Wildlife Disease Lab
2016 Winter Recap
[Graphic: Michigan Department of Natural Resources Logo]

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Managing for Healthy and Sustainable Wildlife Populations

Responsible for monitoring the health and well-being of the wildlife in the State of Michigan, the Wildlife Disease Lab (WDL) is most often associated with necropsy work, but there is a lot more that happens behind the scenes! Read on to learn more about work the WDL staff worked on this winter!

[Graphic: Group photo of the wildlife disease lab team in April 2017]

Chronic Wasting Disease (CWD) Surveillance

GPS Goal 1.3.2

A big thank you to field staff for helping facilitate the submission of over 5,000 white-tailed deer during the 2016 hunting season for CWD surveillance testing. Even several field staffers and Russ joined in on the efforts!

With continued submissions through Disease Control Permits, roadkill collection, and sampling by USDA–Wildlife Services within the management zone the Division is able to continue surveillance.

To date, the department has tested over 12,600 free-ranging white-tailed deer within the state finding 9 confirmed positives.

Updated totals can be found at: mi.gov/cwd

[Graphic: Chief Russ Mason assisting with CWD surveillance]

Tuberculosis (TB) Surveillance

GPS Goal 1.3.2

The apparent prevalence of bovine tuberculosis (TB) in free-ranging deer in DMU 452 was 2% in 2016. That was down from 2015 (2.7%), but still higher than 2014 (1%). In the rest of the 5 county (Alcona, Alpena, Montmorency, Oscoda, Presque Isle) endemic area, prevalence was 0.3% in 2016, unchanged from 2015.

Thanks again to field staff for sample collection and delivery as well as those that joined us in our testing! Over 12,000 deer were tested this season for TB!

Since April 2016, six cattle herds and two feedlots have become infected with TB, putting Michigan’s Memorandum of Understanding with USDA, and the state’s split-state TB accreditation status for cattle, in jeopardy.

[Graphic: Group photo of the wildlife disease lab near deer carcasses]

[Graphic: Complex map of prevalence of bovine tuberculosis for assistance call 517-336-5030]
**Bat Surveillance**  
**GPS Goal 1.3.4**

Bats that are involved in exposures to humans, and domestic or agricultural animals are collected and submitted for rabies testing to the Michigan Department of Health and Human Services. Those that test negative then come to the lab and are archived until March when Al Kurta of EMU assists in identifying each bat to species, age class, and sex.

This data collection began in 2008 due to an increase in submissions and rabies positive bats in 2007. The goal was to determine whether the increase was accurate or an artifact of press coverage. This data allows us to evaluate trends in species within Michigan.

![Bat with wings spread]

![Members of the disease lab inspecting dead bats]

<table>
<thead>
<tr>
<th>Species</th>
<th>Annual average percent of bats by species</th>
</tr>
</thead>
<tbody>
<tr>
<td>Big Brown Bat (Eptesicus fuscus)</td>
<td>94.20 %</td>
</tr>
<tr>
<td>Little Brown Bat (Myotis lucifugus)</td>
<td>4.57%</td>
</tr>
<tr>
<td>Red Bat (Lasiurus borealis)</td>
<td>0.35%</td>
</tr>
<tr>
<td>Northern long-eared bat (Myotis septentrionalis)</td>
<td>0.24%</td>
</tr>
<tr>
<td>Silver-haired bat (Lasionycteris noctivagans)</td>
<td>0.21%</td>
</tr>
<tr>
<td>Myotis sp.</td>
<td>0.19%</td>
</tr>
<tr>
<td>Hoary Bat (Lasiurus cinereus)</td>
<td>0.16%</td>
</tr>
<tr>
<td>Unknown</td>
<td>0.06%</td>
</tr>
<tr>
<td>Eastern Pipistrelle (Perimyotis subflavus)</td>
<td>0.02%</td>
</tr>
</tbody>
</table>

**Bat Fact**

You can distinguish an evening bat (Nycticeius humeralis) from a big brown bat (Eptesicus fuscus) by the upper incisors. An evening bat only has one pair and the big brown has two. The photos to the right are for comparison.

