From: Haroldson, Mark
To: van Manen, Frank
Cc: Fortin-Noreus, Jennifer; Daniel Thompson
Subject: Re: Suggested graph for figure 3.
Date: Thursday, July 21, 2016 9:13:30 AM

The 2007 annual report was indeed the first year we reported model-average results for Chao2.

Mark

On Thu, Jul 21, 2016 at 8:02 AM, van Manen, Frank <fvanmanen@usgs.gov> wrote:

> Here's the caption, assuming you will exclude 2015 for consistency with other data presented. Mark should check this is 100% correct (e.g., did model-averaging actually start in 2007 or 2008?):
>
> Figure 3. Estimates of grizzly bear population size in the Greater Yellowstone Ecosystem, 1983-2014. Annual estimates are based on the Chao2 estimator. Model-averaged Chao2 estimates were implemented starting in 2007. Estimates for 1983-2007 were model-averaged once, and were annually updated after 2007. Model-averaging is not retroactiviely applied to update entire time series each year. Starting in 2012, only observations from within the Demographic Monitoring Area (DMA) contribute to population estimates.
>
> On Wed, Jul 20, 2016 at 2:17 PM, Fortin-Noreus, Jennifer <jennifer.fortin-noreus@mso.umt.edu> wrote:
>
> > I like the new figure with the line graph. Frank, would you mind writing a the figure caption so that I don't miss any of the points you make?
> >
> > Thanks!
> >
> > Jennifer Fortin-Noreus, Ph.D.
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> >
> > _____
> > From: Daniel Thompson [daniel.thompson@wyo.gov]
> > Sent: Wednesday, July 20, 2016 1:36 PM
> > To: van Manen, Frank
> > Cc: Fortin-Noreus, Jennifer; Mark A Haroldson
> > Subject: Re: Suggested graph for figure 3.
> >
> > Thanks guys, the MAC2 was what I was referring to and it makes sense to show them both...I'm good if the group is good with this or some iteration of those datapoints.
> >
> > DT

On Wed, Jul 20, 2016 at 1:33 PM, van Manen, Frank <fvanmanen@usgs.gov<mailto:fvanmanen@usgs.gov>> wrote:
Jennifer and Dan,

Mark and I discussed what graph would be most appropriate for Fig. 3. I suggest you consider the graph in the attached excel file with model-average chao2 and the raw, annual Chao2 counts (the line graph, not the bar graph). This is the only way to accurately reflect our monitoring and what we have reported in annual reports. A few points, several of which will need to be in the caption:

-Data are anchored at 1983

-The year 2015 can be removed if you want to end it at 2014; this would not affect the earlier-year estimates

-IGBST started applying model-averaging in 2007; years prior to 2007 were model-averaged once (hence the smooth line from 1983-2007)

-The annual variation starting in 2008 is due to 2 factors:
1) After 2007, we annually updated the model-averaged estimates based on entire time series (but we did not retroactiviely apply the estimates back to 1983 each year)
2) DMA-only applies to years 2012 on

Again, this accurately reflects how IGBST has monitored the population and how we have evaluated recovery criteria 1.

Let me know if you have any questions....

Frank

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