

Russ -

I wanted to touch base with you regarding your response yesterday to the question that Commissioner Tracy posed, about the feasibility of moving the proposed APR/CWD experiment to another county outside of the CWD zone. I'm presuming that the answer of "No", came from the designers of the proposed experiment? In the spirit of transparency, could you possibly ask whoever reached that determination to flesh out the response with some additional information as to why an experiment that is solely designed to measure the impact of an APR on population levels and the demographic make-up of the herd, would need to be specifically located within the CWD zone? Is that answer based on some actual biological basis or is it simply a logistical reason, such as the DNR already having contracted for personnel to conduct the proposed experiment in a specific area? It seems like additional clarity would be valuable in helping both the public understanding of that response and also help the NRC with evaluating different options that may be available.

It also seems reasonable to ask the individuals who designed this experiment, if they took into consideration the possible negative impacts to the resource that may result from conducting this experiment in an area where CWD is known to exist. One would presume that they made some kind of an assessment regarding possible harm to the resource prior to finalizing the methodology that is going to be used, so it would be both reasonable and valuable to know whether they have any concerns about increased dispersal and the older male age structure that will result from imposing APR's in the CWD area, having a negative impact on the resource and if so, are they making any attempt to mitigate that negative impact, as part of this experiment?

Both clarity and transparency play a vital role in formulating sound public policy, particularly when the policy being developed has the potential to cause actual harm to our natural resources. I'd appreciate any additional information that you can provide regarding these questions or as an alternative, feel free to forward this to the individuals who designed the proposed experiment, I'd be happy to discuss it directly with them.

Regards,
Jim Sweeney

The Concerned Sportsmen of Michigan

Mr. Sweeney,

Chief Mason asked that I respond to your questions in the email attached below.

The Natural Resource Commission (NRC) has developed a resolution requesting the Department of Natural Resources (DNR) to develop and conduct a research project to evaluate if mandatory antler point restriction (APR) regulations can be a useful tool in responding to the emergence of Chronic Wasting Disease (CWD) in Michigan deer. This is a valid question considering that presently little is known about how changes in deer abundance and sex/age composition may influence prevalence and spread of CWD; and these herd demographics may change in response to various deer harvest regulations (i.e., APR vs. non-APR regulations). Under the NRC resolution, the 5-county core CWD management area (Kent, Newaygo, Mecosta, Montcalm, and Ionia) will be set up as the assessment area and the NRC is considering a mandatory APR regulation beginning in the 2019 hunting season. The DNR Wildlife Division has an existing partnership with the Boone and Crockett Quantitative Wildlife Center (QWC) at Michigan State University that is particularly well suited to address this research question, and researchers from DNR and the QWC have designed the study.

We have developed a paired comparison of APR and non-APR townships in the 5-County area designed to detect changes in abundance and age/sex distributions over 4 years (2019-2022). The paired townships will be selected based on similar habitat, land uses, human density, and apparent/observed CWD prevalence. Consequently, this design depends on splitting the 5-county area into two segments; one area with APR regulations (study area) and another area without APR regulations (control area). The study and control areas need to be located as close as possible geographically to match habitat/landscape characteristics and deer ecology. Presently, deer harvest regulations within the 5-county core area differ from those of adjacent counties where deer ecology may be similar (e.g., southern Michigan). The study design requires that all harvest regulations, except the APRs, be the same throughout study and control areas to evaluate the influence of APRs. Additionally, the different regulations may have already influenced hunter selection, deer abundance, and sex/age distribution within the 5-county core area; and these factors could differ from counties outside of the 5-county core area. Given the need for controlling factors, the optimal split we are recommending will be Kent and Newaygo counties in one segment with Mecosta, Montcalm, and Ionia in the other (i.e., an east-west split to avoid variations in land cover/use, human, and deer populations that would occur with a north-south split).

After the study is completed (2023), the resulting field-based estimates of deer abundance and sex/age composition will be used to model potential prevalence and spread of CWD within the 5-county core area under APR and non-APR regulations. The results, along with conclusions and management recommendations, will be presented to the NRC and interested stakeholders. Recommendations will include the efficacy of APR regulations as a tool for managing the prevalence and spread of CWD within the 5-county core area.

Thank you for your interest and if you have further questions please contact me at the phone number below.

Dwayne

Dwayne Etter, PhD Wildlife Research Specialist

Dwayne -

Thank you for your reply. I was present when you made your presentation to the NRC earlier this year and I've also had previous correspondence with Chad on this issue, where he shared the proposed methodology that you mention, as well as the specific townships which have been selected for the this experiment, so most of your reply was not new information to me, but I thank you for it anyway.

