

UNITED STATES GOVERNMENT
MEMORANDUM

DATE: June 1, 2015

REPLY TO

ATTN OF: Kathy McPeak

SUBJECT: 2015 Report of Prairie Grouse Breeding Ground Surveys on
Fort Niobrara NWR

TO: Steve Hicks

Objective: To monitor trends in abundance of sharp-tailed grouse and greater prairie chickens on Fort Niobrara NWR.

Methods: Annual prairie grouse breeding ground counts were conducted 8 mornings April 10-22, 2015 on Fort Niobrara NWR. Refuge grasslands south and east of the Niobrara River totaling approximately 12,000 acres were searched for displaying grouse beginning ~30 minutes before sunrise and continuing for 1-2 hours depending upon weather and bird activity. Leks located on private land within ½-¾ mile of the refuge were included in the survey. Refuge biologist McPeak visited each lek at least twice to confirm activity and number of males displaying. Staff with good hearing assisted on 3 mornings with counts in areas where historic grounds were no longer active (e.g. habitat unit 36a).

Results: A total of 191 sharp-tailed grouse males were counted on 15 grounds in 2015 which is up from 2014 results of 117 males counted on 12 grounds (Figure 1). A total of 55 greater prairie chicken males were counted on 9 grounds in 2015 which is up from 2014 results of 36 males counted on 4 grounds. Both populations appear to be recovering following the historic drought of 2012 and poor nesting/brood rearing conditions in 2013.

Discussion: Sharp-tailed grouse and greater prairie chicken lek counts have been conducted on Fort Niobrara NWR since 1956 as an index for abundance. Sharp-tailed grouse numbers increased significantly in the late 1950s in response to changes in habitat management on the refuge (e.g. stopped haying some parts of the count area) and then stabilized with normal year-to-year population fluctuations until the late 1980s (Figure 2). The prairie chicken population hovered at low levels from 1956 until the mid-1980s when count results suggest it started growing. From 1988 - 2000, sharp-tailed grouse population numbers were below the long-term trend line most likely due to increased forage utilization by bison and longhorn cattle (4000-5000 AUMs per year). The prairie chicken population appears to have responded as well to the change in habitat management in the 1990s. After the longhorns left Fort Niobrara in 2000 and grazing AUMs dropped below 3000 in the count area, population fluctuations appear to be largely based on weather events. The 15-year trend analyses suggest the sharp-tailed grouse population is stable to increasing and the prairie chicken population is most likely stable (Figure 3).

Sharp-tailed grouse and greater prairie chicken populations are affected by a variety of factors and can fluctuate greatly from one year to the next. Both species use a range of vegetation structures to

meet their life requirements (short for displaying, taller for nesting, more heterogeneous for brood rearing). Lek count data continue to suggest that the refuge is providing quality habitat for *sustainable* populations of sharp-tailed grouse and prairie chickens; and because prairie grouse are considered an “umbrella” species, the refuge is also likely providing good habitat for a broader suite of grassland birds and other wildlife.

Figure 1. Location of prairie grouse leks on and adjacent to Fort Niobrara NWR in 2015.

