January, 2016 marked the beginning of the largest and most comprehensive deer research project ever undertaken in Wisconsin: The Southwest Wisconsin CWD, Deer and Predator Study. This initiative stems from Governor Scott Walker’s commitment to reevaluating chronic wasting disease in Wisconsin.

This study is principally concerned with the potential for CWD to negatively impact deer populations. We are exploring the infection rates at which CWD reduces deer survival and reproduction enough to reduce deer populations. However, many other factors can influence deer populations, including hunting, predation and habitat quality. Therefore researchers will closely track these factors as well. This study will also estimate the abundance and distribution of bobcats and coyotes within the study areas and will examine their impact on deer survival and behavior.

KEY POINTS

- The Southwest Wisconsin Deer and Predator Research Project was announced in May 2016 as part of the Governor’s CWD Initiative. The overall research goal is to comprehensively examine factors that could influence deer population change.

- OAS will work with volunteers and landowners to collar deer, coyotes and bobcats and then release them back into the wild for monitoring.

- DNR staff intend to collar animals for a total of four years. We will continue to monitor these animals for several years after collaring concludes.

- Obtaining a genetic sample from each collared deer will determine whether genes governing CWD susceptibility influence deer survival.

- Collaring deer, bobcats and coyotes allows researchers to determine survival rates, causes of mortality, movements and habitat use of these animals.

- We welcome more volunteer landowners to join the study. Landowner participation is crucial for our success, and we appreciate their support in making this study possible.
ANNUAL TIMELINE

Throughout the year, each newsletter will include a seasonal update and background information about the study. To receive the newsletter, visit dnr.wi.gov and search keyword “field notes.”

Fall Seasonal Update
Includes information on fawn survival and the number of pre-hunting marked predators on the landscape.

Winter Seasonal Update
Includes information about non-hunting deer survival and updated predator collaring numbers.

Early Spring Update
Contains updates on winter deer and predator fieldwork, including a more in-depth look at our study design.

Late Spring Seasonal Update
Includes winter collaring numbers for adult deer and predators and CWD testing results for captured deer.

Summer Seasonal Update
Includes an account of fawn collaring numbers and an update on predator cluster investigations.
The CWD Forecasting Project

The goal of this project is to forecast the spatio-temporal change in CWD across Wisconsin by better understanding factors that influence diffusion and growth of the disease.

TIMELINE
Launch: July 2018
Funded Through: June 2021

FUNDING
Pittman-Robertson

DNR PARTNER BUREAU
Wildlife Management

EXTERNAL STAKEHOLDERS
Deer Hunters
Private Landowners
Conservation Congress
CDAC
Interested Public

The CWD Forecasting Project seeks to investigate the long-term role of various risk factors such as sex, age, soil type and land cover in the growth and spread of CWD and to use forecasts of the growth and spread of CWD to optimize surveillance activities.

When coupled with information from the Southwest Wisconsin CWD, Deer and Predator Study on how CWD impacts deer populations, forecasts of CWD spread and growth will help identify where and when population-level impacts of CWD on deer will be expected.

This project uses the statewide CWD surveillance data collected by Wisconsin DNR, and the results of this research will benefit the agency by providing guidance based on actual data toward targeted management interventions and the development of surveillance systems that are most likely to control or quickly detect CWD on the landscape.

The CWD Forecasting Project is a collaborative project with Wisconsin DNR, the United States Geological Survey National Wildlife Health Center and the University of Wisconsin-Madison.

KEY POINTS

» This project investigates the role of various risk factors in the growth and spread of CWD and uses forecasts of the growth and spread of the disease to optimize surveillance activities.

» The results will benefit the Wisconsin DNR by providing guidance toward targeted management interventions and the development of surveillance systems that are most likely to control or quickly detect CWD on the landscape.
Advancing In Vitro Prion Amplification Assays for CWD Diagnostic Testing

This study assesses the reliability and sensitivity of next-generation prion detection methodology on a variety of bodily tissues, fluids and environmental sources.

TIMELINE
Launch: July 2018
Funded Through: June 2021

FUNDING
Pittman-Robertson

The Prion Assay Project seeks to compare the sensitivity and specificity of next-generation prion-detection methods (sPMCA and RT-QuIC) with conventional CWD tests (ELISA and IHC). It will also identify which bodily tissues and fluids are best for ante-mortem (before death) CWD tests.

