

2018 Prairie Grouse Hunting Forecast

Greater prairie-chicken and sharp-tailed grouse, commonly referred to as prairie grouse, offer a unique and popular hunting opportunity in South Dakota. Prairie grouse are most abundant in central and western South Dakota where ample grassland habitat exists (Figure 1). Last fall, 9,348 hunters harvested an estimated 22,153 prairie grouse. Most of the prairie grouse harvest occurred in central and western portions of the state (Figure 2). Prairie grouse utilize a variety of habitats during fall and winter including grassland, cropland, and shrubs, although most hunting occurs within large blocks of grassland habitat.

Figure 1. General distribution of prairie grouse in South Dakota.

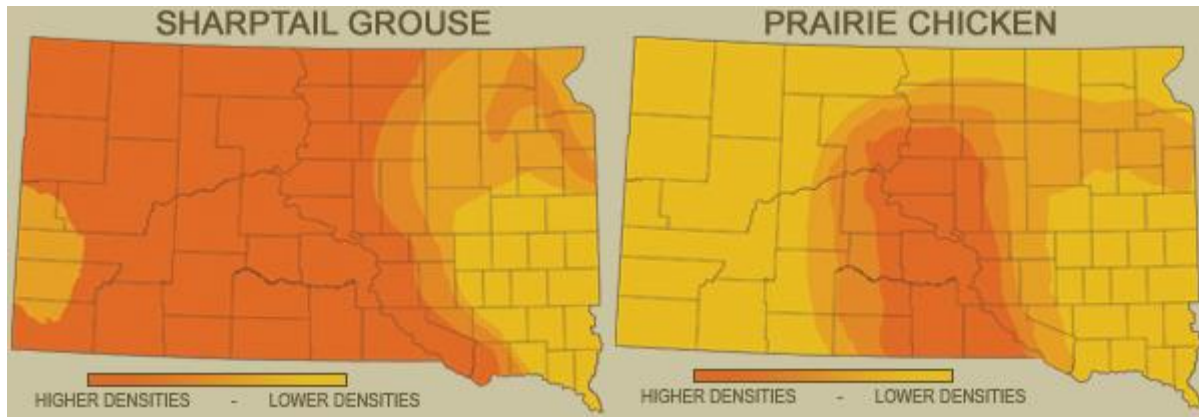
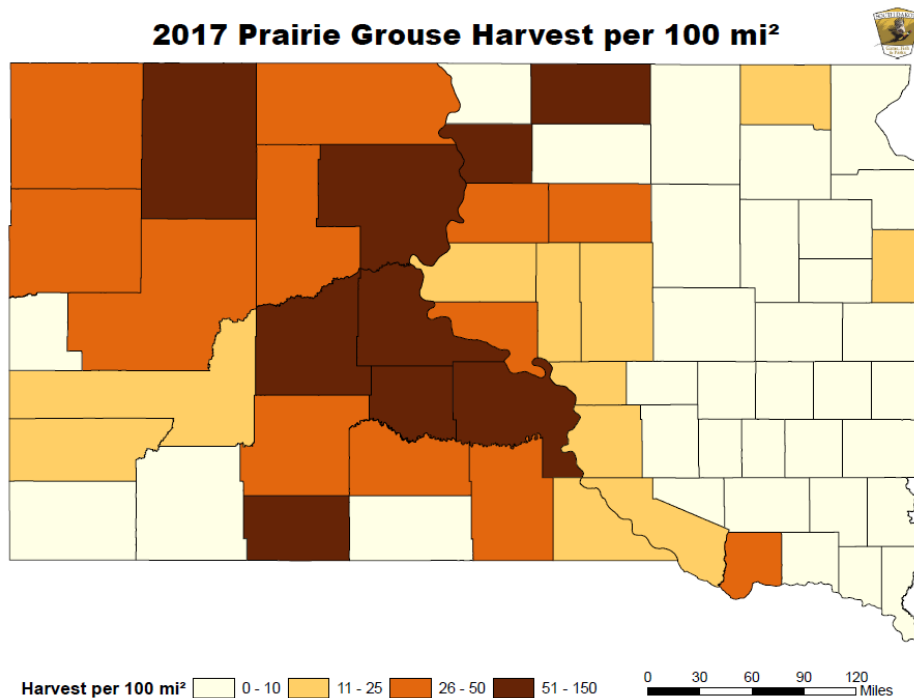


Figure 2. Distribution of the 2017 prairie grouse harvest in South Dakota.



