SUBJECT: Update on the 2017 ruffed grouse harvest information and 2018 spring drumming survey results. In response to information provided, the Board may request that the department take action to reduce harvest during the 2018-2019 season.

FOR: June 2018 Board meeting

TO BE PRESENTED BY: Eric Lobner, Bureau of Wildlife Management Director

SUMMARY:
Update on 2017 ruffed grouse harvest information and 2018 spring drumming survey results.

RECOMMENDATION: The board may request that the department take action to reduce harvest during the 2018-2019 Season.

LIST OF ATTACHED MATERIALS (check all that are applicable):

- Background memo
- Type name of attachment if applicable

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cc: Board Liaison – AD/8
DATE:       June 11, 2018

TO:         All Members of the Natural Resources Board

FROM:       Mark Witecha, Upland Wildlife Ecologist

SUBJECT:    Update on 2017 ruffed grouse harvest and 2018 spring drumming survey results.

Per the Natural Resources Board’s request at the May 23rd meeting related to the Wisconsin Conservation Congress’ recommendation to issue an emergency rule to shorten the ruffed grouse season and reduce the daily bag limit, I am providing an update on the current population status of ruffed grouse in Wisconsin, including results of the 2017 harvest summary and 2018 drumming surveys.

To monitor the ruffed grouse population, the department utilizes annual drumming surveys and estimates harvest annually through a small game hunter survey. When conducting drumming surveys, Wisconsin DNR staff and volunteers document the number of breeding grouse detected along survey routes, which provides a population index that can be used to track long-term population trends. In Wisconsin, grouse cycle predictably on a nine- to eleven-year pattern, with peaks falling in years that end in nine, zero, or one and low points in years that end in four, five, or six. The cycle can be disrupted if population levels decline past a certain threshold, generally as a result of inadequate suitable habitat. Ruffed grouse depend on young forest that is actively managed every 15-20 years with disturbances such as timber harvest or fire.

Wisconsin has experienced long-term, significant declines in grouse hunters and hunter effort, with 62.4% decline in hunters and 61.6% decline in days hunted since the peak in the late 1980s (Figure 1). This trend is not exclusive to Wisconsin, nationwide we are losing approximately 160,000 small game hunters per year, more than any other type of hunter. Results of the 2017 small game hunter survey indicate an increase in total days hunted, but declines in hunter numbers and harvest for ruffed grouse. The number of days spent afield increased from 547,182 in 2016 to 583,917 in 2017, a 6.7% increase, though it is important to note that despite the modest increase, this represents the third lowest number of days afield in the 34-year history of the small game hunter survey. The estimated number of ruffed grouse hunters declined from 66,648 in 2016 to 64,533 in 2017, a 3.1% decline. Estimated ruffed grouse harvest declined from 262,943 in 2016 to 185,336 in 2017, a 29.5% decline. This represents the lowest estimated harvest in the 34 years the department has been conducting the small game hunter survey.

Ruffed grouse drumming activity declined 34% statewide from 2017 to 2018. The decline was greatest in the northern region, with a 38% decline in drumming grouse detected (Figure 2). Drumming activity also declined 29% in the central forest region and 14% in the southwest region. Drumming increased 100% in the southeast region, though grouse occur in extremely low densities in this part of the state, so small changes in drumming observations can have a seemingly large impact on survey results. It’s important to note that drumming activity was not down universally — in the northern regions, drumming observations were stable or increased on 22 of the 43 survey routes. The northern forest contains the most extensive early-successional forest habitat and healthiest ruffed grouse populations, so focus is generally placed on trends in the northern region.

This decline in drumming activity in 2018 is atypical, as we were expecting to still be in the increasing phase of the grouse population cycle with the next anticipated peak falling sometime between 2019-2021. While declines in drumming activity during the increasing phase of the cycle have been observed in Wisconsin in the past, this decline is more dramatic.
When focusing specifically on the northern region, our core area for grouse, another anomaly has been observed in the population cycle in recent years. In 2015, we reached the low point in the cycle, as expected; however, drumming activity never reached the lows we typically see in the grouse cycle (Figure 2). In a low year, we can expect to observe 0.6-0.8 drums per stop. In 2015, drumming was 1.5 drums per stop. Given that populations appeared to remain abnormally high in 2015 based on drumming survey data, we still fall well within the typical range of variation seen in the grouse population cycle despite the unexpected decline in drumming grouse in 2018.

It is difficult to say how these recent anomalies will impact the normal cycle that we see in our northern forest population, as the factors that drive the population cycle are not well understood. We cannot say with certainty whether the cycle might restart, or if the population will continue to rise and peak sometime around 2020.

