



- THE **MICHIGAN WILDLIFE CONSERVANCY** IS A 38-YEAR-OLD, NON-PROFIT ORGANIZATION LOCATED IN BATH, NEAR LANSING.
- THE CONSERVANCY IS DEDICATED TO MOBILIZING PRIVATE-SECTOR RESOURCES FOR FISH AND WILDLIFE AND THEIR HABITATS.

# COMPLETED PROJECTS

- ▶ Working with many partners and collaborators, MWC has completed hundreds of projects in all areas of the state. These include:
  - ▶ Sturgeon spawning reef construction
  - ▶ Wetland, stream and prairie restorations on public and private lands
  - ▶ Development of nature education programs and sites
  - ▶ Research on rare animals and plants

# HOW WE SELECT PROJECTS

We fill gaps:

- ▶ If everyone is doing it, we probably aren't.
- ▶ We do work that others are reluctant to attempt or find difficult.
- ▶ We strive to make a difference and choose projects that have long-term benefits.

# A CURRENT FOCUS



Michigan has several mammal species of unknown or disputed status. Although related research was called for more than 25 years ago, there has been little or no effort to systematically collect information in the Lower Peninsula about these hard-to-monitor animals.

In response to these “DATA GAPS,” the Conservancy has formed and supports the **INSTITUTE FOR RARE MAMMAL STUDIES IN MICHIGAN (IRMS)**.

- ▶ IRMS develops and employs innovative methods to help determine the status of rare Michigan mammal species.
- ▶ IRMS organizes, guides and supports field and laboratory research that:
  - ▶ Utilizes citizen volunteers.
  - ▶ Uses genetic analyses.
  - ▶ Employs specially trained canines to determine presence or absence of rare mammals by detecting scats.

# IRMS IS:

- ▶ ADMINISTERED BY MWC STAFF
- ▶ HOUSED AT THE 259-ACRE BENDEL WILDLIFE CENTER
- ▶ ADVISED BY A 10-MEMBER GROUP THAT INCLUDES EXPERIENCED MAMMALOGISTS AND ECOLOGISTS FROM THROUGHOUT THE U.S.

# IRMS IS EXAMINING 6 SPECIES IN TWO REGIONS OF THE LOWER PENINSULA.

- ▶ FISHERS, PINE MARTENS, GREY WOLVES, AND COUGARS IN THE NORTHERNMOST THREE COUNTIES—EMMET, CHEBOYGAN, AND PRESQUE ISLE
- ▶ PRAIRIE VOLES AND LEAST SHREWS IN SOUTHERN MICHIGAN



# THE FISHER QUESTION—



- ▶ Citizens photographed a fisher in 2013 near Onaway in Presque Isle County.  
Photo's authenticity was verified by the Michigan DNR.
- ▶ There had been persistent, unverified reports of fishers in the northernmost counties.
- ▶ Are fishers still present in the northern part of the Lower Peninsula?
- ▶ In the winter of 2016-17 a fisher was photographed just a few miles from IRMS' study transect in Emmet County. This indicated IRMS and its partners were looking in the right spots for this rare species.



# THE GREY WOLF QUESTION—



- ▶ In 2014, tribal biologists of the Little Traverse Bay Bands of Odawa Indians submitted scat found in Emmet County to Trent University in Ontario and received confirmation of the presence of a male grey wolf.
- ▶ This followed several previously documented occurrences (including trapped animals) since 2000 of wolves and/or wolf-coyote hybrids in Cheboygan and Presque Isle Counties.
- ▶ Are wolves becoming established in the Lower Peninsula?

# THE COUGAR QUESTION—



- ▶ A study by Central Michigan University and the Michigan Wildlife Conservancy found scats confirmed as cougar by DNA analyses in Emmet and Presque Isle counties in 2002-03.
- ▶ Are cougars present and breeding in the northern part of the Lower Peninsula?
- ▶ In June of 2017 the Institute received a photo clearly showing a cougar in Clinton County. The Institute took measurements at the site, analyzed the photo in detail, and provided all related information to the DNR. That agency had previously stated many times that it had been unable to verify any evidence of cougars in the Lower Peninsula. On June 29<sup>th</sup> the DNR confirmed the presence of the cougar in the Clinton County photo.

# THE PRAIRIE VOLE AND LEAST SHREW QUESTIONS



- ▶ Are these rodent species still present in southern Michigan?
  - ▶ Last specimen of **prairie vole** was found in Kalamazoo County in 2014.
    - ▶ The species is listed as endangered.
  - ▶ Last specimen of **least shrew** found in Clinton county in 1960.
    - ▶ The species is threatened.
- ▶ Is recovery of these two species possible? Do remnant populations exist?

