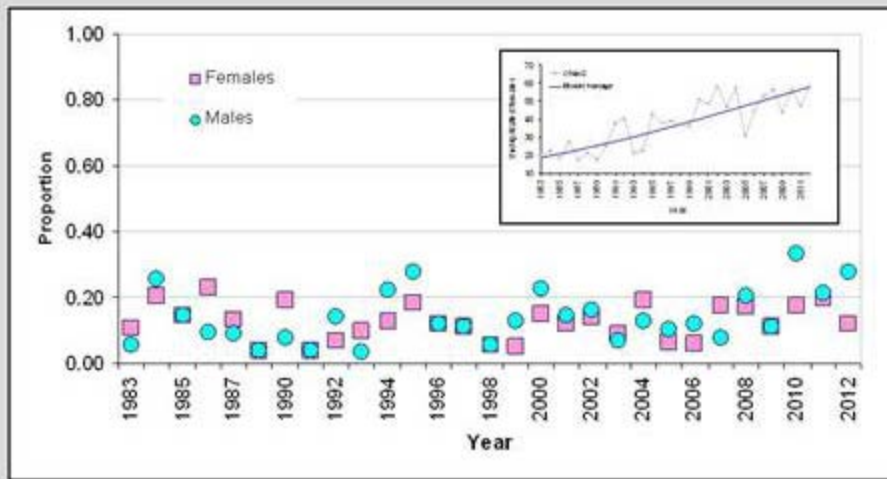
Nothing in peer reviewed literature on this yet. To be precise, what we looked at was the number of known and probable fall human-caused mortalities for independent aged (≥ 2) females as a proportion of our Model-Averaged Chao2, which as you know is our annual estimate for females with COY in the GYE population and is the basis for our population estimate. But our estimates of vital rates changed within the period 1983-2012 (1983-2001 vital rates are different from 2002-2011) and produce a "bump" in population estimates. So it seem most appropriate to stay close to the original data and reference fall, human-caused mortalities as a proportion of the Chao2 estimate. We focused on fall mortalities because on average 85% of annual, human-caused mortalities of females occur during fall (August-denning). See the figure, for females there is no positive trend evident during 1983-2012.

So this is the language we propose: "While the number of female grizzly bears killed by humans during fall months each year has increased gradually, fall human-caused mortality as a proportion of the estimated population size of females with cubs-of-the-year (based on the Chao2 estimator) has remained relatively constant (M. Haroldson, Interagency Grizzly Bear Study Team, unpublished data)." You can modify as needed but this has all the correct info.

Let us know if you have questions....

Mark & Frank

Human-Caused Fall Mortalities as Proportion of Females with Cubs



IGBST

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On Tue, Sep 8, 2015 at 2:20 PM, Fortin-Noreus, Jennifer <jennifer.fortin-noreus@mso.umt.edu> wrote:
Hi Frank and Mark,

As I work through some of the drafts that Rebecca started I sometimes come across notes from her about citations that need to be obtained. One is for the following statement: "While the number of grizzly bears killed by humans each year has increased gradually, human-caused mortality as a proportion of the estimated population size has remained relatively constant, particularly for females." If there is not a particular citation for this an email from either of you would suffice.

Thank you!

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