

Feral Swine in Michigan – Disease Surveillance Procedures Manual

Developed and endorsed by the Michigan Feral Swine Working Group (FSWG) – with representatives from the Michigan departments of Agriculture (MDA) and Natural Resources (MDNR), the United States Department of Agriculture (USDA) Veterinary Services (VS) and Wildlife Services (WS), the Michigan Pork Producers, Michigan State University (MSU) and MSU Extension, the Michigan United Conservation Clubs, the Michigan Farm Bureau, and the Michigan Deer-Elk Association.

Background:

Feral swine have the potential to carry a variety of diseases that could threaten domestic swine, humans, or wildlife. A disease surveillance system has been developed by the FSWG to monitor for such diseases, including pseudorabies virus (PRV), swine brucellosis (SB), classical swine fever (CSF), bovine Tuberculosis (TB), and trichinosis. Because the distribution of feral swine in Michigan is scattered, it has been difficult to target animals for agency harvest using traps and/or shooting. Therefore, the FSWG relies on acquiring animals collected by hunters or from other means (e.g. animals found dead on the road or collected by local animal control agencies). It is important to note these methods are not ideal for collecting disease surveillance samples. Following the procedures outlined in this manual will facilitate the collection of samples consistent with standardized disease sampling procedures.

Information and data:

There is a list of contacts and online references available at the end of this manual should you have any questions about sampling procedures or other feral swine issues. You may also visit the listed Web sites containing information on feral swine in Michigan and the associated disease risks.

It is very important for the FSWG to collect information regarding locations of feral swine activity and disease surveillance data, because the risk of disease transmission to commercial swine is high. The elimination of feral swine from Michigan is necessary to protect Michigan's food system and the \$230 million commercial swine industry.

There are currently two databases containing information on feral swine throughout the state: one containing all swine activity/sightings and one containing the disease surveillance data. MDNR manages the swine locations database and USDA WS manages the disease surveillance database. Information contained in these databases is shared by all the agencies represented in the FSWG. Please report all sightings or evidence of feral swine activity to MDNR. If an animal is collected/harvested, and any disease tests are to be conducted, please contact USDA WS, in addition to the MDNR.

Blood samples:

Blood samples collected from feral swine in Michigan should be submitted for disease testing to MDA's Geagley Laboratory, 1615 S. Harrison Rd, East Lansing, MI 48823. You may contact the laboratory with submission questions at (517) 337-5040. There is no charge to have the tests conducted.

The most important sample to collect from feral swine is blood, as it can be used to test for the primary diseases of concern. Blood samples are also relatively easy for hunters to collect and submit to the lab by utilizing blood sample collection kits. The drawback to using the blood kits is the person harvesting the animal needs to have kits on-hand prior to or almost immediately after the time of the kill.

Blood sample collection kits are designed to be easy and efficient. Each kit contains an instruction and data sheet, a carcass/head tag, two vacutainers (10 ml red-top), a plastic disposable pipette, and a pair of disposable gloves, all of which are contained in a prepaid shipping container that, once the blood is collected, should be sent directly to the Geagly Lab. The instructions state that if the person is willing to submit the head and/or whole carcass, to attach the tag and submit it to a local MDNR field office (online directory available at <http://tinyurl.com/pjno5>). MDNR staff will be responsible for delivering the head/carcass to the Michigan State University (MSU) Diagnostic Center for Public and Animal Health (DCPAH).

Blood collection kits have been assembled and are available when the potential exists they will encounter feral swine in the field. Kits have been distributed to certain MDNR field offices for people to pick up, or can be shipped directly to individuals. For questions regarding the blood collection kits, or to request kits, contact USDA-WS or the MDNR Wildlife Disease Lab.

If blood kits are unavailable, blood should be collected using red-top tubes. Whole blood should be refrigerated (not frozen) and allowed to clot until delivery to the lab. Serum may be separated off prior to submission and should be frozen if delivery is not possible within three days of collection. A simple datasheet, including contact information of the collector, date and location, and other information, should be filled out and accompany the blood to the lab (a sample datasheet can be found at the end of this document).

A situation may arise when somebody has recently killed a feral hog and is asking about desired samples, but does not have a blood kit. In this situation, the person should be instructed to collect as much fresh blood (pooled in chest cavity) as possible in a clean container (e.g. Tupperware, clean empty soda bottle, etc.). They should place the container in a cool place away from direct sunlight and keep it undisturbed to allow the blot to clot and separate. Notify USDA-WS as soon as possible and blood kits can be shipped over-night to the individual, who can then collect and ship the sample directly to the lab.