For clarification purposes, I'd like to offer a few more questions/comments.

1) The resolution passed by the NRC (copy attached) specified utilizing Montcalm County, or any other specific county located within the 5 county CWD zone, as the experimental area for determining the efficacy of specific regulations. It did not mandate using all five or multiple counties within the zone, it specified utilizing one county (singular not plural) for those purposes, although it left which county would be used up to the discretion of the DNR.

The decision to utilize 5 different counties in this experiment seems to be at odds with the specific direction of the NRC in resolution #2 and does not appear to be based on any biological or scientific necessity. Utilizing 5 different counties for the purposes of analyzing the potential impact of these proposed regulations would seem to create a highly disparate sample pool, which adds needless complexity to the selection of townships to be included. It also seems to directly contradict your statement, *"The study and control areas need to be located as close as possible geographically to match habitat/landscape characteristics and deer ecology."* It seems kind of obvious that utilizing a single county for this experiment, as originally directed by the governing resolution, would much better address the need for being close geographically, as well as limiting the influence of other substantial differences that exist between the 5 counties included in this proposal.

Expanding the scope of the study to apply APR's to multiple counties, (either 2 or 3 depending on which group of counties is used as the study group) also seems to substantially increase the potential negative impact of spreading CWD via increased yearling dispersal and increasing localized prevalence rates resulting from increased numbers of antlered bucks in the herd, both of which have been identified as negative impacts, in terms of disease mitigation, resulting from APR's. By utilizing a single county, as was originally directed and implementing APR's in only half of that county, the potential negative biological impact of these regulations would be substantially decreased. If the experiment was moved to a single county outside of the 5 county CWDzone, any unintended negative impact would likely be completely eliminated.

2) *"The study design requires that all harvest regulations, except the APRs, be the same throughout study and control areas to evaluate the influence of APRs."* This aspect of the study design does not preclude moving the experiment outside of the CWD zone, to a single county, as long as the regulations are uniform within both the study and control areas. In addition to harvest regulations, there are other factors which may be present within the CWD zone, which may have a substantive impact on the

results of the experiment. One of the more critical factors is the presence or absence of CWD, as the disease itself, depending on prevalence rate, can have an impact on population density and harvest vulnerability, particularly among different demographics within the herd. It would seem critical to the design of the study to select townships for both the study and control groups, that are as similar as possible in terms of CWD prevalence. Yet based on current sampling levels, we have no real idea of what the actual prevalence rates are in 7 of the 8 townships selected for this study, as the sampling thus far has been inadequate for accurate detection at low levels. Without accurate knowledge of existing prevalence rates, there is no way to assess the potential impact that the disease itself may be having on observed changes to population and demographics, during the term of the experiment. The townships selected in the Newaygo/Kent group had less than half the level of sampling in 2018, than the townships in the Mecosta/Montcalm/Ionia group. (339 samples submitted vs. 807). It seems like that difference has the potential to skew the results, due to potentially undetected differences in current prevalence rates.

Since all this study is looking at is apparent changes to population and demographic make-up resulting from APR's, it seems like it makes much more sense to take the potential impact of CWD out of the equation totally, by relocating the experiment to a county outside of the CWD zone and doing at least one year of intensive sampling in all of the selected townships, prior to starting the experiment, to verify that CWD itself will not be impacting the results of the study.

3) *"Additionally, the different regulations may have already influenced hunter selection, deer abundance, and sex/age distribution within the 5-county core area; and these factors could differ from counties outside of the 5-county core area."* This statement presumes that there is homogeneity related to the impact of those regulations, as well as non-regulatory factors such as disease prevalence, within the 5 county core area, as opposed to counties located outside of the 5 county core area. The impact of regulations on a hunter in Newaygo county, where CWD has yet to be detected are likely to be substantially different than those on a hunter in Montcalm County, where the apparent prevalence rate in some portions of the county was as high as 4%, in 2018. Again, it seems like the decision to utilize 5 counties, which have substantial differences in terms of ground cover, deer density, hunter density and CWD prevalence, incorporates an un-needed level of complexity and decreases the potential for similarity between the control and study groups of townships selected for this study. Utilizing 1 county as the experimental area, as originally specified in resolution #2, seems like it would provide the highest degree of similarity between the study/control groups and would minimize the impact of other factors that differ dramatically between the 5 counties within the CWD zone.

