

Recommendation Number	Report Year	TB Review Recommendations	Michigan AVIC/MDARD State Veterinarian /MDNR response	Action Implemented	Implemented/Completed
1	2022	Establish a threshold and compliance trigger for producers who cannot account for missing animals that are added to the watch list for reconciliation. Consider prioritizing non-verified herds in the EWB area.	MDARD will establish threshold levels for herds. If these levels are exceeded, it will result in the herd owner being forwarded to AID's Compliance Unit for investigation. This investigation will include an evaluation of the available data on animals that cannot be reconciled with evidence of their movement. If there are any deficits, there will be a discussion with owners on how to improve reconciliations in the future.		New
2	2022	Continue efforts to implement the EWB plan for at-risk cattle producers in Presque Isle County.	In 2023, USDA WS and MDARD are focusing on collecting more information on the risks to individual herds in Presque Isle County. USDA WS is conducting monthly deer surveillance on these farms and performing winter and summer verification inspections. MDARD is communicating the benefits of reduced surveillance and movement testing requirements for herds in Presque Isle County, which are outlined in the MOU and go into effect January 1, 2024.		New
3	2022	Explore the feasibility for personnel at NMLE to monitor MAZ origin premises bringing in retagged animals and to collect the secondary ID of each retagged animal to reconcile this information with the watch list; if feasible, implement a strategy to accomplish this.	MDARD personnel at NMLE have begun collecting supplementary identification (ID) information on animals from the MAZ and Presque Isle County that were retagged during check-in. This information is forwarded to MDARD's Atlanta Field Office and entered into USAHerds. If the supplemental ID tag is listed for an animal in the inventory of the producer, the new RFID tag number is added to the animal.		New
4	2022	Explore the value of collection of MDARD-approved secondary ear tags at custom slaughter plants serving MAZ producers to assist with watch list reconciliation.	MDARD has discussed the value of collecting secondary ear tags at custom slaughter plants to assist with watch list reconciliations. Any cattle sent to a custom slaughter plant from a farm in the MAZ or Presque Isle County must first receive a movement certificate. As part of the movement certificate process, the RFID and secondary ID tag numbers must be provided. Also, during this process, the personnel issuing the certificate will verify the ID numbers of the animal and amend the animal's identification information (including, identifying if animals were not in an owner's inventory and updating any retagged animals) at that time. This process gathers the same information that would be obtained by collecting supplemental ID tags at a slaughter plant. MDARD will continue to investigate ways to improve watch list reconciliations but will not be implementing this recommendation.		New
5	2022	Work with WS to find an acceptable timeline to re-administer the risk assessment tool for premises as factors change for the purpose of monitoring progress over time and to address new or unresolved issues since the previous assessment.	For all herds in the MAZ and Presque Isle County that were participating in the EWB or WRM programs, WS completed their initial risk assessment tool evaluation in three rounds from 2020 to 2022. Each round included the WS surveillance focus area for that year, and the first round began in Presque Isle County. In 2023, WS will re-administer the risk assessment tool for herds in Presque Isle County. Re-administration of the tool for herds in additional areas will be determined based upon available resources.		New
6	2022	Continue to educate hunters about the benefits of harvesting does and advocate for increasing doe harvest in the MAZ, MAZ Buffer Area, and Presque Isle County.	MDNR will continue to provide support for the MDNR Bovine Tuberculosis Coordinator position. This is a full-time position dedicated to organizing education and outreach activities, such as the multi-cooperative "Herd & Hunter: TB Connections" meetings, Wildlife Cooperative Rendezvous, and others. This position also opportunistically promotes the Hunter Access Program (through events, newsletters, in conversation, etc.), which provides technical assistance and tools to private landowners to reduce deer numbers on their property--including the promotion of antlerless harvest.		New
7	2022	Advocate for and explore opportunities to improve wild deer processor capacity within the MAZ.	MDNR and MDARD recognize the capacity for processing deer, as well as the capacity for custom processing of cattle, is limited and will participate in discussions on how to improve wild deer and cattle processing capacity within the MAZ. These discussions could include local stakeholders in the hunting and farming communities to ask what barriers are experienced when it comes to processing deer. Also, it is important to note that the Wildlife Conservation Order has language stating that deer harvested from DCPs cannot go to waste; therefore, processing capacity may impact the usage of DCPs. Additionally, MDARD oversees some grant programs that may have funding to support custom slaughter/processing facilities. This could be a good opportunity to combine resources to address this need.		New