Once received at the Geagley Laboratory, the samples will be tested for PRV and SB. Serum will also be forwarded from the Geagley Lab to the USDA Foreign Animal Disease Diagnostic Laboratory, Plum Island, New York to be tested for CSF. The

remaining serum will be forwarded to the National Feral Swine Serum Archive in Ft. Collins, Colorado.

Tissues samples and whole or partial carcasses

Whenever possible, it is best to submit a whole carcass for disease testing. Necropsies will be conducted at DCPAH, collecting the best possible samples and doing so in a clean environment. However, it is not always possible to submit the entire carcass due to a variety of reasons (e.g. hunter unwilling to give up the meat, storage/transport issues). The next best option to the entire carcass would be to submit the head and internal organs. A hunter may wish to keep the skull for a trophy and arrangements will be made to return the skull after samples are collected.

All samples, other than blood, from feral swine should be submitted for disease testing at DCPAH, 4125 Beaumont Rd, Lansing, MI 48910. There is no charge to have the tests conducted. Depending on the tissues submitted, DCPAH can test for PRV, bovine TB, trichinosis, and CSF. Because a particular DCPAH submission form needs to be completed in a specific manner, including billing information, all submissions **MUST** go through MDNR. Therefore, please contact MDNR Wildlife Disease Laboratory prior to delivery.

The public may submit feral hog carcasses or heads and internal organs to their local DNR field office (online directory available at <http://tinyurl.com/pjno5>). DNR staff will be responsible for delivering the head/carcass to DCPAH. A datasheet should be filled out upon drop-off and must accompany the animal to the lab (a sample datasheet can be found at the end of this document).

Most hunters are willing to submit the entire viscera (gut pile) and head (again, the skull can be returned if desired); however, there may be certain instances where a field necropsy is necessary. If the whole carcass or head is unavailable, a field necropsy can be conducted and only the necessary tissues submitted. Tissue samples, however, may only be collected by trained individuals to ensure the correct tissues are collected, and that they are handled and processed correctly. For more information on who may be available to collect tissues out of the lab, see contact directory below.

Tissues to collect by trained individuals:

Head - tonsils, cranial lymph nodes (medial retropharyngeal, submandibular, and parotid), tongue, skeletal muscle (usually masseter).

Thorax - thoracic lymph nodes (tracheal-bronchial, mediastinal), lungs (if lesions observed).

Abdomen - mesenteric lymph nodes, and spleen.

All tissues should be divided with a section of each sample placed in formalin and the remainder refrigerated/frozen. If conducting a field necropsy, remember to also collect blood and submit to MDA's Geagley Laboratory (see blood section above).

Contact Directory:

USDA-Wildlife Services – 517-336-1928

David Marks

david.r.marks@aphis.usda.gov

Tim Wilson

timothy.s.wilson@aphis.usda.gov

USDA-Veterinary Services - 517-324-5290

Colleen Bruning-Fann

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MDNR – Wildlife Disease Lab – 517-336-5030

Kristine Brown

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Tom Cooley

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MDA – Animal Industry Division – 517-373-1077

Angela Butler

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Karla Christenson

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MDA Geagley Laboratory 517-337-5040

martint@michigan.gov

Useful Web sites:

Feral swine in Michigan -

<http://www.michigan.gov/dnr/0,1607,7-153-10363-155439--,00.html>

Disease risks associated with feral swine -

http://www.michigan.gov/documents/mda/Hutton_Pig_Paper_218759_7.pdf

Michigan emerging diseases –

<http://www.michigan.gov/emergingdiseases>

USDA feral swine informational brochure –

http://www.aphis.usda.gov/publications/wildlife_damage/content/printable_version/feral%20pigs.pdf

Michigan counties that allow the shooting of feral swine –

http://www.michigan.gov/images/emergingdiseases/FSopencountiesMDAmap081507_205747_7.jpg

Feral Swine – Disease Surveillance Submission Sheet

Submission includes (circle): entire carcass / head / internal organs / blood /
or specific tissues (list): _____

Collector Information

Name Phone number

Address: City State Zip Code

Would you like to be notified of test results? Yes / No

Feral Swine Information

Collection Date County Latitude/Longitude or Town/Range/Section

Collection site address or nearest road intersection

Male / Female Adult / Juvenile
Sex Age class approx. weight

Number of swine seen but not removed Number of fetuses (if pregnant sow)

Habitat (circle): 1. Rural / Urban
2. Wetland / Forested / Open field / other _____

Please fill out all known additional location information (in miles):

Distance to nearest farm with domestic swine _____
Distance to nearest captive swine shooting facility _____
Distance to nearest landfill _____
Distance to nearest airport _____

Please notify David Marks (USDA) prior to submission to lab, or for any questions regarding sample submission procedures.
Office – 517-336-1928
Email – david.r.marks@usda.gov