4) *"After the study is completed (2023), the resulting field-based estimates of deer abundance and sex/age composition will be used to model potential prevalence and spread of CWD within the 5-county core area under APR and non-APR regulations.... Recommendations will include the efficacy of APR regulations as a tool for managing the prevalence and spread of CWD within the 5-county core area."* This statement kind of ignores the reality that by 2023, we will have 5 more years of actual sampling data gathered throughout the 5

county core area, which will provide a much more robust data set on the changes in spread and prevalence that *have* occurred, than will results from modeling based on extrapolated data specific to only 8 townships, spread across a 5 county area. It also suggests that because the modeling is based on data influenced by regulations and other factors that are specific to *within* the CWD zone, that the predictive value of these models, in terms of being applied to areas located *outside* of the CW zone will be limited. The fact of the matter is that we need predictive tools to assess the potential for spread and prevalence outside of the CWD zone, much more so than inside the CWD zone, as that is where future efforts to prevent the spread and limit prevalence rates will have the most traction. By 2023, CWD is going to be well established within the CWD zone, particularly within Montcalm/Northern Kent Counties. Further efforts to limit the spread and prevalence within the 5 counties included in this experiment are going to have limited utility, at best.

If the ultimate purpose of this experiment is to test the efficacy of regulations, such as APR's, in helping to mitigate the spread and prevalence of CWD in Michigan, then it seems logical that such an experiment should take place outside of the current CWD zone, where influences such as current regulations on carcass removal, etc. and the actual impact of the disease itself, will not be factors that influence the outcome of the experiment. We need tools that will help contain the disease within the current zone and limit its spread throughout the rest of the LP and which can be applied effectively in buffer zones, where the disease has not reached significant prevalence levels. It would seem that locating this experiment inside of the CWD zone, where additional factors will influence the results, will limit the applicability of such research being applied outside of the zone, where those factors won't exist.

Lastly, when designing this experiment, did the QWC/DNR give any consideration as to how this experiment might exacerbate the CWD situation in Michigan and are there any provisions included for cutting this experiment short, should there be dramatic increases in prevalence/spread in the areas subject to APR's, during the course of the experiment?

My understanding is that the decision has not been made yet regarding which group of counties will be the control and which will be the study focus. It seems that at a minimum, that Montcalm County, which has had the highest number of positives detected and is clearly at the epicenter of the CWD outbreak in Michigan, should be included in the control group, instead of being in the study group subjected to APR's, which will result in increased dispersal throughout that county, likely spreading the disease both faster and farther than would occur without this experiment being conducted. Such a decision would at least help mitigate the negative impact of conducting this experiment in the CWD zone.

I hope that prior to this experiment being finalized that the QWC/DNR and the NRC consider some of the concerns that have been raised about this proposed APR experiment and keep an open mind to considering other options which would result in a smaller negative impact to the resource, as well as potentially producing a better evaluation of proposed regulatory changes, that could

be applied outside of the established CWD zone, instead of being relevant only to being applied within the 5 county area included in this proposed study.

Regards,
Jim Sweeney

The Concerned Sportsmen of Michigan

Jim,

Thanks for your reply. There are a great many unknowns regarding CWD and the role of deer ecology and harvest management in transmission of disease. I can assure you that there was a great deal of thought put into the design of the project including many of the issues you address. We believe what we've designed will definitively answer the questions asked. Ultimately it's the NRC's decision regarding the harvest of deer in Michigan.

Thanks you,

Dwayne

Dwayne –

Thank you for your follow up. Please understand that I'm not directing these comments or questions towards you personally, I understand that responding to these questions was dumped on you and the decisions regarding this issue are being made well above your paygrade, so I apologize for you having to deal with this. Having said that, the formulation of sound public policy depends on transparency and a vital component of transparency is information. If the public and/or the appointed officials who are crafting that public policy don't have accurate and comprehensive information regarding the topic at hand, then a sufficient level of transparency has not been achieved and the resulting public policy will likely suffer as a result.

So while I appreciate your assurances that the DNR has thought about these issues, with all due respect, those assurances don't provide the level of information needed to reach meaningful conclusions regarding both the efficacy or the potential dangers to the resource resulting from this experiment.

While it's true that as you say *"There are a great many unknowns regarding CWD and the role of deer ecology and harvest management in transmission of disease."* It is also true that there actually is a lot that we do know, based on the best accepted current science, regarding CWD and deer ecology.

* We know that yearling buck dispersal provides a mechanism for spreading CWD across the landscape.

* We know that in 2018, almost 20% of the identified CWD positives in the Kent/Montcalm core area were yearling bucks.

* We know that the proposed APR's will protect 70% of yearling bucks in the study area from being harvested, which will reduce the number of CWD positive yearling bucks being removed from the landscape and which will increase the number of positive yearling bucks which disperse and spread the disease to new areas.