Prairie grouse populations are monitored annually by counting males on leks, often referred to as dancing or booming grounds. Counts of males on these traditional breeding season display areas provide a population index of the adult population (Figure 3 and 4). Like other upland game birds such as pheasants, prairie grouse are generally short lived (50% annual survival) with high reproductive potential. Young of year birds typically outnumber adult birds in the fall population. For this reason, spring lek counts are not necessarily a good predictor of fall population levels or hunter success. Spring lek counts are a good indicator of long term trend in adult population. Results from the 2018 spring lek count survey show a decrease in males/lek and male density for both species.

Figure 3. Prairie grouse males per square mile for traditional survey blocks in South Dakota, 1994–2018.

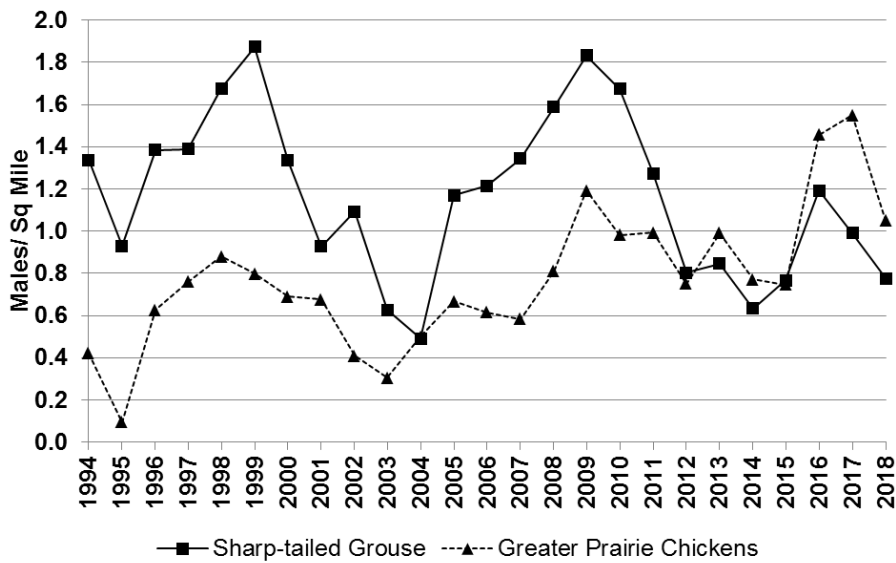
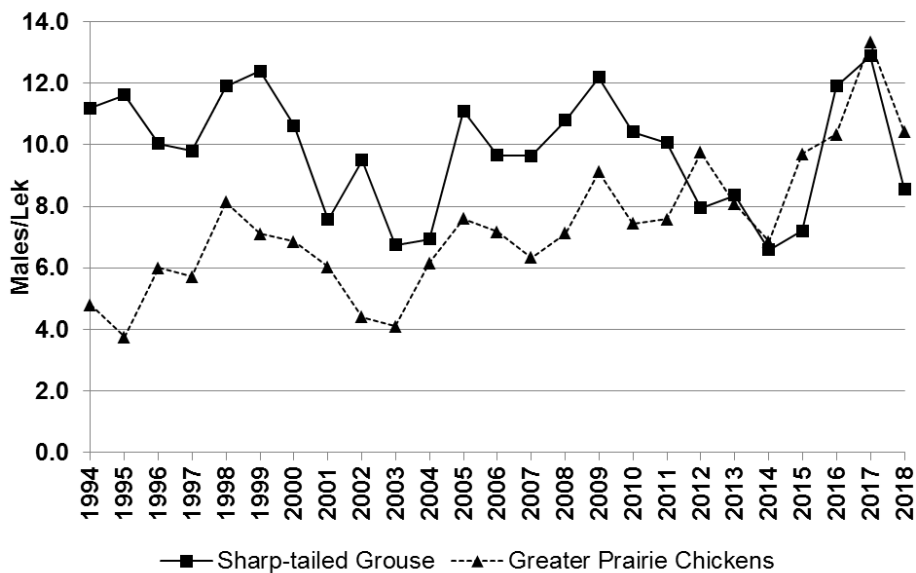
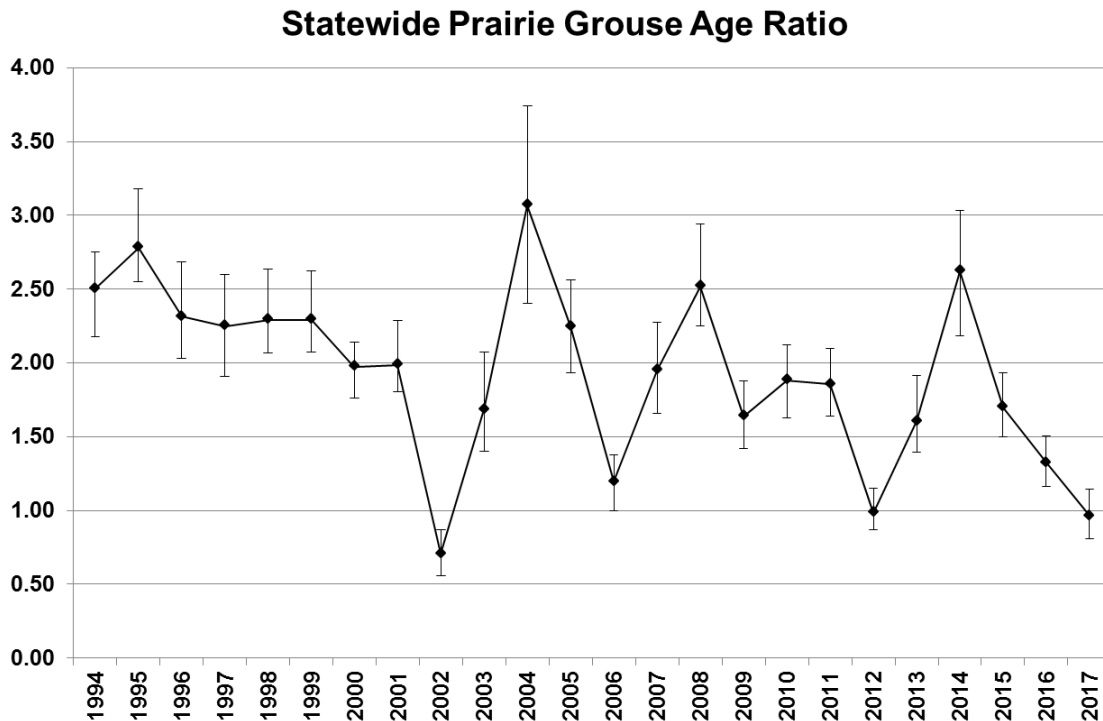


