2022 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 (SD). 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, prairie grouse are most abundant in central and western SD where ample grassland habitat exists (Figure 1). Hunters often harvest mixed bags of sharp-tailed grouse and greater prairie-chickens in the central portion of the state.

Figure 1. General distribution of prairie grouse in South Dakota

Prairie grouse harvest was slightly down in 2021, compared to 2020, but still above the 10-year average. Overall, 15,277 hunters harvested an estimated 53,219 prairie grouse (Figure 2). Most of the prairie grouse harvest occurred in central and western portions of the state (Figure 3).

Figure 2. Prairie grouse hunters and harvest in South Dakota, 1980-2021
Spring 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 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 for the adult population. Lek surveys conducted in central SD by department staff and U.S. Forest Service indicated slightly lower overall counts in 2022 compared to record high counts in 2021.

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. 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. Last year, the ratio of young to adult birds was 0.9, comparable to 2017 but lower than recent years indicating relatively poor production in 2021 (Figure 4).
When a multitude of weather variables thought to have potential impact on prairie grouse production were evaluated in central SD, 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, deteriorating habitat conditions related to drought or chick loss from heat stress. The average June temperature in central SD for 2022 was only slightly above the observed 20-year average. June precipitation for central SD was just over 1 inch shy of the 20-year observed average. Overall, June in much of the prairie grouse range in South Dakota was relatively normal.

Prairie grouse production is often correlated with the presence or absence of drought. Drought can deteriorate habitat conditions and reduce insect abundance, both of which can reduce chick survival. Last year, portions of the primary prairie grouse range were in a severe to extreme drought through much of the prairie grouse nesting and brood-rearing season. This resulted in below average prairie grouse production as habitat conditions continued to deteriorate through nesting and brood-rearing season. However, overall prairie grouse harvest was still above average due to the number of adults in the population as indicated by historically high lek counts. This year, the northernmost and central portions of the primary grouse range were drought free to abnormally dry and areas to the south and southwest witnessed moderate drought conditions (Figure 5). Only portions of Dewey, Ziebach, Stanley, and Haakon counties experienced a severe drought.
The 2022 prairie grouse hunting outlook is expected to be more favorable than 2021. Drought was relatively widespread in early to mid-spring in much of western South Dakota. This lingering impact of the 2021 drought resulted in less residual annual cover entering the nesting season, which may have delayed nesting efforts or lowered overall nest survival because of less cover. Hens generally initiate nests before new growth occurs and benefit from residual cover from the previous growing season. Although portions of central and western South Dakota are now generally in a low intensity drought, the relatively normal June temperatures and precipitation have caused grassland habitat conditions to improve in some areas. We expect prairie grouse production to be fair in areas that have recovered from drought but less favorable in areas where drought persists. Hunters may still encounter good numbers of adult prairie grouse with above average counts this past spring. Hunting conditions should also see improvement from last year with better holding cover from improved rangeland conditions. The latest U.S. drought monitor map can be viewed at: [https://droughtmonitor.unl.edu/](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/](https://gfp.sd.gov/prairie-grouse/)).