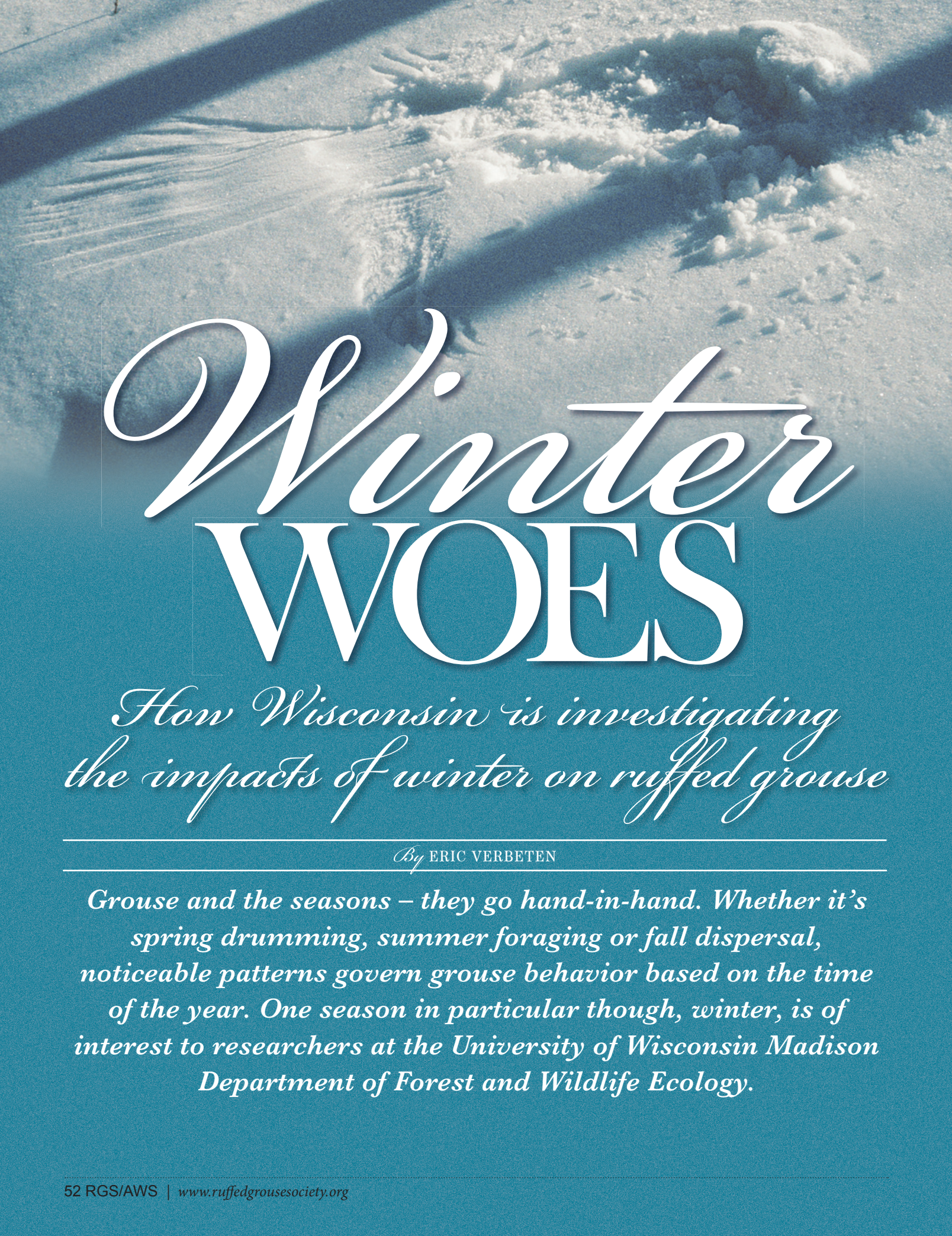




# Winter WOES

*How Wisconsin is investigating  
the impacts of winter on ruffed grouse*

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*By* ERIC VERBETEN

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*Grouse and the seasons – they go hand-in-hand. Whether it's spring drumming, summer foraging or fall dispersal, noticeable patterns govern grouse behavior based on the time of the year. One season in particular though, winter, is of interest to researchers at the University of Wisconsin Madison Department of Forest and Wildlife Ecology.*

Despite the bird's thunderous strength in flight, snow burrows can sometimes become an unfortunate trap if it rains while they're inside, sealing them under the snowpack.

Photos by Amy Shipley

Ruffed grouse in Wisconsin are fitted with radio collars in the fall to track their whereabouts. Researchers check the birds throughout the winter and record data about their snow roosting habits.



As far as research goes for the ruffed grouse, we know a lot about what's happening with them during the spring months," says Amy Shipley, University of Wisconsin graduate student. "But the impacts of the winter months on grouse are still a bit of a mystery."

The spring months have long been the focus of research because weather conditions like precipitation and temperature can have a direct impact on the survival of grouse chicks. Specifically, rain combined with freezing temperatures can greatly affect the survival rates of the young birds going into summer and ultimately impact the grouse population. Also, past research on habitat needed by male grouse during the spring drumming season has resulted in important young forest management practices.

Winter on the other hand, brings its own set of challenges: extreme temperatures, sparse cover and less available food to name a few. As many hunters know, winter offers few hiding spaces for grouse and it's often worth the extra effort to go check out some evergreen trees that may be off the beaten path. But aside from the little remaining cover available for grouse, snow roosts are the bird's only other option to get out of the elements and out of sight from predators.

A snow roost is a temporary shelter built into the snowpack, a mini-burrow offering protection from the wind and cold. Grouse can spend anywhere from 8-10 hours in a snow roost before coming out to forage for food according to Shipley.

The research team is looking at how snow conditions affect the grouse's ability to make a snow roost and what happens if they're unable to hide themselves during the winter months. Not all snow conditions are ideal for roosting, such as when the snowpack is iced-over, too dense, or if there is simply not enough in which to

hide. But aside from the obvious dangers of being out in the open like predators or exposure, stress is another factor that can have lasting impacts on the bird's health and reproductive success going into spring. When the snow is crusted over and snow roosts aren't available, grouse may feel exposed and vulnerable, which could lead to increased stress on the bird.

"Being on alert at all times can be exhausting for the birds," says Shipley. "Snow roosts and other cover offer a chance for rest and to better endure the harsh winter months. Grouse may feel safe inside snow roosts, or at least are sometimes reluctant to leave snow roosts."

The group is conducting the multi-year study at Sandhill Wildlife Area located in central Wisconsin, a 9,000 acre plot that houses both a wildlife refuge and an area open to public hunting. The research team uses traps (known as drift fences) in the fall to capture grouse and then takes health measurements like weight, sex and size. Once done with their checkup, they're fitted with a radio collar that lets researchers track individuals throughout the winter months.

Each week, Shipley scans the study area from an observatory tower with a radio receiver that picks up the signal emitted from the grouse collar. After tracking down the bird's roosting site, Shipley takes note of the conditions in the surrounding area like snow depth, density, temperature and whether or not the grouse was actively snow roosting. Fecal samples are also taken and tested for hormones that are indicators of stress in the animal.

Shipley notes that during the El Niño Winter of 2015/16, there was only a total of 22 days from December through March that had ideal snow cover conditions for snow roosting. Data will be taken over the course of three winters and later compared to see if there is any correlation between winter conditions, grouse health and survival. 🐦