Figure 4. Prairie grouse males per lek for traditional survey blocks in South Dakota, 1994–2018.



Prairie grouse reproductive success is not easily determined before the hunting season as with pheasants which are surveyed via August roadside surveys <https://gfp.sd.gov/pheasant/> . However, wings from hunter harvested prairie grouse are collected each year to determine what proportion of the harvest consisted of young of year birds. On average, two-thirds of harvested prairie grouse are young of year birds, but the ratio of young to adult birds has been as high as 3.05 in 2004 and as low as 0.61 in 2002 (Figure 5). This data provides biologists with valuable information about reproductive success each year. It is well known that environmental variables can impact reproductive success in upland game birds.

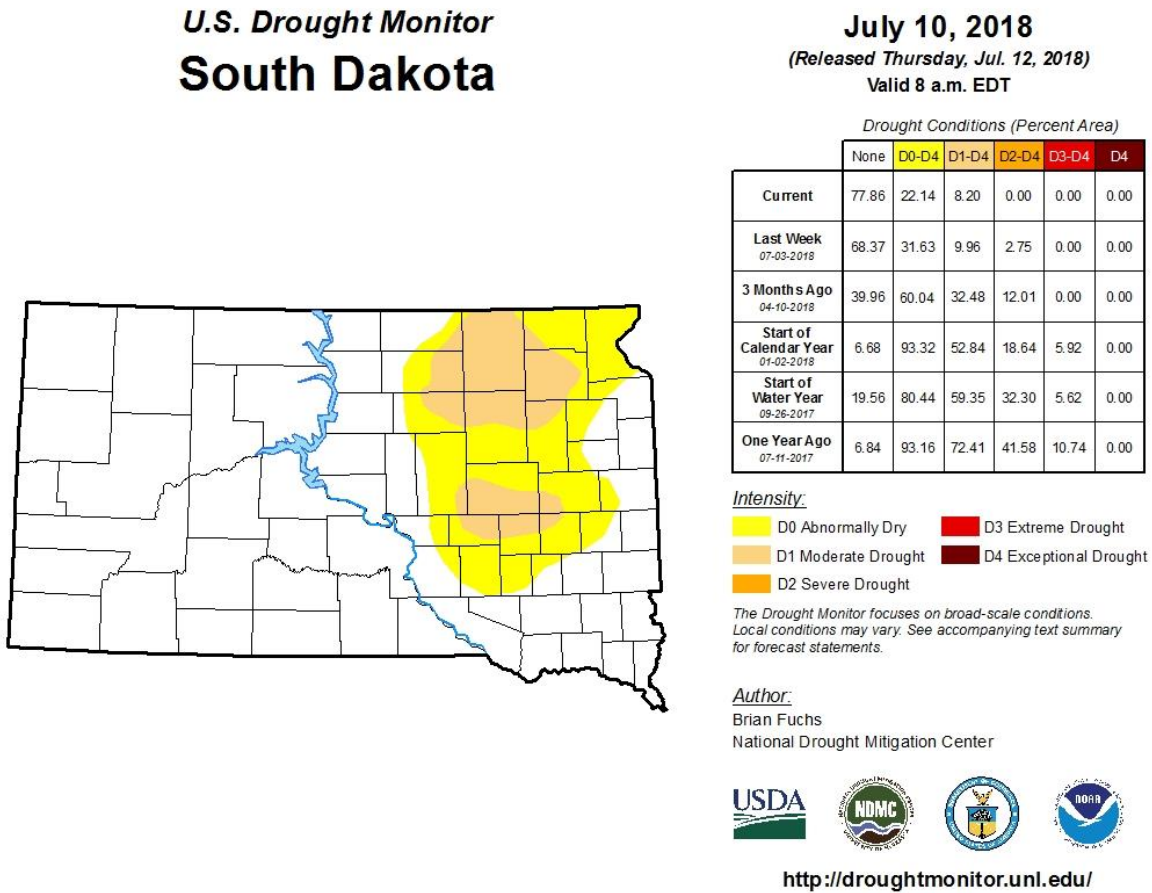
Figure 5. Prairie grouse age ratio for South Dakota, 1994 – 2017.



When a multitude of weather variables thought to have potential impact on prairie grouse production were evaluated in central South Dakota, the average temperature in June was found to be negatively correlated with prairie grouse production. Our analysis of data dating back to 1994 suggests that abnormally warm June weather could be a detriment to grouse production, potentially caused by reduced insect production or deteriorating habitat condition. The average June temperature in central South Dakota for 2018 was about 3° F above normal, or the 22nd warmest June since 1895.

Poor prairie grouse production has also been observed during drought years such as 2017, 2016, 2012, 2006 and 2002 (Figure 5). Drought can deteriorate habitat conditions and reduce insect abundance, both of which can reduce chick survival. Last year, severe and extreme drought was common throughout most of the primary prairie grouse range which likely contributed to the very poor production. Fortunately, essentially the entire primary prairie grouse range was drought free during the 2018 prairie grouse nesting and brood-rearing season (Figure 6).

Figure 6. South Dakota drought status for July 11, 2017.



Prairie grouse hunting is expected to improve in 2018 versus 2017. Following back to back drought years, grassland habitat conditions look phenomenal in central and western South Dakota which should improve production. There could be some lingering impacts from the 2017 drought as less than average residual cover was available going into the 2018 nesting season. Prairie grouse initiate nesting before new growth occurs and generally benefit when good residual grass is available. South Dakota also experienced the 2nd coldest April on record which coincides with the beginning of the nesting season. The cold temperatures delayed green up on a landscape with less than ideal residual grassland. However, a very similar scenario occurred in 2013 when the 3rd coldest April on record occurred a year after severe drought. Prairie grouse production was average in 2013.

Hunters are encouraged to visit with those in their traditional hunting areas as local population levels and habitat conditions can vary. Hunters are again asked to hunt safely and ethically, respect private landowners and those public hunting areas scattered across the state, and enjoy the South Dakota tradition of hunting all upland game with family and friends this fall. Hunters who harvest grouse are encouraged to provide a wing from each bird which will be used to estimate reproductive success and refine future prairie grouse outlooks (<https://gfp.sd.gov/prairie-grouse/>).