8	2022	Develop an acceptable process to communicate when and where positive deer are found.	The online harvest reporting system asks hunters for GPS coordinates of their harvest locations, but this information is confidential and is converted to TRS-level information for disease purposes only. MDNR will explore other ways to communicate where TB-positive deer were found while still respecting hunter privacy. For example, MDNR could work with MDARD to share a map of township-level prevalence in the MAZ, including the cumulative number of TB-positive deer in each township divided by the total number of deer tested in that township in a given time period. This information could then be mailed to individual producers.		New

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9	2022	Find appropriate collaborators to examine if actions of the herd protection program impact free-ranging deer movement in the MAZ. If an effect is detected, consider what efforts may need to be implemented to mitigate the potential of infected deer traveling outside the MAZ secondary to protection of livestock food sources.	Herd protection programs using fencing to limit deer access to cattle resources are unlikely to drastically alter deer movement patterns on a large-scale. Deer will still move within their home ranges and are unlikely to move long distances (for example, outside of the MAZ) when relatively small areas or limited quantities of feed are restricted. Research ideas that explore farm biosecurity and habitat features that drive deer toward and away from farm resources and contact with cattle have long been a shared interest among agencies and academic researchers. If there is new evidence to suggest this may be a risk, MDNR may further explore this item with USDA WS, MDARD, and researchers (such as the NWRC/MSU team of Kurt VerCautern, Mitch Palmer, and Rique Campa), as funding and time may be available.		New
10	2022	Support the validation of the QuantiFERON Gold test.	MDARD will continue to collect and submit QuantiFERON Gold samples from caudal fold-suspect animals from the MAZ and Presque Isle County, as available and approved by the herd owner. Also, upon the identification of any new TB-infected cattle herds, MDARD will coordinate with USDA on this issue.		New
11	2022	Consider the addition of a secondary inspector to periodically attend EWB and WRM verifications to assist with consistency across verifications.	MDARD is in the process of conducting a review of the WRM and EWB program documents and processes. This review is focused on providing increased clarity in communications between inspectors, herd owners, and compliance personnel. This review will also consider a review of the program standards and identify the most efficient way to address any challenges in consistency.		New
1	2020	*High Priority* Require signed herd plans to be in place that outline expectations and ensure compliance with recommendations in advance of beginning a test and remove program.	This Recommendation has been implemented and herd plans have been created and are in place for the 3 current herds that are under test-and- removal programs. Herd Plans for any future TB infected herds will be developed and submitted to USDA Staff for review following receipt of USDA official modeling results and discussions with herd owners.	This recommendation has been implemented	Yes
2	2020	*High Priority* Develop and implement a system for complete herd reconciliations that ensures all animals are accounted for in 98% of the MAZ herds.	MDARD will review our current IR process and investigate ways to increase the number of animals that can be accounted for in the reconciliation process. We will focus on the herds with the highest rate of failure in IRs and work with those herd owners to improve results. The ability to reconcile 100% of animals in herds is dependent upon close to 100% tag retention rate. In available studies, the average ear tag retention rate is approximately 80% for adult cattle after 4 years and varies greatly between farms (sometimes being as low as 20%). This rate declines with the age of the animal and the length of time from the tag application date. To achieve full compliance, producers would have to be required to maintain and provide MDARD with full records and they may not be able to if a tag is lost and the animal can't be identified. From August 2019 through July 2020 there were 289 IR's conducted, including 25,664 animals. From these reconciliations 1,394 RFID numbers were placed on the watch list resulting in a 94.6% reconciliation rate.	Ongoing	Ongoing
3	2020	*High Priority* Require herds undergoing annual whole herd testing to save tags from animals that die on the farm between tests and present these tags to the testing staff when they arrive for whole herd testing.	See Response for Recommendation 2	Ongoing	Ongoing
4	2020	*High Priority* Require producers to keep records on animals they retag themselves including those going to the market. These records must be presented to the testing team at the time of the whole herd test.	See Response for Recommendation 2	Ongoing	Ongoing
5	2020	*High Priority* Require mandatory reporting by owners when animals are found to be missing on herd reconciliations.	See Response for Recommendation 2	Ongoing	Ongoing

