

Check Station Data Update
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The Concerned Sportsmen of Michigan
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Just a short update regarding the 2016 Check Station data that has been shared on a number of social media sites over the last month or so.

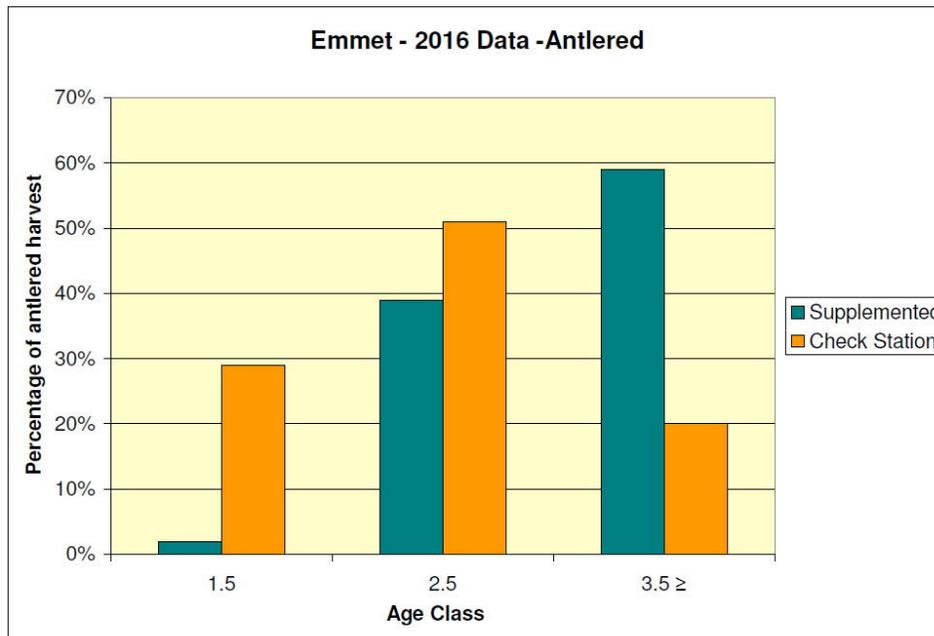
As most of you are aware, for a number of years, I have been raising concerns about the addition of supplemental data to the Check Station data compiled by the MDNR and the impact that doing so has on skewing the results.

Check Station data is not a randomly generated statistical sample. In fact, the DNR used to include a statement to that effect in the annual compilation of Check Station data.

"These data are not the result of a random sampling procedure, but these summaries still contain valuable information for wildlife managers. The fact that these data are collected from deer voluntarily brought to the check stations probably means that larger and/or older animals are more likely to be examined. It is assumed that these data have a similar bias in most years making it possible to the data for comparing years and evaluating trends."

The value of the check station data for comparison purposes hinges on the premise that the bias created by the methodology will be similar from year to year. When the methodology used for gathering the data is changed, that premise collapses. When supplemental data is gathered from a different source other than traditional check stations and is then mixed together, the resulting data is skewed heavily, thus making comparisons to previous years or to other DMU's where supplemental data has not been added, problematic.

We know for a fact that supplemental data is skewed when compared to Check Station data, simply by comparing the two data sets. For example, if we look at the 2016 check station data for Emmet County, compared to the supplemental data for Emmet County, gathered at the 2016 QDMA Aging Night, there is a significant disparity between the two data sets.



If we were to believe that the sample gathered at the QDMA event was an accurate representation of the 2016 antlered buck harvest, we would have to believe that 2% of the bucks harvested in Emmet County last year were yearlings, while almost 60% were 3.5 years old or older. Obviously that is not the case. It's also obvious that if we want to make any kind of legitimate comparison to previous years or to DMU's where supplemental data has not been added to the check station data, that the supplemental data needs to be removed.

This was easy to accomplish with the supplemental data from Leelanau Co., as it was entered into the master Check Station spreadsheet with a unique identifying code, which allowed the data to be sorted easily. So it was simple to segregate the supplemental data when compiling the Check Station data totals.