* We know that in 2018, antlered bucks $2.5 \geq$ had double the prevalence rate for CWD in the Kent/Montcalm core area (2.09%) compared to antlerless deer (.91% prevalence)

* We know that APR's will increase the number of $2.5 \geq$ bucks in the herd and that increasing the cohort which had the highest 2018 prevalence rate in the Kent/Montcalm core area (2.34%) will inevitably increase the overall herd prevalence level for CWD in the core zone.

* We know that higher herd prevalence rates will result in increased transmission rates, as well as increased environmental contamination.

In addition, we suspect that APR's will have no impact on increasing antlerless harvest rates, based on the analysis that QWC did of the NW12 data, which undercuts the entire premise of this experiment.

All of the information indicted above is based on data accumulated by the MDNR, unlike the premise of this experiment, it's not speculative, it's factual.

Given what we know, it's both logical and reasonable to ask how the designers of this experiment took those facts into account and knowing that there is a very high likelihood that the methodology proposed in this experiment will result in actual harm to the resource, how that harm is justified by the data that may result from the experiment. That is especially true given that almost all of the potential harm to the resource could be mitigated simply by moving this experiment to another location, outside of the core zone and doing adequate sampling prior to commencing the experiment, to insure that the disease is not present to cause harm.

I'm afraid that assurances don't provide an adequate answer to that question, to be able to assess whether the concerns about potential negative impact have been adequately addressed.

In the view of the designers of this experiment, what is an acceptable level of increase in the spread and prevalence of CWD in Michigan's CWD zone, resulting from implementing APR's, as part of this experiment?

If there is a clear indication that prevalence levels are rising at a higher rate in the study vs, the control area, is there any provision for stopping the experiment, or will those increases simply be endured until the 5 years are over?

Given that Montcalm is clearly the epicenter for CWD in Michigan, what justification is there for including it in the Study grouping of counties, instead of the control group, should that be the decision?

Again, I realize that you have had this dumped on you, feel free to throw it back to Russ or to the people at the QWC, who may be better equipped to provide some answers to these questions.

Regards,
Jim Sweeney

The Concerned Sportsmen of Michigan

**CWD Surveillance Results
Montcalm & Kent Counties
2018**

Sex	Age	Negative	Positive	Total	Prevalence	Change from prior year	Occurrence, 1 positive deer per	% of total sample	% of total positives
male	0	180		180	0.00%	0%	0	4%	0%
male	1	1019	10	1029	0.97%	-1%	103	23%	19%
male	2	625	15	640	2.34%	44%	43	15%	28%
male	3+	497	9	506	1.78%	58%	56	12%	17%
male total	ALL	2321	34	2355	1.44%	37%	69		
adult male	2 ≥	1122	24	1146	2.09%	46%	48	26%	44%
female	0	195		195	0.00%	0%		4%	0%
female	1	390	3	393	0.76%	-32%	131	9%	6%
female	2	489	7	496	1.41%	10%	71	11%	13%
female	3+	931	10	941	1.06%	-22%	94	21%	19%
female total	ALL	2005	20	2025	0.99%	-17%	101		
adult female	2 ≥	1420	17	1437	1.18%	-12%	85	33%	31%
2018 TOTAL	ALL	4326	54	4380	1.23%	11%	81		
adult total	2 ≥	2542	41	2583	1.59%	15%	63		
Antlered	ALL	2141	34	2175	1.56%	33%	64	50%	63%
Antlerless	ALL	2185	20	2205	0.91%	-13%	110	50%	37%