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6	2020	*High Priority* Follow up with owners of previously infected herds every 180 days to ensure they are complying with the agreement of the quarantine release. Producers should be held to the agreement they made by signing the document and the document should be updated if there is a change in the program such as the EWB.	Based on the recommendations from the TB Review Team in 2020, MDARD has discontinued quarantine release herd plans and replaced them with Test-and-Removal herd plans. With this new protocol, the required testing post quarantine will be outlined in the quarantine release document, rather than an addendum to the quarantine release. MDARD will expire quarantine release addendums for herds under the previous model after three years. Herds will be required to follow all regulations applicable to the zone in which they are located following quarantine release. In the MAZ and PI counties, each herd is visited twice yearly for WRM programs, and each herd undergoes an annual Whole Herd Test. If positive herds are found outside the MAZ, required follow-up testing post quarantine release will be outlined in that document. MDARD will track these herds to ensure that subsequent testing is completed as required.	This recommendation has been implemented	Yes
7	2020	Review the MOU to confirm which information metrics should continue to be included in both semiannual and annual reports or if certain metrics should only be included annually and apply this to future MOUs.	Recommended changes to the current MOU reporting requirements have been developed and will be included in future MOU discussions.	Implemented	Yes
8	2020	Add new Presque Isle and Buffer County cattle surveillance reporting section into the semiannual and annual reports to capture surveillance data and activities required for these counties as part of the 2020 MOU.	Reporting of surveillance in Presque Isle County and the Buffer Counties were included in the FY 2020 annual report and will be included in future annual and semi-annual reports until such time as those programs are completed or replaced with alternate programs.	This recommendation has been implemented	Yes
9	2020	Define language in the next MOU that allows for buffer zone whole herd testing to replace required circle testing in areas of geographic and temporal overlap. Additional circle testing should not be required in areas where sufficient buffer zone whole herd testing has been completed in the previous 6-12 months or is ongoing.	Recommended changes to this section of the MOU have been developed and will be included in future MOU discussions.	Will complete in new MOU	Yes
10	2020	Consolidate all relevant documents containing components of the herd plan into a single document with supporting documents attached.	The herd plans that have been created and are in place for Herds #77, 79, and 80 are one pdf file. This herd plan format will continue with any future TB infected herds.	This recommendation has been	Yes
11	2020	Ensure copies of all documents are in paper file if that is to be used as reference file.	AID utilizes electronic files for the official records in the TB program. All AID staff are provided the tools and privileges necessary to access this electronic filing system 24 hours a day. Individual AID personnel may elect to and maintain their own paper-based filing system to assist in completion of assigned duties at their discretion, however, such filing systems should not be considered official files. AID will continue to encourage the use of electronic records and discourage the use of redundant paper filing systems.	Ongoing	Ongoing
12	2020	*High Priority* All of the 6 herds of 25 head or more that opted out of the EWB program should be monitored quarterly, four times per calendar year, for potential movement violations.	MDARD's current processes of annual testing and requiring pre-movement permits will be closely monitored in these herds to document that movements from these herds are direct to slaughter. These herds will undergo yearly testing and will require permits prior to movement. MDARD's permitting system will not allow creation of a permit for any destination other than direct to slaughter for these herds.	Ongoing	Ongoing
13	2020	*High Priority* Complete cattle testing in one third of the herds per the requirements of the MOU in Cheboygan, Crawford, and Otsego County by the end of calendar year 2020 and ongoing years.	Any cattle testing requirements that could have been necessary for 2019 deer surveillance shortfalls would be satisfied through testing that was conducted as part of the buffer county surveillance program during the April 1, 2020 through March 31, 2021 season. In the upcoming April 1, 2021 through March 31, 2022 buffer county surveillance season, MDARD will conduct any additional testing beyond the 150 herds included in that program, which may be necessary to meet the requirements of the MOU and the letter received from Dr. Burke Healey dated March 1, 2021.	Ongoing	Yes
14	2020	*High Priority* Initiate surveillance in free-ranging white-tailed deer per the requirements of the MOU in Cheboygan, Crawford, and Otsego County.	Surveillance in free-ranging deer is ongoing in the named counties. No-cost disease control permits and crop depredation permits continue to be offered in Cheboygan, Crawford, and Otsego counties. Targeted testing of sick deer occurs statewide year-round.	Ongoing	Ongoing