# IRMS PROMOTES NEW TOOLS TO ANSWER OLD QUESTIONS

## ▶ DNA ANALYSES OF SCAT OR HAIR SAMPLES CAN BE USED FOR:

- ▶ Species confirmations
- ▶ Sex determinations
- ▶ Identification of individuals
- ▶ Determining familial relationships

## ▶ SCAT DETECTION DOGS OFFER MUCH GREATER EFFICIENCY IN FINDING SCAT SAMPLES



# SCAT SNIFFING DOGS



Provide a non-biased, highly accurate, very efficient means to collect extensive data on mammal occupancy, distribution and abundance simply by detecting animal scats.

# WHAT THE DOGS CAN DO:

- ▶ Search an area for scats up to 30 times quicker than an experienced human.
- ▶ Use their incredible sense of smell to discriminate among even closely related plant and animal species.
- ▶ Dogs can detect weeds before they break the surface, animals that live below ground, and aquatic organisms invisible to the human eye. Countless studies have proved dogs are the most **cost-effective** tool for detecting rare species.
- ▶ The abilities of conservation dogs are becoming legendary throughout the world.

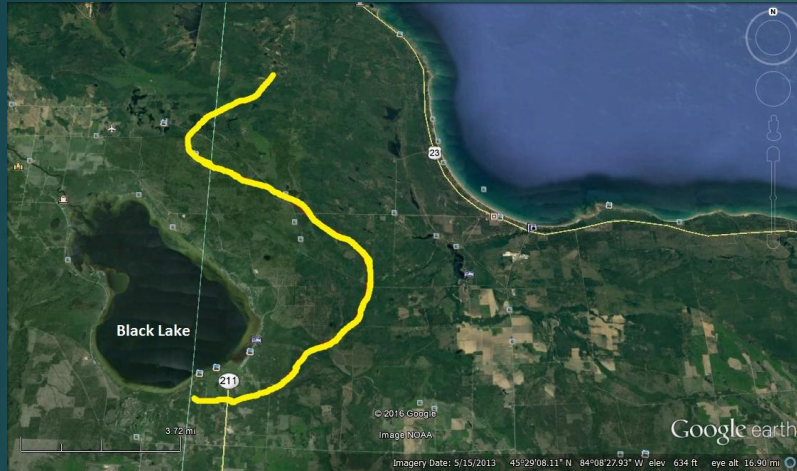
# STUDY IN 2019



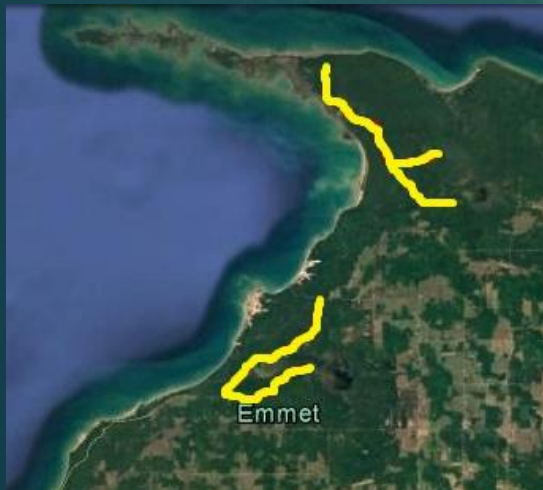
MICHIGAN RARE MAMMALS PROJECT: Fishers, Pine Martens, Wolves, Cougars

Emmet, Cheboygan, and Presque Isle Counties primarily

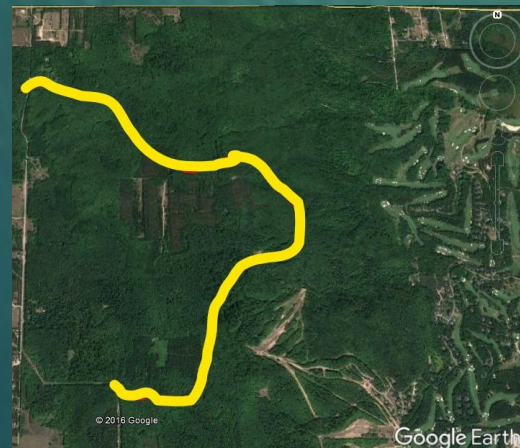
# TWO OF OUR 14 STUDY AREAS



Black Lake S.A.



