

2020 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, 10,220 hunters harvested an estimated 30,053 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.

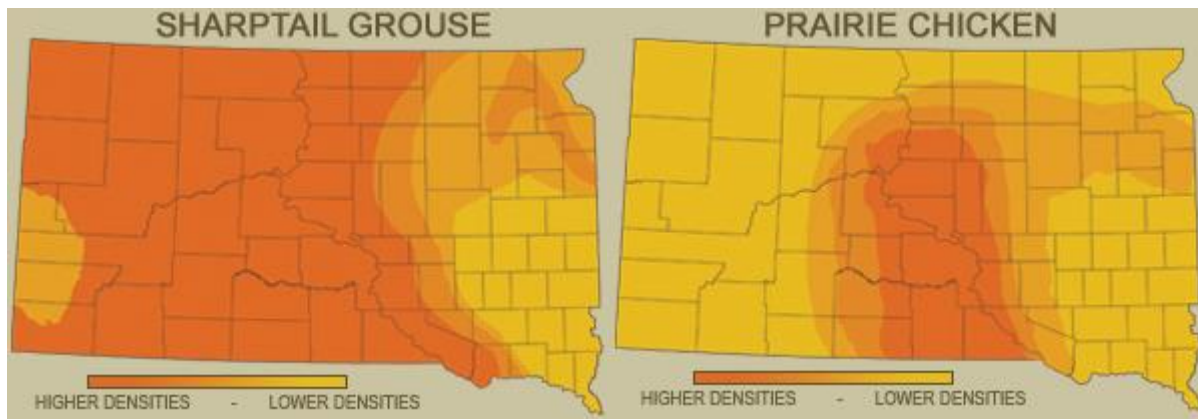
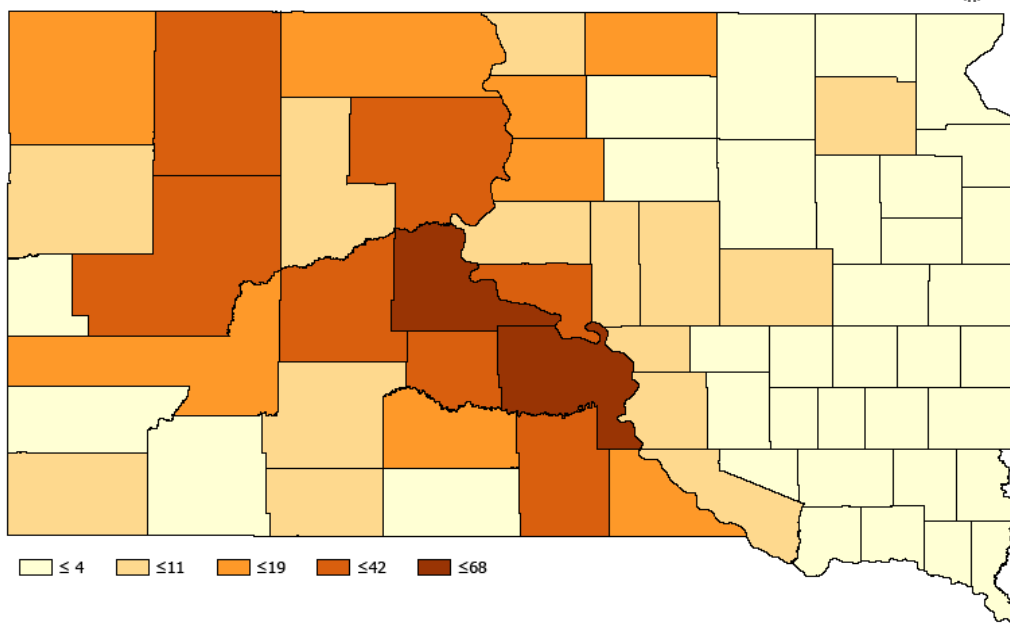


Figure 2. Distribution of the 2019 prairie grouse harvest in South Dakota.

