

Assessing Long-Term Viability and Management of Prairie Grouse and Their Vulnerability to Environmental Stressors

Sharp-tailed Grouse and Greater Prairie-Chickens have experienced long-term population declines in Wisconsin over the last 60+ years as a result of landscape scale habitat loss and fragmentation. Today, both species exist as small subpopulations on publicly managed lands. Multiple planning documents and recommendations have called for the development of population models for both species to determine their long-term viability under various management regimes and vulnerability threats. Further, the Sharp-tailed Grouse conservation plan prioritizes the need for determining the extent and distribution of subpopulations across northwest Wisconsin.

TIMELINE

Launch: July 2013

Funded Through: June 2018

DNR PARTNER BUREAU

Wildlife Management

FUNDING

Pittman-Robertson

EXTERNAL STAKEHOLDERS

Greater Prairie-Chicken Advisory Committee

Sharp-tailed Grouse Advisory Committee

During spring 2014-16, we conducted more than 3,000 occupancy surveys for Sharp-tailed Grouse within the Northwest Sands Ecological Landscape, primarily in habitat between “core” DNR-managed properties. We have determined that Sharp-tailed Grouse are extremely rare across northwest Wisconsin, and occupancy tends to be higher in close proximity to DNR-managed areas and clustered patches of open-barren habitat.

For Greater Prairie-Chickens, we conducted population viability analyses to quantify the effects of various translocation scenarios on four populations in central Wisconsin. The largest decreases in site-specific extinction probability occurred when more vulnerable populations were targeted for translocations. Moving birds to the most stable sites led to the greatest reduction in regional extinction probability. Thus far, results highlight the value of considering alternative translocation strategies to enhance long-term population persistence of Greater Prairie-Chickens in central Wisconsin. We will use spatially explicit land cover data along with recently collected Greater Prairie-Chicken survival and productivity data to assess potential relationships during all life-history stages.



KEY POINTS

- » Sharp-tailed Grouse and Greater Prairie-Chickens have experienced long-term population declines over the last 60+ years.
- » Planning documents and the Great Prairie-Chicken Advisory and Sharp-tailed Grouse Advisory Committees recommend developing population models to determine long-term viability of both species and the need to measure the extent and distribution of Sharp-tailed Grouse in northwest Wisconsin.
- » We are evaluating the response of Greater Prairie-Chickens to land use and landscape-management practices, examining relationships between land use, grassland-management practices and habitat-selection behavior as well as how each of those factors influences nest, brood and hen survival.
- » Results of these studies will be used to develop contemporary landscape management practices and conservation goals and help to maintain long-term persistence of Sharp-tailed Grouse and Greater Prairie-Chickens in Wisconsin.

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Eastern Wild Turkey Distribution and Patch Occupancy Study

Wild turkeys have expanded well beyond their ancestral range in Wisconsin since they were reintroduced in the mid-1970s. There is substantial research on turkeys in southern Wisconsin, but basic research in the northern parts of the state is limited. Understanding factors that drive current distribution of turkeys in heavily forested landscapes of northern Wisconsin will provide much-needed information to help direct future management.

TIMELINE

Launch: July 2013
Funded through: June 2018

DNR PARTNER BUREAU

Wildlife Management

FUNDING

Wild Turkey Stamp

EXTERNAL STAKEHOLDERS

Turkey Advisory Committee
Turkey hunters

Beginning in March 2013, we conducted roadside gobbling-call count surveys for wild turkeys along 150+ survey routes distributed across northern Wisconsin in management zones 4, 6 and 7. From 2013-17, OAS staff surveyed calls from end of March through mid-May, when gobbling activity typically peaks. Surveys were done three times each spring to account for potential differences in gobbling activity and to estimate probability of detection.

Our sampling plan distributes survey routes across landscapes with varying amounts of forest cover and openings to improve our understanding of the relationship between habitat types, openings and turkey distribution. We are especially interested in how factors like landscape composition (e.g., percentage of oak) and landscape configuration (e.g., patch size and edge density) might influence the distribution of turkeys across northern Wisconsin.

We will use an occupancy-based modeling framework to link our survey data to landscape characteristics. Such models could also predict areas that are likely to be colonized by turkeys or extirpated given management actions. The results of this study will allow us to develop habitat-related management strategies for wild turkeys in northern Wisconsin.



KEY POINTS

- » To date, research on turkeys in northern Wisconsin has been lacking, and little is known about factors that drive turkey distribution in heavily-forested landscapes.
- » This project aligns with priorities outlined in the wild turkey management plan and seeks to identify land cover characteristics that influence turkey occupancy and distribution in northern Wisconsin.
- » We are employing occupancy-based surveys and analyses to evaluate population status, distributional changes and ecological correlates.
- » Study results will be used to develop contemporary habitat-related management strategies for turkeys in northern Wisconsin.

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