

FAS 113 • December 2010 (Minor revision – destroy old)

# WILDLIFE RISK\*A\*SYST

## FOR BOVINE TB



The Wildlife Risk\*A\*Syst for Bovine TB Project is designed to help Michigan farmers reduce the risks of bovine TB spreading between wildlife and livestock. The project will provide risk-reduction information, on-farm assessments and technical assistance to help producers develop and implement Wildlife Risk Mitigation Action Plans.

This Wildlife Risk Mitigation Program document represents uniform, statewide standards and acceptable management practices based on sound science. It was developed with industry, university and multi-governmental agency input. As agricultural operations continue to change, new practices may be developed to address risk mitigation. New scientific discoveries and changing economic conditions require annual review of the bulletin and revision when necessary.

## TB Basics

### *Mycobacterium bovis*

The disease known to us as bovine tuberculosis (TB) is caused by the bacteria *Mycobacterium bovis*. *M. bovis* has a waxy outer coating that not only affords some protection from the elements but also protects it from the natural defenses of the animals it invades. Though cattle are the principal host of bovine TB, virtually any mammal (including humans) can be infected.

### Routes of Infection

The bacteria gains entry into a mammal in two main ways:

1. It can be inhaled. This is a very efficient means of causing infection as it takes only one bacteria to begin an infection.
2. The bacteria may be on or in something an animal eats or drinks. The oral route, however, requires a much larger number of bacteria than the inhalation route to cause an infection.

### Persistence of *M. bovis* in the Environment

Because of the waxy coating on the bacteria, it can survive for long periods of time in cool, moist, shady areas where it is protected from sunlight. Researchers have demonstrated that, if not exposed to direct sunlight, the bacteria can survive for up to 16 weeks at 32 degrees Fahrenheit and it survives for 7 days on all types of feed tested, even at 75 degrees Fahrenheit.

### How Infection with *M. bovis* Affects Animals

*Mycobacterium bovis* usually grows very slowly in the mammals it infects. An infected animal may not show any signs of illness for years, by which time the animal may have infected many other animals. The most characteristic sign of bovine tuberculosis is weight loss, but this becomes obvious only in the advanced stage of the disease. This is true for both cattle and wildlife infected with TB. When the bacteria infects the lungs, eventually respiratory signs will be seen, including coughing and shortness of breath.

### Historical Perspective

Bovine TB is not a new problem in Michigan. TB was frequently found in dairy and beef cattle in Michigan, and many other states, through the mid-20th century. In fact, Michigan was not declared free of bovine TB in cattle and bison until 1979. However, bovine TB has historically been a rare disease in wild deer. Before 1994, only eight wild white-

tailed or mule deer had been reported with bovine TB in North America and the disease had never been able to sustain itself in deer without continuing spillover infection from cattle.

In June 1998, bovine TB was confirmed in a beef cow in Alpena County. Since that time the disease has been confirmed in Michigan 50 times in cattle herds and four times in captive cervid herds. To date, bovine TB has been found in 668 wild deer, five wild elk and a variety of wild furbearers.

### Research on Transmission of bovine TB

For oral transmission to happen an uninfected animal must consume feed, water or milk contaminated with the infective organism. Research has demonstrated that the bacteria can be passed from deer to deer and between deer and cattle on contaminated feeds. This is why the Wildlife Risk Mitigation Project emphasizes providing adequate protection for feed in areas where there is deer pressure on cattle feed.

### Small Mammals

Researchers have also looked at small mammals that can become infected by feeding on carcasses of infected animals. The small mammals we have in Michigan do not develop overwhelming infections of bovine TB as the brush-tailed possum of New Zealand or the badger of Great Britain does. Nor have researchers found that Michigan's small mammals pass significant numbers of bacteria in either their feces or urine so as to pose a health risk to cattle. Because we have not found direct evidence in Michigan that small mammals pose a significant bovine TB risk to cattle the Wildlife Risk Mitigation Project encourages producers to have an active small mammals control program as part of good general management but does not require it.