Multiple factors working individually, concurrently, or interactively can impact grouse populations beyond the normal nine- to eleven-year cycle. These population drivers include habitat conditions, brood and nesting conditions, food availability, winter conditions, and disease. At this time, we have no definitive evidence pointing to one or multiple factors driving the decline in drumming activity observed in Wisconsin in 2018.

West Nile virus has been cited as a potential source of mortality in grouse. West Nile virus was first detected in Wisconsin in 2002. Recent research from Pennsylvania suggests that West Nile virus has potentially impacted grouse populations in the northeastern U.S., specifically in areas with lower-quality grouse habitat, but it is important to note that comparisons between the northeast and upper Great Lakes states should be done with caution. Habitat quality and fragmentation impact northeastern grouse populations more so than upper Great Lakes populations. Based on Forest Inventory and Analysis data, about 12% of Wisconsin’s forests fall in the 0-20-year age class; 7% of Pennsylvania’s forests fall in the 0-20-year age class by comparison. Grouse generally occur in lower densities in the northeast compared to the upper Great Lakes states as a result of available young forest habitat. In 2015, ruffed grouse harvest in Wisconsin was estimated at 210,412 birds, while Pennsylvania’s estimated harvest was 34,848 birds.

Given that we are lacking data on West Nile virus impacts to upper Great Lakes grouse populations, Wisconsin DNR will be collaborating with Michigan and Minnesota Departments of Natural Resources on a regional West Nile virus monitoring effort in ruffed grouse. This monitoring effort will provide us with baseline information on the prevalence of West Nile virus in ruffed grouse, and a foundation on which to build future research projects, if warranted. Details on the logistics of the monitoring effort are forthcoming, but the department will be working with stakeholders, such as the Ruffed Grouse Society and hunters, to provide samples for testing. Upland wildlife staff have already received several inquiries from interested hunters looking to help with the monitoring effort, so this presents an excellent opportunity for the department to work collaboratively with grouse hunters, other stakeholders, and neighboring states to learn more about this issue together.

Regardless of the cause of the decline in drumming grouse from 2017 to 2018, the most effective method at our disposal for addressing grouse population concerns is to focus on habitat improvement. The department, as well as the county forests, have been increasing aspen harvests on state and county lands to benefit grouse and other early-successional forest wildlife. Wisconsin Forest Inventory Reporting System data show a significant increase in aspen timber sales established on DNR-managed state lands since 2006. From 2007–2016, the average acreage of aspen established for harvest per year doubled compared to 1996–2006 (from approximately 2,000 acres per year to 4,000 acres per year). Aspen timber sale establishment is expected to continue to increase over the next 15 years to about 5,000 acres per year. Similar trends are expected on county forests, which Wisconsin DNR assists in managing. The current 15-year average for acres of aspen established for harvest on county forests is 11,761 acres per year—that

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number is expected to increase to 17,515 acres per year over the next 15 years. This increased yet sustainable aspen harvest will help maintain the early-successional forest habitat that grouse and other young forest wildlife species depend on, while still maintaining a diversity of older age-class forests on public lands to benefit mid-successional and old growth forest wildlife. Wisconsin DNR has also been actively involved in the Wisconsin Young Forest Partnership, a collaborative effort to promote active forest management in the state, which has included planning efforts on approximately 62,000 acres of public land and 52,000 acres of private land. Adequate food resources and cover lead to healthier populations that can quickly rebound from issues such as an isolated year of poor production or disease. Wisconsin contains some of the best grouse habitat in the country, and the department remains committed to increasing management efforts that benefit ruffed grouse.

Regarding proposed changes to season framework and bag limit, research has shown that harvest mortality of upland game birds is largely compensatory given their short lifespan, meaning those individuals harvested are likely to have perished anyways. A long-term study published in 2007 found that grouse populations in the eastern and northeastern U.S., where grouse populations are significantly lower than in the upper Great Lakes region, are not limited by hunting and therefore recommended maintaining current harvest levels. A 2011 study out of New York concluded that “tightening hunting regulations would not curb further population declines” of ruffed grouse; however, some research suggests that late-season harvest could potentially impact populations negatively.

Wisconsin DNR is currently working with stakeholders to gather input, share information, and develop a recommendation for the 2018-19 ruffed grouse season.

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Figure 1. Estimated number of ruffed grouse hunters in Wisconsin, 1983-2017.

Number of Grouse Hunters (1983-2017)

Figure 2. Observed ruffed grouse drums per stop in the northern forest region, 1964-2018.

Northern Forest - Drums Per Stop (1964-2018)

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