Supplemental data began to be mixed into the NW12 data beginning during the first year of the mandatory APR's, in at least 5 of the 12 counties and maybe in more. Unfortunately, unlike the Leelanau County supplemental data, it was not entered under a unique identifying code, so it was almost impossible to accurately segregate the supplemental data and then remove it from the check station data, in order to produce a data set that would allow valid comparisons with both pre-supplemental years and with other DMU's where supplemental data was not being mixed in. If someone is comparing un-supplemented data to supplemented data, it's an apples to oranges comparison and lacks any validity.

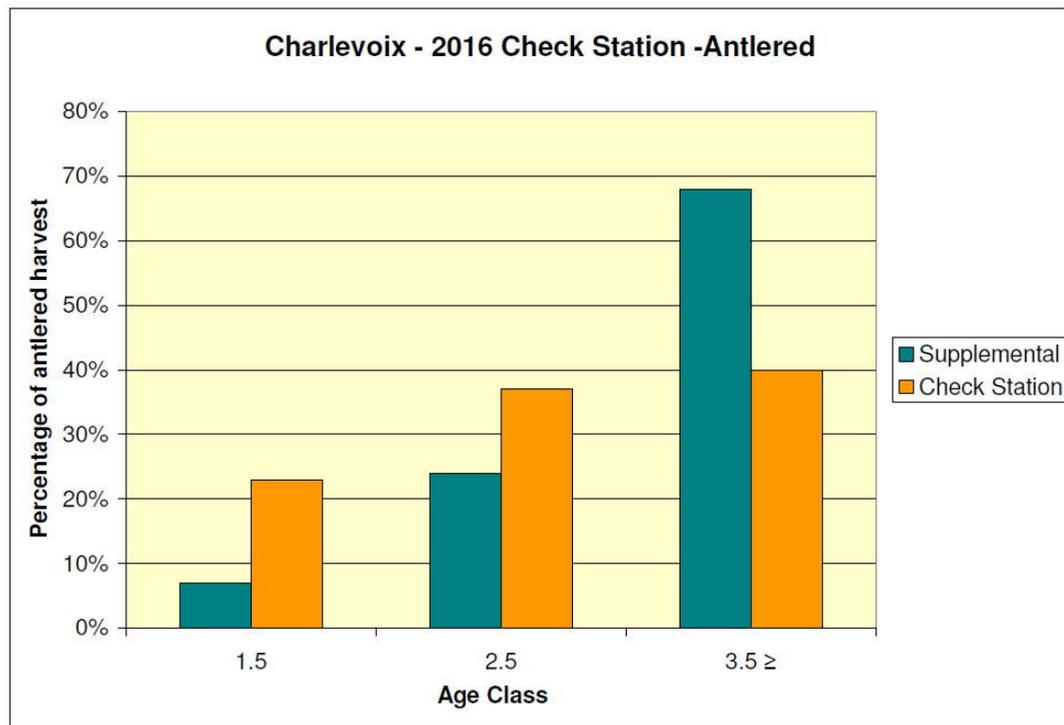