![Open mouth showing incisors of the big brown bat]

![Open mouth showing incisors of an evening bat]

**Black Bear Harvest Tooth Analysis**  
**GPS Goal 1.2.2**

Data collection for black bear ages and female reproductive patterns from hunter-harvested bear from the 2016 season were just finalized! Ages were uploaded and made available to hunters on April 1st and
data from reproductive patterns and tetracycline exposure will be used to calculate population estimates for planning future hunting seasons.

**Tetracycline Screening**
A central section of the root tip is cut from submitted premolars. The section is put on a slide and visualized under a microscope with UV light.

If a bear has taken a tetracycline bait in the field, a band in the tooth section will show bright yellow.

**Aging and Reproductive Pattern Assessment**
Sections are then decalcified and stained, and the annual deposition rings (annuli) are counted like rings of a tree to age the bear.

Adult female bears normally have cubs every other year and undergo additional nutritional stress while nursing - a tooth section from such a bear will show less cementum growth between annuli in years of cub production.

Overlay of the tetracycline image and the stained tooth section shows what year during the bear’s life it was exposed to tetracycline.

[Graphic: Black bear tooth sections from four-year-old black bear]
[Graphic: Tooth section showing a positive reading for tetracycline]
[Graphic: Decalcified and stained tooth section showing bear was two at harvest]
[Graphic: Overlay of tetracycline and aging images shows bear took tetracycline in the summer before it turned two]

**Try it out!**
To the left is an image of a female bear tooth. Can you tell how old this bear was at harvest? Can you tell how many times it was pregnant?

[Graphic: Cross section of black bear tooth]
[Graphic: Illustration of binoculars]

Find answers on the last page below ‘Meet the Staff’.

**Help with our Spring Surveillance**
**GPS Goal 1.3.4**

**West Nile Virus (WNV)**
Affects waterfowl, songbirds, raptors, turkeys.
Symptoms include neurological or abnormal behavior such as an inability to fly or walk, swimming in circles, or exhibiting a lack of fear of humans.

In 2016 the lab diagnosed 2 mammalian cases and 66 bird cases (24 corvids, 42 non-corvid).

**Highly Pathogenic Avian Influenza (HPAI)**

Affects migratory waterfowl (ducks, geese, and swans), shorebirds, gulls, quail, pheasants, and domestic poultry.

Symptoms often do not occur in wild birds, but may include sudden death, neurologic signs, difficulty walking, nasal discharge, and sneezing or coughing.

In 2016 no HPAI cases were found. The last reported Michigan cases were in 2015 in Canada geese.

**Canine Distemper**

Affects wild and domestic carnivores.

Symptoms include seizures, activity at abnormal times of day, lack of fear of humans and pets, near residences/kennels, matting of the eyes, diarrhea, and breathing difficulties.

In 2016 the lab diagnosed 135 cases (raccoon, skunk, gray fox, coyote, gray wolf, mink, and short-tailed weasel).

If you collect an animal for testing of any disease, please contact the lab at (517) 336-5030 for sampling methods. Precautions should always be taken when handling sick or dead wildlife: wear gloves, and wash hands after handling.

[Graphic: Cartoon image of a Canada goose]

**2016 Publications**

**GPS Goals 1.3.4**


Meet the Staff

Wildlife Disease Lab Section Supervisor, Dr. Kelly Straka, began working for the Disease Lab in July of 2016. Previously, she was the State Wildlife Vet for the Missouri Department of Conservation (MDC) where she developed the State’s Wildlife Health Program from the ground up.

Originally from Minnesota, Kelly received her Doctorate in Veterinary Medicine and a Master’s Degree in Epidemiology from the University of Minnesota. During her career she has also worked as a research biologist (Environmental Testing Lab – Minnesota), endangered species biologist (USFWS - Hawaii), and wildlife specialist (MN DNR).

Kelly and her husband Tom have two amazing boys (Dylan, 3 and Charlie, 7 months). They enjoy many outdoor activities such as hunting, camping, and running extreme distance races!

[Graphic: Image of Dr. Kelly Straka]

‘Try it out’ answer: 7 years old, with 2 sets of cubs.

Contact

To contact the Wildlife Disease Lab, call our main line at:

517-336-5030

Report All Poaching (RAP) Hotline 800-292-7800

Useful Links

Wildlife Disease Manual

Diseased Wildlife Reporting Form

For more information go to: mi.gov/dnr