### Elk & White-tailed Deer

Manitoba, Canada, has a significant problem with bovine TB in wild elk posing a health risk to cattle, but to date, only five elk have been found in Michigan with bovine TB. None of those had extensive disease that would have indicated they were consistently shedding bacteria. As a result the focus of farm-level biosecurity efforts in this booklet will be on white-tailed deer, while recognizing the remote possibility that infected elk could also pose a biosecurity risk for a farm. Throughout this bulletin, the term "wildlife" refers primarily to wild deer and elk and the term "livestock" refers primarily to cattle and bison.

## Reducing Bovine TB Risks

### Introduction

The ongoing presence of bovine TB in Michigan threatens the economic viability of the livestock industry. Depopulated TB-positive livestock farms can stand empty for months, causing a prolonged period of significantly reduced cash flow. Many of these previously infected farms have not gone back into cattle production after they were depopulated. Worldwide, bovine TB continues to cause losses in animal productivity as well as losses of markets due to a collapse of customer confidence. Michigan's experience with producers in the western Upper Peninsula has demonstrated the need to maintain customer confidence.

Once confidence is lost markets can rapidly dry up. Shipping even one bovine TB-infected animal out of an area where bovine TB exists could have a disastrous impact on that area's survivability as a cattle-producing area for years to come. We must not be lulled into complacency. The experience in both England and New Zealand demonstrates that when efforts to control and eradicate bovine TB are relaxed the disease rebounds with serious economic implications for the affected producers.

Michigan livestock producers, agricultural associations, the USDA/APHIS (Veterinary Services, Wildlife Services and the Natural Resources Conservation Service), Michigan State University Extension and the Michigan Department of Agriculture have launched the Wildlife Risk\*A\*Syst for Bovine TB Project to help Michigan livestock producers reduce the risks of bovine TB spreading between wildlife and livestock. The project provides staff-assisted on-farm assessments and one-on-one assistance to help producers develop and implement Wildlife Risk Mitigation Action Plans. Effective Wildlife Risk Mitigation Action Plans will help livestock producers protect their animals from bovine TB, help them to comply with potential future requirements for indemnity funds and maintain market access.

### Safety Nets

Michigan's bovine TB program might be thought of as a series of safety nets used to find the disease and to keep it from spreading. Whole-herd bovine TB testing of cattle, TB testing for movement with radio frequency identification, movement permits and slaughter surveillance have been the nets that Michigan's bovine TB program has used. All of these nets have one thing in common: cattle must first be infected in order to detect something.

The Wildlife Risk Mitigation Project introduces a net before any of the others – a biosecurity plan to reduce the risk of cattle becoming infected.

### Why are we doing this now?

During Round 1 (2008-2009) of the Wildlife Risk Mitigation Project many producers asked the question, *Why are we doing this now? After all we test all of our cattle every year. Isn't that enough?* The answer is no, just testing is not enough. We need a safety net in place that reduces the risk of cattle becoming infected in the first place.

### Bovine TB Test

The main reason that just testing is not enough is that the bovine TB test is only 85 percent sensitive. This means that if we tested 100 cows known to be infected with bovine TB, as many as 15 of those cows would test negative. We know that a newly infected cow will not respond to the TB test for at least 30 days and that on average it takes about five months for a newly infected animal to become infectious to other animals. Imagine what might happen if a breeding animal or a heifer diverted from feeder channels were to be infected with bovine TB but did not react to the test. That animal could be shipped to a farm in an area where there is no bovine TB and it could eventually infect its host herd. As infected animals from that host herd move untested to neighboring herds or herds in other areas the infection would continue to spread. So while the TB test is much better than no test, it is not 100 percent reliable.