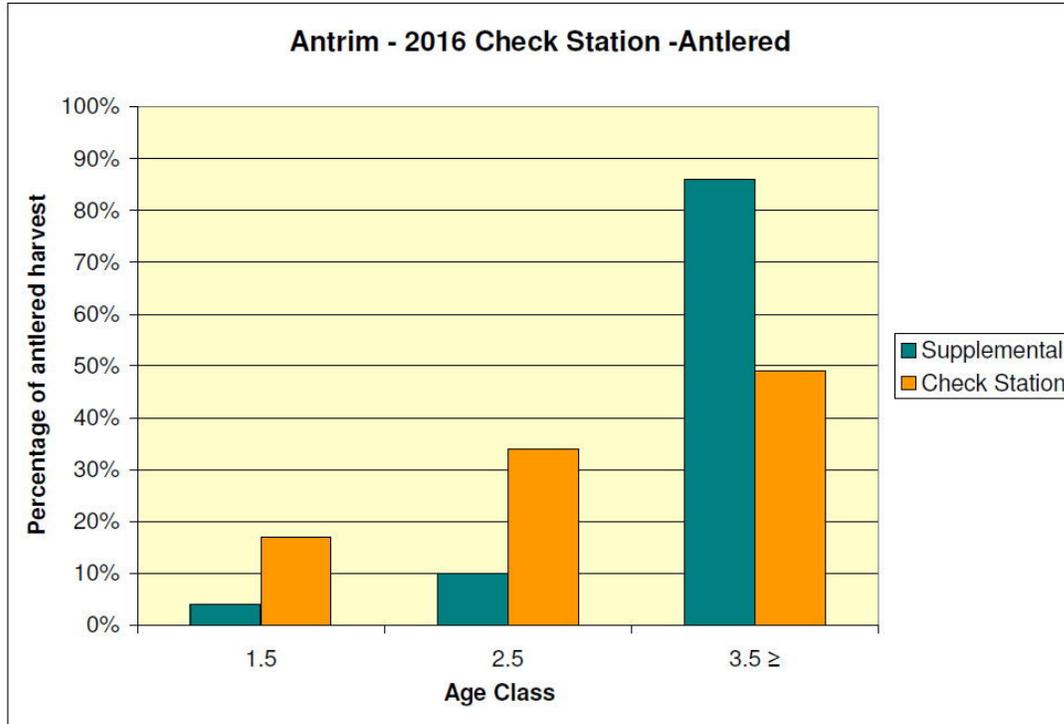
Beginning in 2016, some of the supplemental data gathered at QDMA events in some of the NW12 counties began to be entered under unique codes, which allowed us to sort the data and produce check station data for 2016 that is not supplemented, for several of the NW12 Counties. I was able to obtain the total for the supplemental data gathered at two QDMA events by the DNR, which allowed me to adjust the check station results for 4 of the 12 counties in the NW12. Unfortunately, there was at least 1 other QDMA aging event in the NW12 counties, impacting 2 or possibly 3 of the other counties. That data was simply lumped in with the regular check station data and there is no accurate way to sort the two data sets.