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15	2020	Define the specific MDNR testing interval for free ranging white-tailed deer using 365 day, 12 month, or calendar dates. This recommendation is based on discrepancies noted in section II, in 2 and 3 of the findings above.	The specific MDNR testing interval will continue to be based on calendar year, with harvest dates from January 1-December 31 st . While this interval has not changed, the description of these dates has been adjusted for clarity on emailed updates to partners as well as the website. Annual surveillance summaries will likely continue to be finalized around March of the following year based on timing for diagnostic results.	Completed	Yes
16	2020	Notate the start date of the 3-year test cycle for each free-ranging white-tailed deer circle test area in the annual report.	The start date of the 3-year test cycles will be noted in the annual report.	Completed	Yes
17	2020	MDNR should collaborate with MDARD and APHIS WS to facilitate increased public education and outreach.	<p>MDNR and MDARD do routinely collaborate, along with other partners on outreach and education for producers, sportsmen and the general public. These efforts are ongoing and we will work to continually improve the messaging to result in a clear understanding of program goals. Some of the plans that we are exploring include:</p> <ul style="list-style-type: none"> •Shift the content of “Herd & Hunter: TB Connections” meetings to a digital and print format while in-person gatherings cannot be held. Information will be available on the TB webpage, emailed to the DMU 487 hunter contact list, and included with print and digital copies of the cattle and hunter newsletters that will be made available in the spring and fall. •Develop new material to educate hunters on the human health risks of bTB in deer and steps they can take to help prevent exposure. •Identify new “community leaders” who are willing to share DNR and/or MDARD messages and information around their networks and communities. •Utilize Farm Bureau’s daily electronic news system to provide bTB information/updates year-round (previously, this resource was just used for head collection messaging during hunting seasons). •Expand the distribution and influence of select messages by utilizing the communication channels of key stakeholders. •Share deer observation and harvest data collected from DHIP and PLAN grant recipients with landowners who participated in the grants. DNR will analyze data and discuss results with participants in order to help inform the future deer management by these hunters and reinforce the importance of antlerless harvest. •Dedicate a portion of the recently hired Atlanta wildlife technician’s work hours to education and outreach with hunters and landowners in Alpena and Montmorency counties, which is the coverage area for that position. •Record an interview on bTB and deer management on MDARD’s podcast series, “Fresh from the Field.” •Refine and distribute communication materials that help to define and distinguish the WRM and EWB programs. •Create new educational resources for producers that identifies risk factors and pairs them with their solutions. 	Ongoing	Ongoing
18	2020	*High Priority* VS-Michigan should confirm that signed herd plans are in place that outline expectations and ensure compliance with recommendations in advance of beginning a test and remove program for each herd.	The MI AVIC will monitor progress with herd plan negotiations between MDARD and the producer. The MI epidemiology officer will not send out a work order request for any testing in the affected herd until the herd plan is in place.	Ongoing	Yes
19	2020	*High Priority* VS-Michigan should monitor and confirm MDARD is performing whole herd tests in one-third of the herds in Cheboygan, Crawford, and Otsego County by the end of calendar year 2020 and ongoing years.	The MI AVIC will monitor progress through semiweekly updates at Michigan Tuberculosis management meetings.	Ongoing	Yes

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20	2020	Recommend that APHIS WS personnel participate in an expanded role in the WRM and EWB verification activities due to their expertise in wildlife control efforts.	<p>APHIS WS will: 1. Conduct a winter and summer verification to ensure producers have completed recommendations from previous WRM verifications and that standards were correctly applied based on the principles of wildlife biology. 2. Offer voluntarily Targeted Deer Removal (TDR) to all producers. 3. Create a WRM map of the farms deemed highest risk by APHIS WS, documenting pasture boundaries (winter/summer), unprotected feed, water features, other wildlife attractants, etc. 4. Complete the Risk Evaluation Questionnaire. This should be viewed as an independent audit that can identify gaps in wildlife biosecurity on farms that received passing WRM verification. 5. Conduct monthly FLIR surveys and compile data using Survey 123 and the Collector applications for a period of one year. These surveys will offer a rough index of deer activity levels on the farm and allow APHIS WS personnel to assign a level of risk based on deer location and proximity to feed storage areas and livestock. 