Tissues and bodily fluids for this project will come from deer captured during the Southwest CWD, Deer and Predator Study. The Prion Assay Project could lead to less invasive and more sensitive ante-mortem CWD testing as well as post-mortem testing of more easily accessible body tissues and/or fluids. This could result in less costly CWD surveillance and quicker testing turnaround time.

The project will also help determine how prion sources differ in their infectivity, leading to an improved understanding of the potential for environmental transmission of CWD.

This is a collaborative project with Wisconsin DNR, the University of Wisconsin-Madison and the United States Geological Survey National Wildlife Health Center.

KEY POINTS

» This project compares the sensitivity and specificity of next-generation prion-detection methods with conventional CWD tests

» This research could lead to less invasive and more sensitive ante-mortem CWD testing as well as post-mortem testing of more easily accessible body tissues and/or fluids, for less costly CWD surveillance and quicker testing turnaround.

» The project will determine how prion sources differ in their infectivity and improve our understanding of the potential for environmental transmission of CWD.
This study examines how composting could be used to deactivate CWD prions, potentially providing a solution to long-standing challenges in deer carcass disposal.

The Prion Composting Project will test the ability of composting to degrade and deactivate CWD prions in deer carcasses.

CWD-infected deer carcasses will undergo a controlled and monitored composting process contained within tubs. Leachate resulting from the composting process will be tested for CWD. There are persistent concerns regarding safety in the disposal of CWD-infected deer carcasses, including in landfill settings. The Prion Composting Project is intended to address these concerns and to work toward developing best-management practices for carcass disposal.

Research will be conducted at the Almond Farm, a DNR facility, previously a commercial cervid farm. Deer at the farm were depopulated in 2006, at which time it was discovered that 80% of those deer were infected with CWD. The Almond Farm is double-fenced, preventing deer from entering the facility and ensuring that this work does not pose a risk to wild deer.

This is a collaborative project with Wisconsin DNR, the University of Wisconsin Stevens Point, and the University of Wisconsin-Madison.

**KEY POINTS**

» There is a need for safe and cost-effective disposal of CWD-infected carcasses

» Composting, through a combination of biochemical processes, has the potential to degrade and deactivate CWD prions

» Under controlled experimental conditions, researchers will compost CWD-infected deer carcasses, continuously monitoring the composting process and collecting and testing leachate for the presence of prions

» Research will be conducted within the double-fenced Almond Farm, a former captive cervid facility, now DNR-owned property.

» The Prion Composting Project may guide best management practices for disposing of CWD-infected deer carcasses

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This study advances the science of detecting prions in soils and our understanding of the persistence of CWD prions in soils.

**TIMELINE**
- Launch: July 2019
- Funded Through: June 2022

**FUNDING**
- Pittman-Robertson

**DNR PARTNER BUREAU**
- Wildlife Management

**EXTERNAL STAKEHOLDERS**
- Deer hunters
- Private landowners
- Conservation Congress
- CDAC
- Interested public

The Prions in Soils Project will assess the persistence of CWD prions in soils, which are a likely source of environmental transmission.

To determine the potential for prion persistence in soil, researchers will test soil samples taken from the Almond Farm, a DNR facility, previously a commercial cervid farm. Deer at the farm where depopulated in 2006, at which time it was discovered that 80% of those deer were infected with CWD. At the time of depopulation, soil samples were collected and archived. Assays will be conducted on those archived samples as well as newly-obtained samples from the Almond Farm. Testing soil samples 13 years post-depopulation is important in establishing the ability of prions to persist in the environment.

An important first step in this project is to optimize next-generation prion-detection methods (RT-QuIC) for the detection of CWD prions in soil samples.

The project will represent a big step toward understanding the persistence of prions in the environment, which has implications for the role of environmental transmission in CWD epidemics.

This is a collaborative project with Wisconsin DNR and the University of Wisconsin-Madison.

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» The Prions in Soils Project seeks to adapt and optimize next-generation prion-detection methods (RT-QuIC) for the detection of CWD prions in soil samples.

» Soil samples will come from the highly contaminated Almond Farm, a DNR facility.

» Soil samples taken both at the time of depopulation and 13 years following depopulation of the Almond Farm will be tested.

» The Prions in Soils Project will offer insight into prion persistence in soils.