Sturgeon Bay S.A.



- ▶ There have been few investigations in this part of Little Traverse Bay Bands (LTBB) of Odawa Indians Territory to determine the presence-absence of these species.
- ▶ Chance encounters and brief field studies over the past 20 years indicate the possibility of small remnant populations or transients.



# ADDITIONAL FIELD WORK



Snow tracking



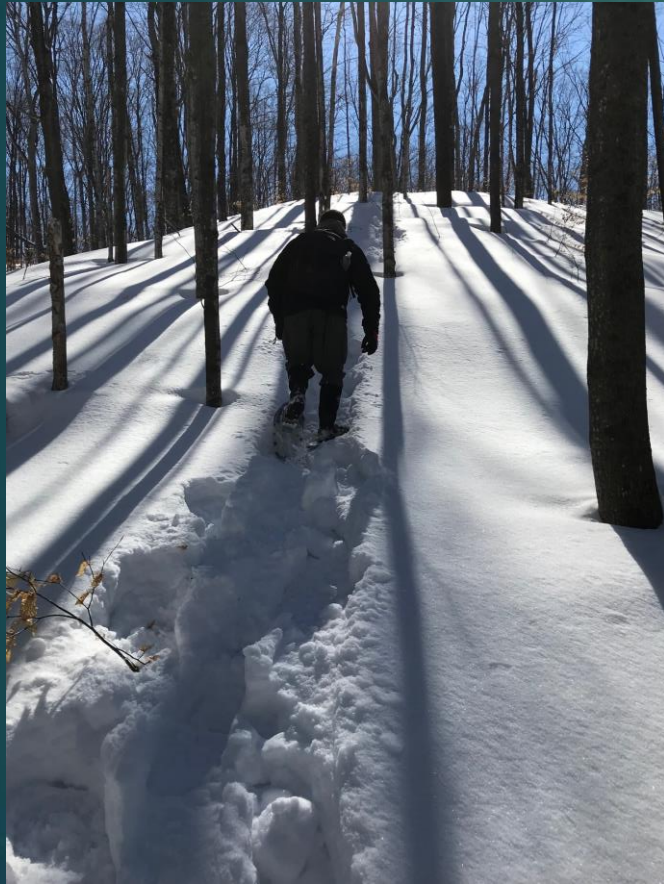
Trail Cameras

# POTENTIAL BENEFITS OF THE STUDY

In addition to helping better understand the status of four rare species, the study introduced an efficient investigation tool—use of scat detection dogs—to Michigan.