### Protect Your Investment

There is much discussion about deer management on public and private lands in relation to this bovine TB problem. It would be a mistake to delay implementing a biosecurity plan for your farm while waiting for the risk of disease to be eliminated in the wild deer population. Even if the deer herd was dramatically reduced there would continue to be pockets of infection that would take years, even decades, to die out. The producer in an area where bovine TB exists in wildlife who wishes to continue to raise and sell cattle must face this reality head-on and devise a plan to protect his/her herd from the risks. The Wildlife Risk Mitigation Project (WRMP) has been developed to assist producers with this reality.

## A Progressive Approach

The project teams livestock producers with technical experts in a five-step process:

1. If possible attend an educational meeting
2. Complete an on-farm assessment
3. Commit to a WRM Action Plan
4. Implement the plan
5. Verify the plan as part of the project

The assessment tool in this bulletin (step 2 above) was designed for use principally in the upper portion of Michigan's Lower Peninsula. During Rounds 1 and 2, most producers elected to develop a Wildlife Risk Mitigation Action Plan immediately following their assessments and worked towards achieving Wildlife Risk Mitigated verified status for their herds through the project.

Some risk-reduction practices may take longer than others to put in place. Whatever the time frame, each Wildlife Risk Mitigation Action Plan for a herd provides the road map to reduce the risk of bovine TB spreading between wildlife and livestock.

## Cost-Share Funding

The state of Michigan and the U.S. Department of Agriculture (USDA) are partnering to help eligible farmers implement certain risk-reduction practices by making available a limited amount of cost-share funding in the Modified Accredited Zone (MAZ). In Round 3 (2010-2011), project partners are working to help producers better utilize the USDA Natural Resources Conservation Service (NRCS) Environmental Quality Incentives Program (EQIP). On-farm assessment personnel will provide information on how to request EQIP cost-share funding and what wildlife risk-mitigating practices qualify for NRCS assistance.

## Technical Assistance

Participating farmers will receive one-on-one guidance throughout the process.

## One Size Fits All Will Not Work

Animal health authorities and livestock industry leaders recommend a risk-based approach to prevent the spread of bovine TB. The project will team livestock producers with technical experts to match risk-reduction practices with the actual risk of exposure to bovine TB-infected wildlife on each particular farm.

Sixteen years of extensive testing by the Michigan Department of Natural Resources and Environment (MDNRE) show that the apparent prevalence of TB

infection among wild white-tailed deer varies dramatically across Michigan. The highest prevalence of the disease is found within northeastern Michigan's Deer Management Unit (DMU) 452, with low prevalence levels of TB-infected deer identified in the area immediately outside of DMU 452, and very few positive deer in the rest of the Lower Peninsula. The Upper Peninsula is recognized as a TB-free zone.

Allowing hunter access to farmland and using available MDNR permits are strongly recommended ways of reducing on-farm deer numbers and the risk of a cattle herd getting bovine TB.

While hunters work to reduce and ultimately eliminate bovine TB from Michigan wildlife, livestock producers must take specific actions to better separate wildlife from livestock and protect their livelihoods. While no single action will entirely eliminate the bovine TB risk, the biosecurity plan in the WRM Project focuses on three basic aspects of farm management where the cattle-wildlife interface is most likely to transfer the disease:

1. How cattle are fed.
  - Where cattle are fed
  - How often cattle are fed
  - How much cattle are fed
2. How cattle feed is stored.
3. How cattle are watered.

This is especially important during the winter when deer food sources are scarce and bovine TB bacteria can survive for months.

It is important to act on what we know about how bovine TB is passed between cattle and wildlife. As we continue to learn more about how the disease is transmitted the program will be updated to provide better protection from bovine TB.

## How Does the Assessment Process Work?

The *Wildlife Risk\*A\*Syst for Bovine TB* assessment is a series of risk questions about livestock management activities that are commonly addressed in a Wildlife Risk Mitigation Action Plan.

Some of these questions are educational in nature to highlight areas of risk that may be present in a herd's surroundings. Questions that have a green box around them deal with requirements for a farm to become verified as being Wildlife Risk Mitigated.

