Review comments by Glenn Patterson on Hatchett and Eisen, 2018, Brief Communication: Early season snowpack loss and implications for over-snow vehicle recreation travel planning.

Thank you for the opportunity to review this brief communication.  In general I found the paper to be well-written, representing a significant contribution to our understanding of climate change, snowpack trends, and winter recreation.

My only substantive suggestions are:
(1)  Based on figure 1(b) and on intuition, median timing of achieving SWEmin appears to be negatively, not positively, correlated with elevation.
(2)  I realize that it might not be feasible to add another parameter to the analysis at this late date, and I also realize that SNOTEL temperature records can be suspect, but I still feel it's worth bringing up this point.  As you state well on page 4, line 23, warming temperatures are likely to be an important driver for the trends toward later SWEmin, and are also likely to be the primary factor involved in the shift toward more rain and less snow.  Would it be possible to add a figure showing the trend in a relevant measure of temperature?  It could be something like average daily (or max daily) early cold-season (Oct-Dec) temperature, or something like that.  From what you are describing, one would expect to see a shift from predominantly freezing to melting temperatures.
(3)  I like the discussion pertaining to table 1, and the suggestions contained in the table.  I would like to suggest one additional management strategy.  As both human-powered and OSV winter recreational use are likely to be confined in the future to smaller geographic areas and shorter-duration seasons, conflicts among user groups are likely to increase.  In the Rabbit Ears Pass area of Colorado, managers from Routt National Forest minimize those conflicts by clearly designating separate areas for motorized and non-motorized use (non-motorized can actually occur in both areas).  In this case it is the east side and the west side of the pass.  My suggestion is to develop such conflict-reduction strategies for the Lake Tahoe area, as well.

Below are some specific suggestions for minor editorial issues.

Abstract:  In the first sentence (line 8), it would be good to clarify whether "negative impacts" refer to impacts on the over-snow vehicle recreational experience, or on the environment.  Based on the paper, it appears to be the latter.

I agree with the previous suggestion, that it would be good to speak (line 11) in terms of later onset of SWE sufficient for recreation, rather than increasing date.

Introduction:

Page 1

Line 15:  I would be a little more comfortable with "warming" of the cryosphere, rather than "decline".  "Warming" is clear; "decline" carries complex connotations.

Line 27:  "Economic revenue" strikes me as redundant.  I would suggest either "revenue" or "economic impact".  Also, it would be helpful to specify that the revenue is on an annual basis:  "…annual revenue…"

Page 2

Lines 4-9:  This would be a good place to address one of the important aspects of the SWE-depth relationship that is central to this discussion.  I would suggest stating that the 30-cm minimum depth refers to 30 cm of uncompacted or fresh snow, something like this:  "Minimum snow depth restrictions have been proposed by several forests undergoing winter travel management planning across the Sierra Nevada.  This restriction is usually proposed as a minimum depth of 30 cm of uncompacted snow (United 5 States Forest Service (USFS), 2013)"

Data and Methods:

Page 3

Line 9:  This is a little nit-picky, but this sentence seems to indicate that SWE is a measure of depth.  I would suggest rewording to:  "…we specified 90 mm SWE (hereinafter SWEmin) as the required minimum SWE corresponding to a minimum uncompressed depth of 30 cm for approval of OSV use."

Line 14:  I agree with the earlier suggestion to maintain consistency of depth units by sticking with cm instead of mm.

Line 24:  I would suggest using "when" instead of "that":  "Dry days were days when zero precipitation was measured…"

Results and Discussion:

Page 3

Lines 31-31:  Based on figure 1(b) and on intuition, median timing of achieving SWEmin appears to be negatively, not positively, correlated with elevation.

Page 4

Line 1:  Delete unneeded "in" after "trends".

Line 8:  Thanks for looking at the elevation dependency of the SWEmin trends.  I, too, found indications of elevation-dependent warming, meaning steeper trends at higher elevations.  Some of the references in my 2016 dissertation go into this in a little more detail.

Line 23:  I realize that it might not be feasible to add another parameter to the analysis at this late date, and I also realize that SNOTEL temperature records can be suspect, but I still feel it's worth bringing up this point.  As you state well here, warming temperatures are likely to be an important driver for the trends toward later SWEmin, and are also likely to be the primary factor involved in the shift toward more rain and less snow.  Would it be possible to add a figure showing the trend in a relevant measure of temperature?  It could be something like average daily (or max daily) early cold-season (Oct-Dec) temperature, or something like that.  From what you are describing, one would expect to see a shift from predominantly freezing to melting temperatures.

Table 1--Page 11:

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