# PRE-PROJECT SURVEYS TO SELECT STUDY AREAS



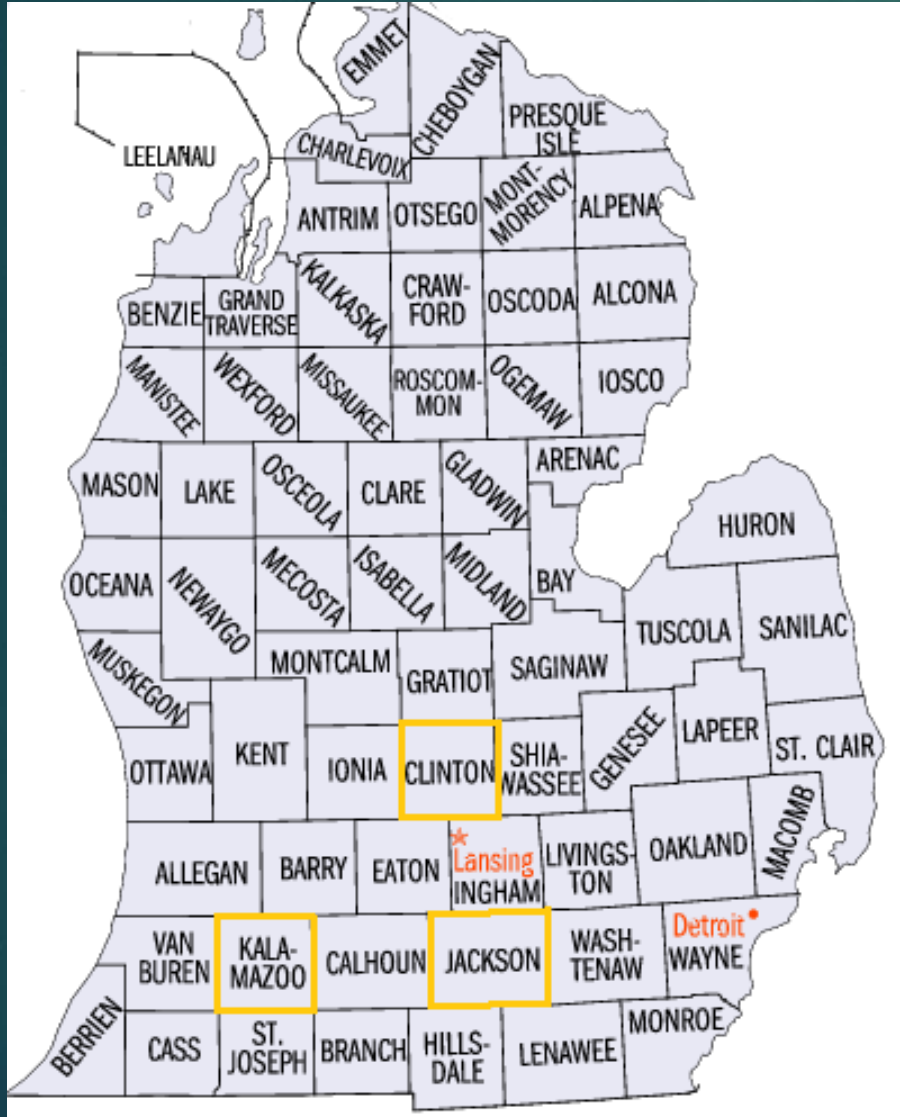
# PRE-STUDY DEMONSTRATION



FIELD WORK FOUND 78 SCATS WORTHY OF GENETIC ANALYSES IN PARTS OF FIVE COUNTIES.



# OTHER STUDIES IN 2019



## SOUTHERN MICHIGAN RARE MAMMALS STUDY: Least Shrews & Prairie Voles

- ▶ Clinton and Kalamazoo Counties



# POTENTIAL STUDY AREAS

- ▶ The least shrew was last seen in 1960 in Clinton County.

Some scientists believe the least shrew had a much larger range than collected specimens would indicate.

- ▶ The prairie vole was last seen in Kalamazoo County in 2014.

The prairie vole was once a signature species found in the 100,000-plus acres of Michigan prairie, little of which is left. Today, much time and effort is being spent on prairie restoration.

# ANOTHER POTENTIAL STUDY

Michigan has free-ranging wild hogs in some areas of both the Upper and Lower Peninsulas. The wild hogs are the result of escapes from game ranches and other facilities more than 10 years ago.

IRMS is exploring the use of scat detection dogs and DNA analyses to monitor this invasive exotic species.





IRMS IS GOING HIGH-TECH WITH TRACKING! WE HAVE SUCCESSFULLY SCOOPED-OUT TRACKS IN SNOW AND OTHER SUBSTRATES AND USED A SOPHISTICATED PROCESS TO AMPLIFY TRACE AMOUNTS OF DNA FROM CELLS FOUND IN EACH PRINT. WE ARE DEVELOPING PROTOCOLS FOR RARE MAMMAL SPECIES FIELD TRACKING USING THIS METHOD.



# IRMS IS COMMITTED TO REPORTING, PUBLIC EDUCATION

- ▶ Articles in the Michigan Wildlife Conservancy's Wildlife Volunteer News
  - ▶ Research updates will be available online at the Conservancy's website: [www.miwildlife.org](http://www.miwildlife.org)
- ▶ Conferences
- ▶ Peer reviewed papers along with commentaries
- ▶ Annual IRMS newsletter
- ▶ Articles are available or can be ordered from IRMS/MWC. For a list- visit the Wildlife & Education tab on our website.

# OPPORTUNITIES TO HELP

## ▶ Volunteer

Even with the best available research tools, the key to finding rare mammals is boots (and paws) on the ground. Volunteer for ground searches and other types of surveys.

## ▶ Donate

Support rare mammal studies in Michigan with annual or one-time gifts. You can ear-mark donations for any on-going study.



# CONTACT US:

## ▶ STAFF:

- ▶ Dr. Patrick Ruz-  
Director of Wildlife  
Programs & Institute  
Director

## ▶ ONLINE:

[www.MiWildlife.org](http://www.MiWildlife.org)

## ▶ OVER THE PHONE:

**517-641-7677**

## ▶ E-MAIL:

[prusz@MiWildlife.org](mailto:prusz@MiWildlife.org)

## ▶ IN THE MAIL:

Institute for Rare Mammal Studies in Michigan  
Michigan Wildlife Conservancy  
6330 Drumheller Rd., P.O. Box 393  
Bath, MI 48808