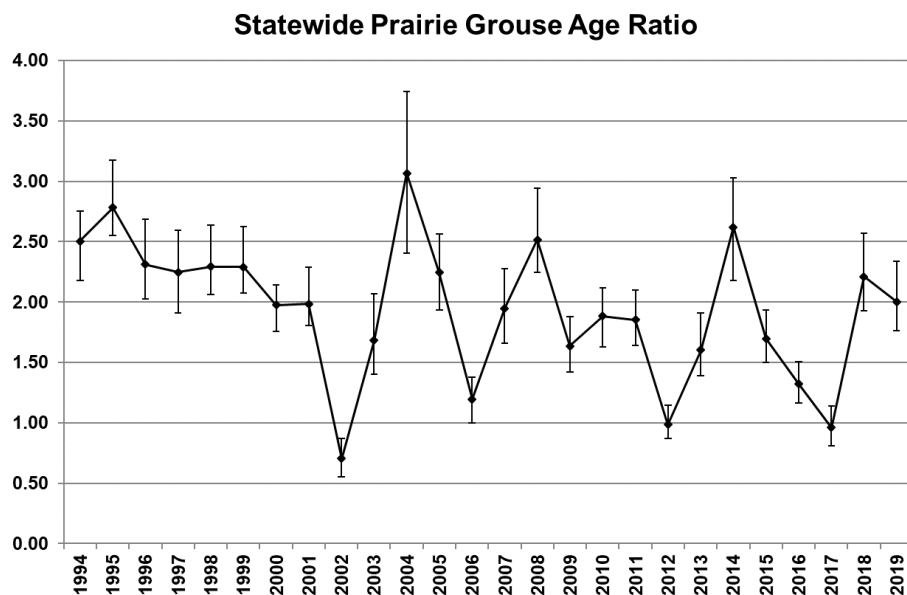
2019 Prairie Grouse Harvest Per 100 mi²



Prairie grouse populations are monitored annually by counting males on leks, often referred to as dancing or booming grounds. Surveys occur in portions of central and western SD that overlap areas of high hunter effort. Counts of males on these traditional breeding season display areas provide a local population index of the adult population. 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. Lek surveys conducted in central South Dakota by the SD GFP and U.S. Forest Service indicated above average counts in 2020.

Prairie grouse reproductive success is not easily determined before the hunting season. 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 3). 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 3. Prairie grouse age ratio for South Dakota, 1994 – 2019.

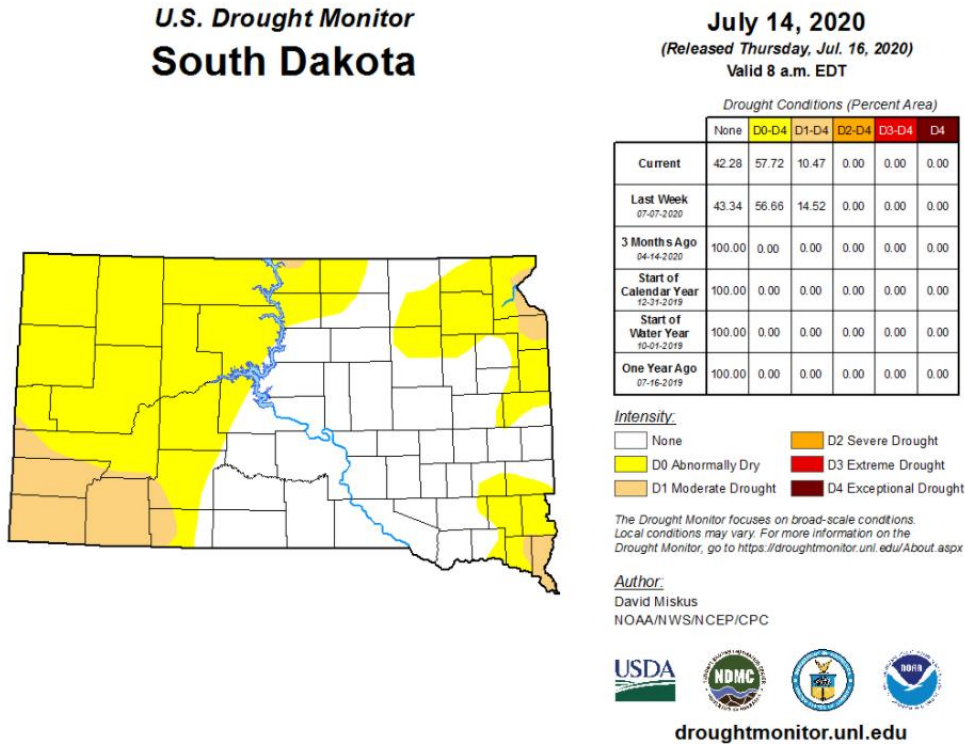


When a multitude of weather variables thought to have potential impact on prairie grouse production were evaluated in central South Dakota, the average temperature in June was found to be negatively correlated with prairie grouse production. Our analysis of data dating back to 1994 suggests that abnormally warm June weather could be a detriment to grouse production, potentially caused by reduced insect production or deteriorating habitat conditions related to drought. The average June temperature in central South Dakota for 2020 was about 3.9° F above normal and the 4th warmest in the last 30 years. However, the years with warmer average June temperatures than 2020 were observed in years of drought which is different than this year.

Poor prairie grouse production has also been observed during drought years such as 2017, 2016, 2012, 2006 and 2002 (Figure 3). Drought can deteriorate habitat conditions and reduce insect abundance, both

of which can reduce chick survival. Last year, essentially the entire primary prairie grouse range was drought free during the prairie grouse nesting and brood-rearing season. This year, portions of the primary grouse range in western South Dakota experienced abnormally dry conditions with portions of southwest SD experiencing a moderate drought (Figure 4).

Figure 4. South Dakota drought status for July 14, 2020.



The prairie grouse hunting forecast for 2020 is an optimistic one. There was good residual grassland cover going into the 2020 nesting season from excellent range conditions in 2019 which should contribute to strong reproduction. Grassland habitat conditions were exceptional throughout the spring/summer of 2020 from near normal precipitation and temperatures experienced through much of April to the beginning of June. Although June temperature was well above average, we do not think grouse production was reduced because of ample moisture during that time. Non-drought conditions through most of the summer should result in good grassland cover which could improve hunter success. Drought conditions were expanding in coverage and intensity by late August and will have to be monitored. Late-onset drought can reduce hunter success as was observed in 2012 when drought conditions quickly intensified in late-August and September. The latest U.S. drought monitor map can be viewed at:

<https://droughtmonitor.unl.edu/>

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/>).