6. Group farms according to number of deer observed during FLIR Surveys, their location on the farm, and level of biosecurity observed on the farm</p> <p>Group #1 – farms needing immediate biosecurity upgrades: APHIS WS will meet with MDARD, once all premises have been evaluated, to discuss those farms that need immediate attention. MDARD/APHIS WS would create a solid plan for improvement. Group #2 – farms with minimum biosecurity in place, but with room for improvement: APHIS WS will meet with MDARD, once all premises have been evaluated, to discuss areas for improvement in the producer’s biosecurity plan. Future Activities: Starting in the winter of 2022: Begin implementation of this program on all WRM-verified farms in Montmorency and Alpena counties north of the Enhanced Wildlife Biosecurity (EWB) Zone (approximately 120 farms), as funding allows. Starting in the winter 2023: Begin implementation of this program on all WRM-verified farms in one of the buffer counties as determined by MDARD and APHIS WS outside of the MAZ, as funding allows -OR- WS resumes surveillance in Presque Isle County for one year after all the recommended changes have been made and the infrastructure is in place.</p>	Ongoing	Ongoing
21	2020	Recommend MDARD conduct an immediate evaluation of the EWB to determine if more cost-effective biosecurity methods can be implemented to separate deer from domestic livestock. If not, consider discontinuing the EWB and reallocating funding to higher value activities.	<p>The information that USDA WS collects in their projected work in response to item #22 will be used to improve both the overall WRM and the EWB programs. MDARD will compile the data that we collect on the effectiveness of the components of the EWB area in the next year. One known challenge in the EWB program is producer compliance with fully utilizing the infrastructure improvements that have been made on those farms. In the past year, we have shifted the role of the field wildlife biologist position at MDARD to more fully manage the EWB program and have streamlined our compliance activities for more rapid response to noncompliance issues. Having this position in the field and continually monitoring compliance will provide us with more detailed information about herd protections and areas for improvement. We strongly feel that the WRM/EWB programs are our best method for prevention of disease spill over to cattle and will continue to put resources toward these critical efforts.</p> <p>UPDATE April 2023: MDARD and USDA WS have attempted conducting an evaluation of the EWB Program to quantify the amount of risk reduction achieved by implementing this program. Due to the limited number of TB-infected herds identified and the inconsistency of data collection (due to improvements in identifying deer presence and movement), it is difficult to adequately complete this recommendation. No further attempts will be made on this recommendation. New Status: COMPLETED</p>	Discontinued	Discontinued

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22	2020	Continue and enhance the education and outreach efforts towards producer and sportsman groups.	<p>MDARD and DNR will continue to collaborate with other partners on outreach and education. Plans for possible areas of enhancement include:</p> <ul style="list-style-type: none"> -Shift the content of “Herd & Hunter: TB Connections” meetings to a digital and print format while in-person gatherings cannot be held. Information will be available on the TB webpage, emailed to the DMU 487 hunter contact list, and included with print and digital copies of the cattle and hunter newsletters that will be made available in the spring and fall. -Develop new material to educate hunters on the human health risks of bTB in deer and steps they can take to help prevent exposure. -Identify new “community leaders” who are willing to share DNR and/or MDARD messages and information around their networks and communities. -Utilize Farm Bureau’s daily electronic news system to provide bTB information/updates year-round (previously, this resource was just used for head collection messaging during hunting seasons). -Expand the distribution and influence of select messages by utilizing the communication channels of key stakeholders. -Share deer observation and harvest data collected from DHIP and PLAN grant recipients with landowners who participated in the grants. DNR will analyze data and discuss results with participants in order to help inform the future deer management by these hunters and reinforce the importance of antlerless harvest. -Record an interview on bTB and deer management on MDARD’s podcast series, “Fresh from the Field.” - Refine and distribute communication materials that help to define and distinguish the WRM and EWB programs. -Create new educational resources for producers that identifies risk factors and pairs them with their solutions. <p>UPDATE: April 2023-With the lifting of COVID-19 restrictions, seeking a print format for the Herd & Hunter meetings is no longer necessary. Instead, to increase attendance, the meetings are being offered in a hybrid format. Also, the podcast on bTB has been recorded and made available. The remaining outreach efforts are all in progress.</p>	Ongoing	Ongoing