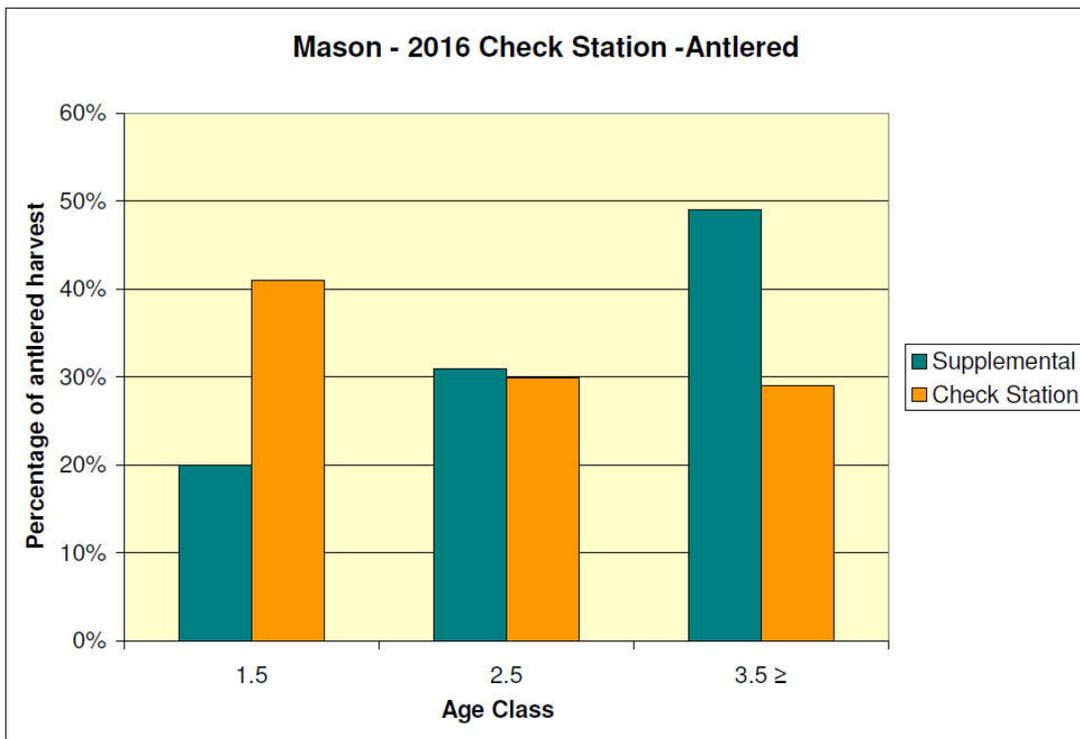
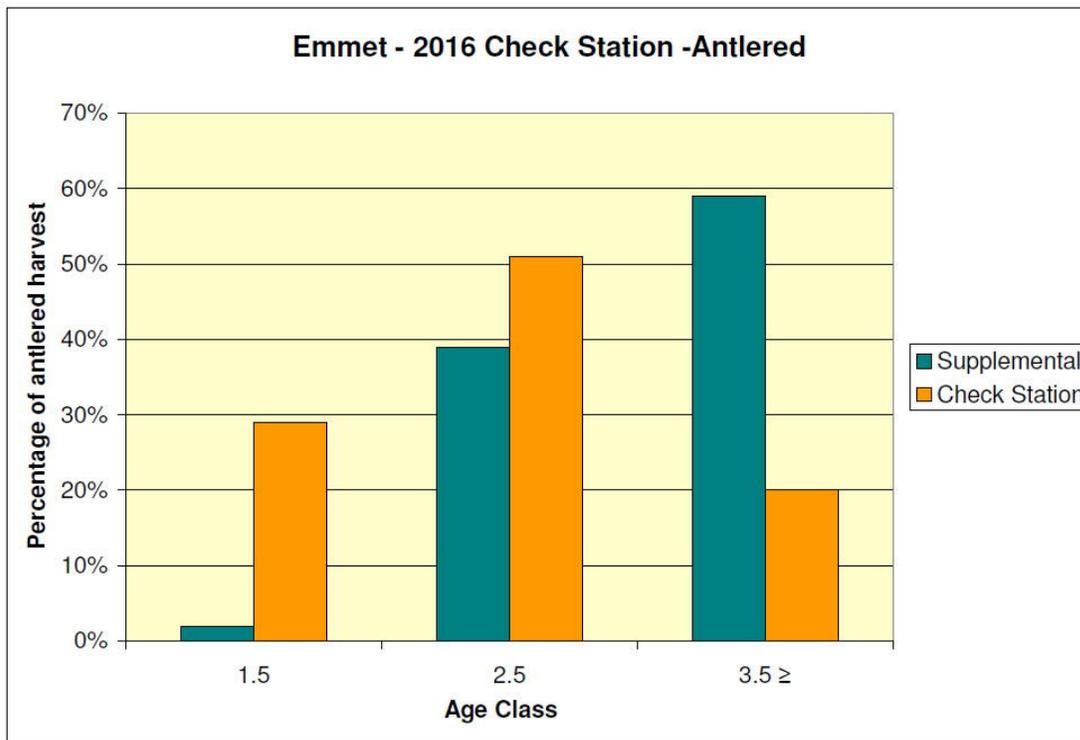
The Counties that I was able to produce adjusted charts for, with the supplemental data removed, are Antrim, Charlevoix, Emmet and Mason Counties.