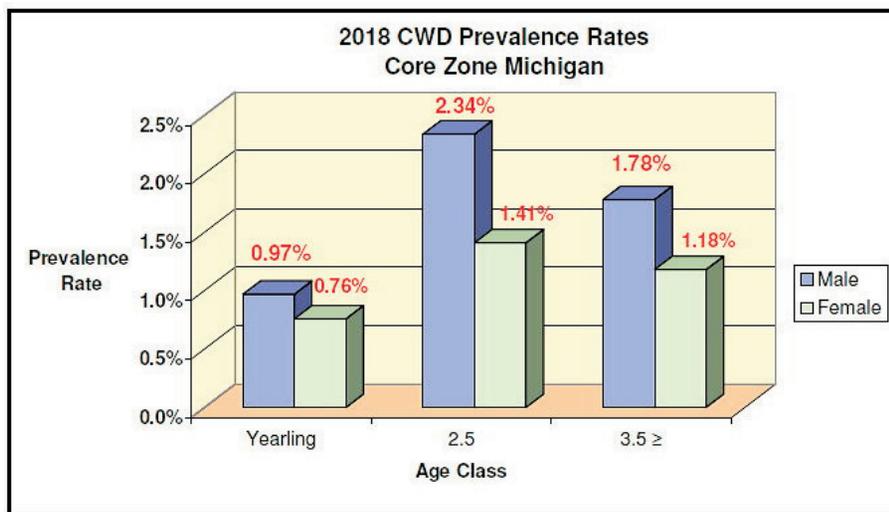


Figure 1

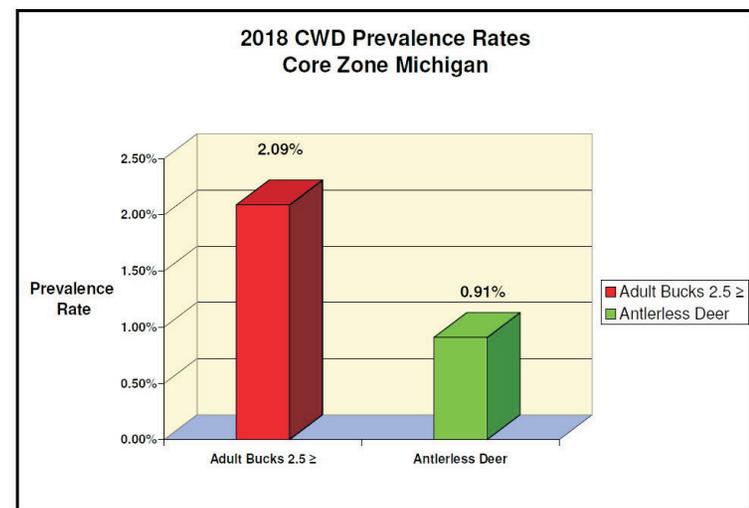


Figure 2



Antler Point Restriction Research

Rebecca Cain, Dr. David Williams, Dr. William Porter

Boone and Crockett Quantitative Wildlife Center at
Michigan State University

Research Question



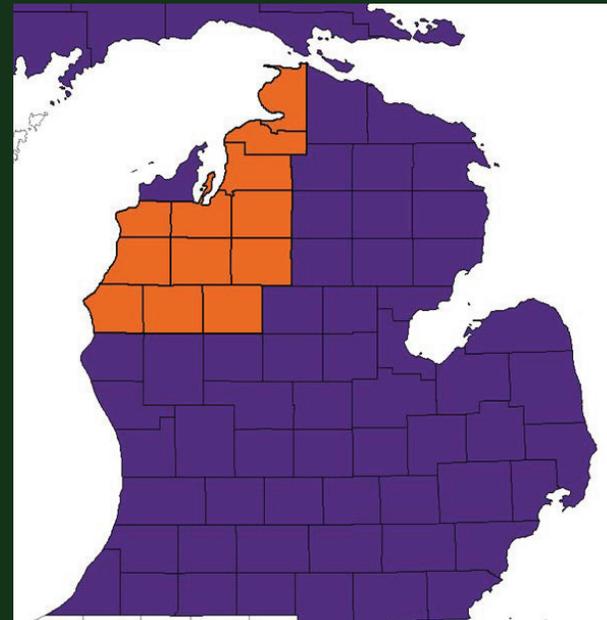
How have harvest outcomes changed in the NW12 since APR implementation?

MDNR request for statistically rigorous answers

Harvest data gathered for NW12 counties

NW12 is an Experiment

- it is possible to test hypotheses using harvest data





Research Findings

Data support the hypothesis that APR caused a decrease in harvest of 1.5 year old males

- The proportion of 1.5 year olds in the male harvest decreased leading to a greater proportion of the 2.5 and 3.5+ age classes in the male harvest



Research Findings Cont.

Data from the NW12 do not support the hypothesis that APRs caused an increase in antlerless harvest.

- Harvest data provide evidence for a change in antlerless trends in 2007 and suggest that the antlerless population has been increasing since 2007.



Research Findings Cont. 2

Data from the NW12 do not support the hypothesis that APRs caused an increase in hunter numbers where implemented

- Harvest survey data in the NW12 suggest a decline in hunter numbers
- This decline was similar to the rate of the decline hunter numbers in surrounding 12 counties



Summary

Question: How have harvest outcomes changed in the NW12 after APR implemented?

Method: 2-Part Trend Analysis

Hypothesis	Supported by Data?
Decreased harvest of male yearlings*	Yes
Increased antlerless harvest	No
Increased number of hunters	No

*Over the 4 years of APR management, numbers of 1.5 yr old males in the harvest decreased, 2.5 yr old males in the harvest were stable while numbers of 3.5+ yr old males in the harvest increased.



Thank you