Once filled in, the *Wildlife Risk\*A\*Syst* bulletin is the producer's to keep.

The risk questions are grouped into five sections.

- General Farm Information
- Livestock Feeding Practices
- Feed Storage
- Livestock Water Sources
- Wildlife Activity

Not all questions will apply to all livestock farms. Producers answer each question by selecting the statement that best describes conditions on their farm. Producers should keep in mind how their livestock management activities change from season to season.

The Wildlife Conservation Act's "Normal Agricultural Practices" were adopted by the Michigan Agriculture Commission in January 2008 and fall under the Right-to-Farm Act. The practices, coded in *green bold italic print*, were developed to provide producers and growers with compliance assistance information.

MDA, USDA Wildlife Services (WS) or Veterinary Services (VS) field staff members will assist each producer in assessing his/her risks and developing a specific Wildlife Risk Mitigation Action Plan for their farm. Once the plan is agreed upon the producer will get a copy of his/her Wildlife Risk Mitigation Action Plan.

The field staff will assist a producer in understanding what is required for the farm to be verified as having an implemented Wildlife Risk Mitigation Action Plan and what regulatory timelines the producer needs to be aware of. If there are practices that need to be completed for the plan to be verifiable those will be noted. It is up to the individual producer to determine the target date when various practices will be implemented.

## Wildlife Risk Mitigation Project Timelines

- The main focus of Round 1 (2008-2009) was on breeding cattle in what was the 13-county Modified Accredited Zone.
- In Round 2 (2009-2010), the main focus was on those producing feeder cattle in townships where the apparent prevalence of bovine TB is the highest (see map on page 5) AND upon those producing feeder calves in Antrim, Charlevoix, Cheboygan, Crawford, Emmet and Otsego counties.
- In Round 3 (2010-2011), the WRMP will work with those who were not serviced in Rounds 1 and 2.

## Getting Started

Producers can contact the Michigan Department of Agriculture (MDA) to request a farm visit and assessment by calling 517-373-1077. The MDA will schedule a visit at the producer's convenience to conduct the assessment and potentially start the process of developing and implementing a Wildlife Risk Mitigation Action Plan. Completion of an assessment does not obligate a producer to participate in the project.

## Recognition

The project recognizes farmers who make notable progress in reducing risks and protecting both their livestock and their customers from bovine TB. When risk-reduction objectives are verified as having been met, the producer will receive a dated letter from the project stating that the farm has a Wildlife Risk Mitigation Action Plan in place.

The initial verification might be done at any time of the year. Ongoing reviews of each participating farm's Wildlife Risk Mitigation Action Plan will take place between December 15 and March 15 each year.



# General Farm Information

Risk question	Low Risk – 3 (recommended)	Medium Risk – 2 (potential hazard)	High Risk – 1 (significant hazard)	Your Risk	Records or evidence needed for WRM project verification
<b>1.01</b> Have TB-infected livestock been present on these premises in the past 20 years?	No.		Yes.		
<b>1.02</b> How close is the nearest livestock farm that has been known to be TB-infected?	Greater than 10 miles.	Less than 10 miles.	Fence-line contact exists between infected livestock and farm livestock.		
<b>1.03</b> Are livestock housed in buildings or confined areas (example: dry lot or feedlot)?	Animals are completely confined all year round. <b>(If confined, score question 1.04 as Low Risk.)</b>	Animals are sometimes confined and sometimes out on pasture.	Livestock are predominantly out on pasture.		
<b>1.04</b> If livestock are pastured, do they have access to areas of deer habitat? <b>Be sure to discuss all pastures including leased properties.</b>	No		Yes.		Inspection of livestock pastures.
<b>1.05</b> How close to livestock are the nearest areas that provide good deer habitat?	Greater than 1 mile. The farm is located in open areas with little natural deer habitat.	Between ¼ mile and 1 mile.	Less than ¼ mile.		
<b>1.06</b> How frequently have you seen deer or evidence of deer (examples: deer tracks or droppings) in your summer pastures?	Deer are observed less than once a month in summer pastures.	Deer are observed less than once a week in summer pastures.	Deer are observed one or more times a day in summer pastures.		