The Counties which contain supplemental data mixed into the check station results are Benzie & Grand Traverse and it's likely that Kalkaska does too.

I have not seen any indication that significant supplemental data was combined with the check station data from Manistee, Missaukee, Lake, Osceola or Wexford Counties, although it's possible that more information about whether or not the data was supplemented in those Counties may emerge in the future but in any event, it won't be possible to easily remove the supplemental data, as it was not entered under a unique code.

Here are charts sorted by age class for the 4 counties impacted by the events I was able to obtain supplemental data for, showing the supplemental data vs. the un-supplemented Check Station data.





One further point I'd like to make about Check Station data and APR's. Check Station data is commonly displayed as the percentage that each buck age class makes up, of the total antlered harvest. This is a proportional representation of the deer checked. Because it is a proportional representation, changes in

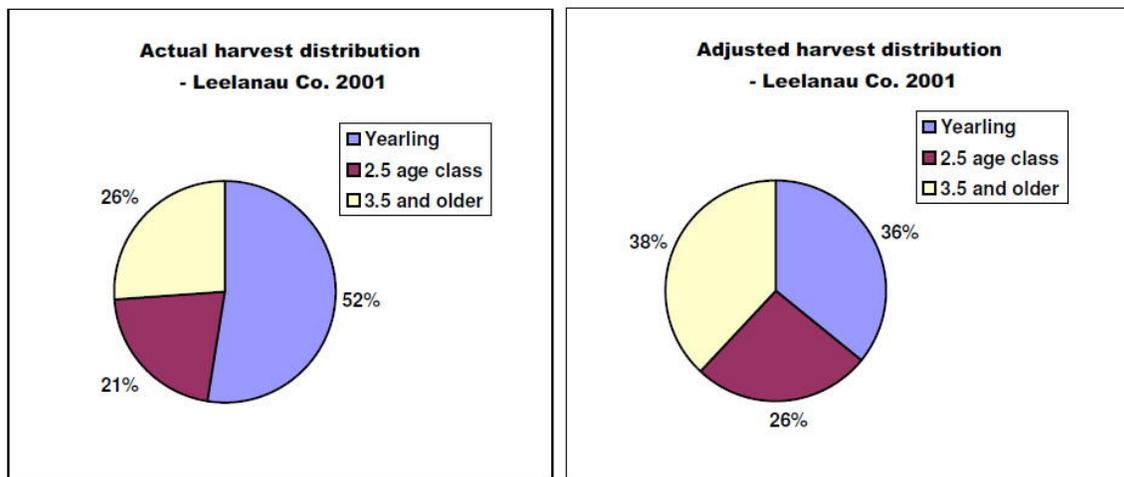
the percentage of any of the individual age classes will automatically result in changes to the other two age classes, as well. So one needs to keep in mind that if the number of yearling bucks checked is reduced by the introduction of an APR which puts a significant number of those bucks off limits for harvest, there will always be a corresponding increase in the percentages of the other two age classes. This does not mean that greater numbers of older bucks were actually checked, it just means that the portion of the sample checked in those older age classes makes up an increased percentage proportionally.

To demonstrate this point, a number of years ago I put together a couple of pie charts that simulate the impact that a 3 pt. APR would have on redistributing the proportional percentages of the deer checked.

For this simulation I used the Check Station data from Leelanau County from 2001, which was prior to the implementation of mandatory APR's and before the Check Station data there became supplemented.

The chart on the left shows the age class distribution of all of the antlered bucks that were checked from Leelanau Co. that year. Yearling bucks made up 52% of the total sample and older bucks, defined as 3.5 years and older, made up 26% of the total sample.

In order to simulate the impact of an APR, we then removed all of the antlered bucks which would have been sub-legal under a minimum 3 pt. APR from the sample. We then recalculated the proportional make-up of the adjusted sample. In the adjusted sample, the yearling age class was reduced to only 36% of the total antlered buck harvest. Conversely, in the adjusted sample, older bucks eclipsed the yearling percentage and increased to 38% of the total.



Many hunters looking at these changes would assume that the actual number of older bucks in the sample increased, as it went from 26% to 38%. In point of fact, the number of older bucks represented in each chart is identical, in both cases there were 16 older bucks included in the sample. The apparent change is simply due to a reduction in the size of the yearling component, as occurs when APR's are put in place.

So what is the take home lesson from all of this?

I'd say this about check station data; from a statistical standpoint, it's not very good data but it's the best that we have. First of all, any comparisons made between years or DMU's where the check station data was not supplemented and years or DUM's where supplemental data has been mixed in, are in my opinion extremely problematic, to the point where they become meaningless.

If known supplemental data can be identified and segregated from the Check Station data, it should be, then the comparisons become more valid.

One still has to remember that proportional representations may make it look like there has been a substantive change, when in fact there may have been little to no change at all occurring. Because the Check Station data is not a random sample, it's very difficult to assess whether the changes noted are actual or simply proportional changes due to putting a substantial portion of the yearling age class off limits.

Lastly, because of both the inherent bias of the Check Station data and the skewing impact that APR's have on the proportional display of multiple age classes, it's important for people to understand that the Check Station data may or may not have any resemblance to the actual make-up of the deer harvest.

Does that mean that Check Station data should not be analyzed or used for discussion purposes? No, that is not what I am implying. But it should be taken with a grain of salt and if the changes indicated are being used in a public manner, attributed to a specific APR or regulation, then I feel there needs to be an obvious disclaimer provided, which alerts the viewer to the potential issues associated with Check Station data. Starting several years ago, once I fully understood the impact that supplemental data and APR's could have on the proportional representation of check station data, I began including such a disclaimer on the material that I use in public discussions. I would encourage others who use the data in that manner to include a similar disclaimer, in the interest of full disclosure to the public, who may not understand what the charts they are looking at actually mean.

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