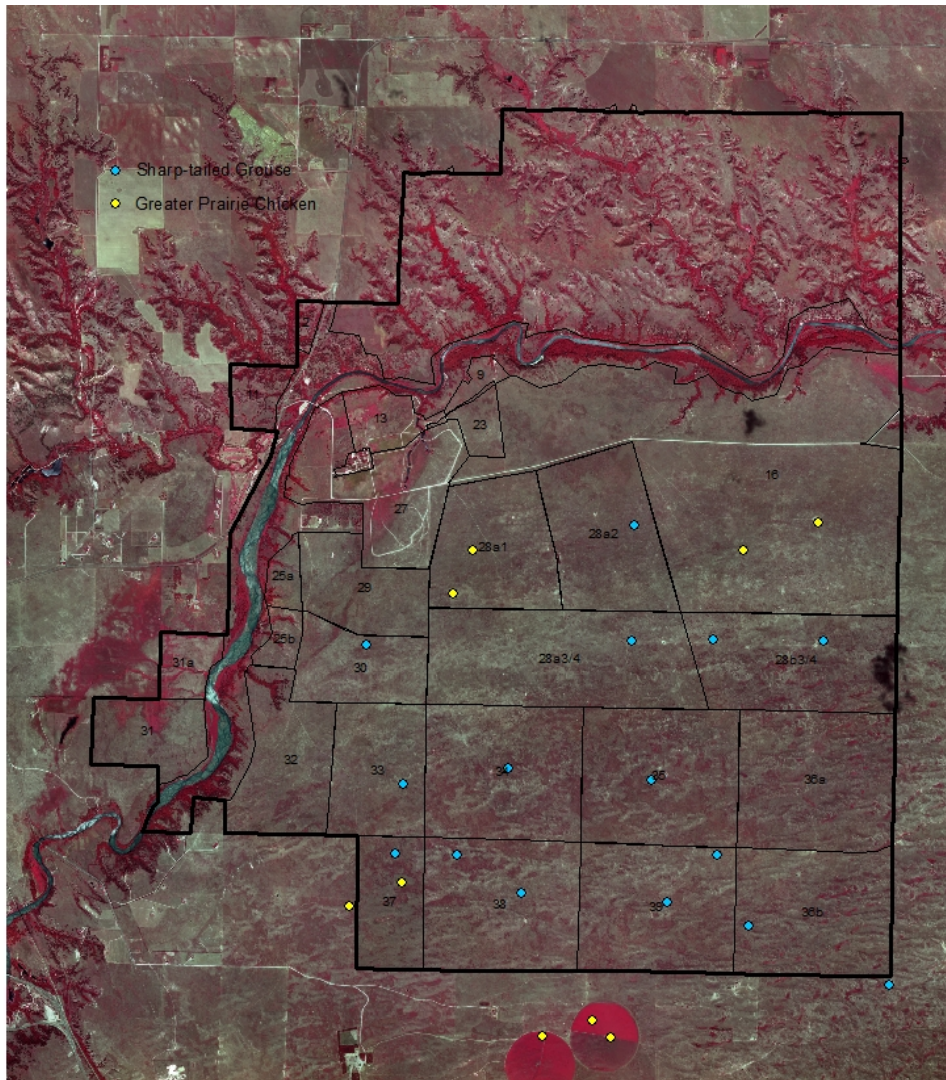
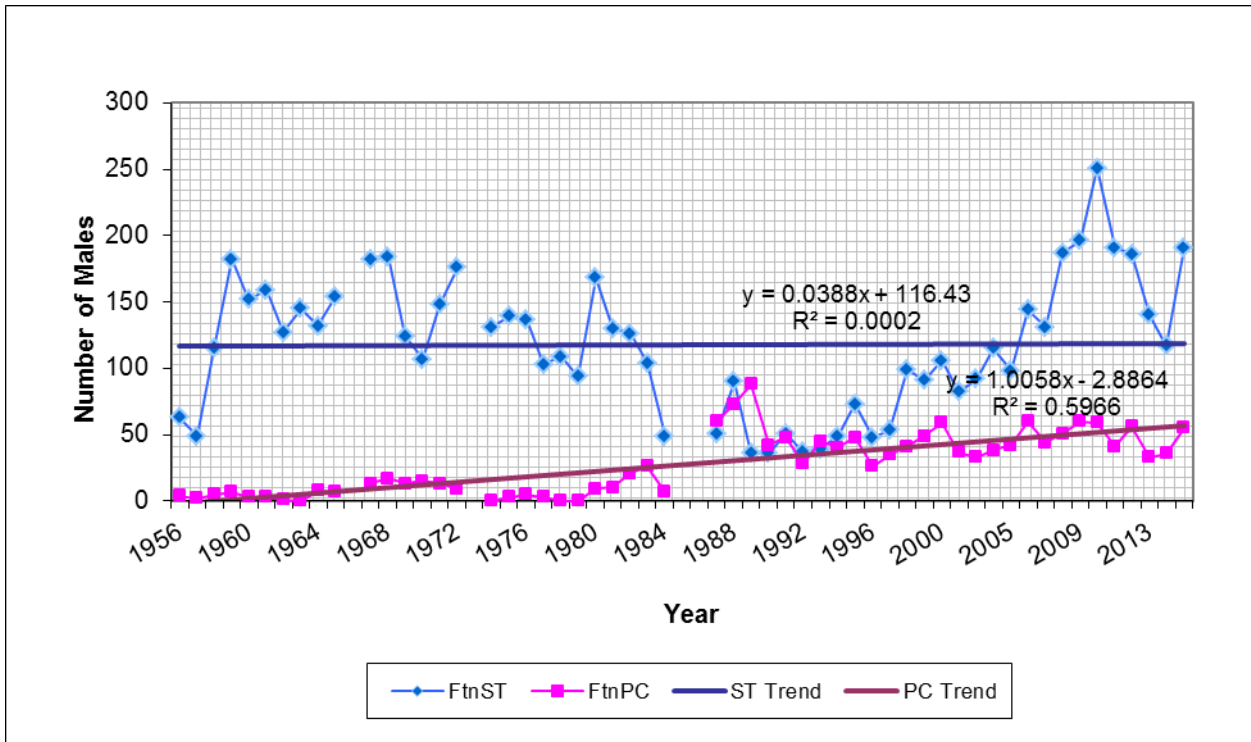


Figure 2. Fort Niobrara NWR prairie grouse lek count results and trends 1956-2015.



Note: Lek counts were incomplete or not done in the mid-1980s; Biologist McPeak has conducted the counts annually since 1987.

Figure 3. 15-year trends for sharp-tailed grouse and greater prairie chickens on Fort Niobrara NWR.