A boxed risk level indicates the level required for WRM project verification. **Green bold italic print** indicates conformance with the Wildlife Conservation Act's Normal Agricultural Practices.

Comments:

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# Livestock Feeding Practices

Risk question	Low Risk – 3 (recommended)	Medium Risk – 2 (potential hazard)	High Risk – 1 (significant hazard)	Your Risk	Records or evidence needed for WRM project verification
2.01) During the non-grazing season, how often are cattle fed?	Once a day for cattle fed outside. <b><i>Livestock feed is managed to minimize the quantity of remaining feed by limiting feed materials to daily needs.</i></b>	Less often than once a day where cattle are fed outside but are confined to a small area and are continuously close to the feed.	Less often than once a day where cattle are fed outside area and do not remain with their feed continuously.		Inspection of livestock feeding practices.
2.02) During the non-grazing season, where are the cows fed?	Livestock are fed within buildings or fenced feeding enclosures capable of preventing deer intrusions (8-foot fences).	Livestock are fed within 100 yards of barns or at least more than 100 yards from deer cover where practicable.	Feed is put in an open pasture within 100 yards of good deer cover.		Inspection of livestock feeding location(s).
2.03) During the non-grazing season, how frequently have you seen deer or evidence of deer (for example: deer tracks or droppings) in livestock feeding areas?	<b><i>Regular monitoring of livestock feeding facilities</i></b> indicates no evidence of deer in livestock feeding areas.	Deer have been seen or evidence of deer has been found no more than once a month.	Deer have been seen or evidence of deer has been found at least once a week.		
2.04) What is the condition of the fence around feeding areas?	Well-maintained 8-foot fence capable of preventing deer intrusions.		Standard livestock fence designed to keep livestock in.		
2.05) If livestock feeding areas during the non-grazing season are not enclosed, are other methods used to prevent wildlife access to livestock feed materials?	<b><i>Yes. Examples include using of yard lighting of feeding areas, guard animals and covering residual feed materials.</i></b>		No other methods are used.		
2.06) Where are salt and mineral supplements located?	Salt and mineral supplements are located in farm buildings or within small fenced areas where the cattle are continuously present.	Salt and mineral supplements are located at least 100 yards from deer cover, where practicable.	Salt and mineral supplements are located in open pastures more than 100 yards from farm buildings and within 100 yards of deer cover.		Inspection of how salt and mineral supplements are presented to cattle.

A boxed risk level indicates the level required for WRM project verification. ***Green bold italic print*** indicates conformance with the Wildlife Conservation Act's Normal Agricultural Practices.

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# Feed Storage

Risk question	Low Risk – 3 (recommended)	Medium Risk – 2 (potential hazard)	High Risk – 1 (significant hazard)	Your Risk	Records or evidence needed for WRM project verification
<b>3.01</b> Are grain and concentrates stored in such a way as to prevent access by deer?	<b>Yes. Feed storage facilities, such as grain bins, are completely sealed. Storage facilities are regularly monitored for access by wildlife.</b>	<b>Feed is piled on solid surface or on the ground only for temporary storage. Storage facilities are regularly monitored for access by wildlife.</b>	No. Feed is stored outside completely accessible to wildlife.		Inspection of livestock feed storage areas.
<b>3.02</b> How frequently do you see deer or find evidence of deer in feed storage areas?	Never.	One time per month or less during seasons when deer pressure is highest.	More than one time per month during seasons when deer pressure is highest.		
<b>3.03</b> How has livestock feed (such as hay, silage and haylage) that you are feeding on this farm been stored on this farm since it was harvested? This would include both farm-grown and purchased hay/forage.	<b>Hay/forage storage prevents access by wildlife:</b> -Inside enclosed barns or lean-to shelters, or -Fenced to exclude wildlife, or -Stored in upright silos.	<b>Hay/forage is covered with a protective cover. Feed storage facilities are semi-protected, such as open bunker-type silos where feed may be covered. Storage areas are regularly monitored for wildlife or signs of wildlife presence.</b>	No fencing or other means of protection is used. Evidence of wildlife feeding may or may not be present.		Inspection of livestock feed storage areas.
<b>3.04</b> When are hay bales removed from the field?	Hay is removed from the field immediately after it is baled.	<b>Producers should remove hay bales from the field in a timely manner. Hay bales are left in the field after baled but removed before Nov. 15.</b>	Hay is left in the field after Nov. 15.		Inspection of hay fields for the presence of bales.

**A boxed risk level** indicates the level required for WRM project verification. **Green bold italic print** indicates conformance with the Wildlife Conservation Act's Normal Agricultural Practices.

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# Livestock Water Sources

Risk question	Low Risk – 3 (recommended)	Medium Risk – 2 (potential hazard)	High Risk – 1 (significant hazard)	Your Risk	Records or evidence needed for WRM project verification
4.01) What livestock water sources are provided?	Livestock drink year round from either: 1) Artificial water sources (examples: water tanks, troughs or individual waterers located near buildings), or 2) Constructed/restricted-access natural water sources.	Livestock have access to natural water sources including lakes, rivers, streams and ponds without deer cover around them.	Livestock have year round access to wetlands, swamps, lakes, rivers, streams and ponds with deer cover around them.		Inspection of livestock water sources.
4.02) How frequently do you see deer or find evidence of deer drinking from livestock water sources?	Never.	One time per month or less during seasons when deer pressure is highest.	More than one time per month during seasons when deer pressure is highest.		

**A boxed risk level** indicates the level required for WRM project verification. **Green bold italic print** indicates conformance with the Wildlife Conservation Act's Normal Agricultural Practices.

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# Wildlife Activities

Risk question	Low Risk – 3 (recommended)	Medium Risk – 2 (potential hazard)	High Risk – 1 (significant hazard)	Your Risk	Records or evidence needed for WRM project verification
5.01) What is the likelihood of finding bovine TB-infected free-ranging white-tailed deer in your area (on the basis of DNR surveillance data)?	Farm is located in the Modified Accredited Advanced Zone.	Farm is located in the Modified Accredited Zone but not in DMU 452.	Farm is located in DMU 452.		
5.02) What measures are used to reduce the on-farm presence of deer?	Excess deer are harvested as needed by making farmland available to hunters and utilizing DNR permits (as available).	Deer are harvested during the hunting season.	No deer are harvested on the farm.		
5.03) Are agricultural by-products and/or culled or unmarketable commodities land applied on this farm?	<b>Such commodities are managed in a manner to minimize the congregation of and close contact between wildlife:</b> -Spread over the soil, and/or -Applied to fields away from areas frequented by deer and elk.		Disposal methods promote congregation and close contact of wildlife. -Piles of commodity in the field(s), and/or -Applied to field areas frequented by deer and elk.		Inspection and/or photographic evidence of commodity management.
<b>If not applicable, score at Low Risk.</b>					
5.04) What control measures are used with small mammals?	Small mammals are regularly trapped and removed from the farm complex.	Small mammals are occasionally trapped and removed from the farm complex.	No effort is made to control the presence of small mammals around the farm complex.		

**A boxed risk level** indicates the level required for WRM project verification. **Green bold italic print** indicates conformance with the Wildlife Conservation Act's Normal Agricultural Practices.

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For more information about bovine tuberculosis, see the MDA's Emerging Diseases web site: [www.michigan.gov/emergingdiseases](http://www.michigan.gov/emergingdiseases).

**Sample Wildlife Risk Mitigation Action Plan**

Risk Question — Specific Standard	Action Plan	Planned Completion Date
1.04 Cattle are not permitted at any time to graze or feed in non-agricultural areas providing deer habitat.		
1.04 Cattle do not shelter in areas of deer habitat		
2.01 Cattle are fed daily AND/OR cattle are confined so they are continuously with their feed OR small herds of cattle are fed as close to the barn as possible. <i>Specify which situation is applicable.</i>		
2.02 Cattle are fed within buildings or fenced feeding enclosures capable of preventing deer intrusions (8-foot fences) OR at least 100 yards from deer cover where practicable. <i>Specify which situation is applicable.</i>		
2.06 Salt blocks and mineral supplements are located in farm buildings OR within small fenced areas where the cattle are continuously present OR at least 100 yards from deer cover where practicable. <i>Specify which situation is applicable.</i>		
3.01 Grain and concentrates are being stored in such a way as to prevent access by deer. <i>If applicable, specify how the grain and concentrates are protected.</i>		
3.03 Silage and/or haylage are effectively protected from contamination by deer with a barrier. <i>If applicable, specify how the silage/haylage is protected.</i>  Hay is effectively protected from contamination by deer with a barrier. <i>Specify how the hay is protected.</i>		
3.04 Hay is off the field and stored by Nov. 15.		
4.01 There is access to an approved watering source year round. <i>Specify how the cattle are watered.</i>		
4.01 01 Cattle drinking from natural water sources have access to a constructed restricted- access natural water source. (Encouraged)		
5.03 Waste or spoiled commodities are well spread so as to prevent wildlife congregation. <i>If applicable specify how.</i>		
5.02 Producer uses disease control permits. (Encouraged)		
5.04 Producer is actively working to control small mammals on the farm. (Encouraged) <i>Specify how the producer is working to control small mammals on the farm.</i>		

**Sample Wildlife Risk Mitigation Verification Plan**

	YES	NO	COMMENTS
<b>1. Pasturing of cattle</b>			
Cattle do not graze or feed in non-agricultural areas providing deer habitat.			
Cattle do not shelter in areas of deer habitat.			
<b>2. Frequency of feeding for cattle fed outdoors during the non-grazing season</b>			
Cattle are fed daily AND/OR cattle are confined so they are continuously with their feed OR small herd of cattle is fed as close to the barn as possible.			
<b>3. Feeding location for cattle that feed outdoors during the non-grazing season</b>			
Cattle are fed at least 100 yards from deer cover where practicable.			
<b>4. Presentation of salt blocks and mineral supplements</b>			
Salt and other mineral supplements are located in or within 100 yards of buildings OR in areas where the cattle are confined and present continuously OR at least 100 yards from deer cover.			
<b>5. Storage of grain and concentrates</b>			
Grain and concentrates are stored in such a way as to prevent deer access.			
<b>6. Storage of silage, haylage and hay</b>			
Silage and/or haylage is effectively protected from contamination by deer with a barrier. How?			
Hay is effectively protected from contamination by deer with a barrier. How?			
Hay is stored by Nov. 15.			
<b>7. Livestock watering</b>			
Cattle have access to an approved watering source year round.			
Cattle drinking from natural water sources have access to a constructed/restricted-access natural water source. (Encouraged.)			
<b>8. Management of waste or spoiled commodities (where applicable)</b>			
Waste or spoiled commodities are distributed so as to prevent wildlife congregation.			
<b>9. Wildlife management on the farm</b>			
Producer uses disease control permits. (Encouraged)			
Producer is actively working to control small mammals on the farm. (Encouraged) How?			

To request a Wildlife Risk Mitigation assessment, contact the Michigan Department of Agriculture:  
517-373-1077



## **Wildlife Risk\*A\*Syst for Bovine TB Project Partners**

Alpena Conservation District  
Michigan Cattlemen's Association  
Michigan Department of Agriculture  
Michigan Department of Community Health  
Michigan Department of Natural Resources and Environment  
Michigan Farm Bureau  
Michigan Milk Producers Association  
Michigan State University Extension  
USDA Veterinary Services  
USDA Wildlife Services