

## Appendix I. Population Status, Trends and Numbers.

The seven populations of Greater Sage-Grouse (GrSG) in Colorado are shown in Figure 1. Most populations in Colorado occur in Management Zone II defined by WAFWA in the GrSG Comprehensive Conservation Strategy (2006). Two populations (Parachute-Piceance-Roan and Meeker-White River) occur in Management Zone VII. Population numbers and trends for six populations are shown here. The seventh population, Laramie River, does not currently have any known active leks and, therefore, lek counts have not been conducted routinely.

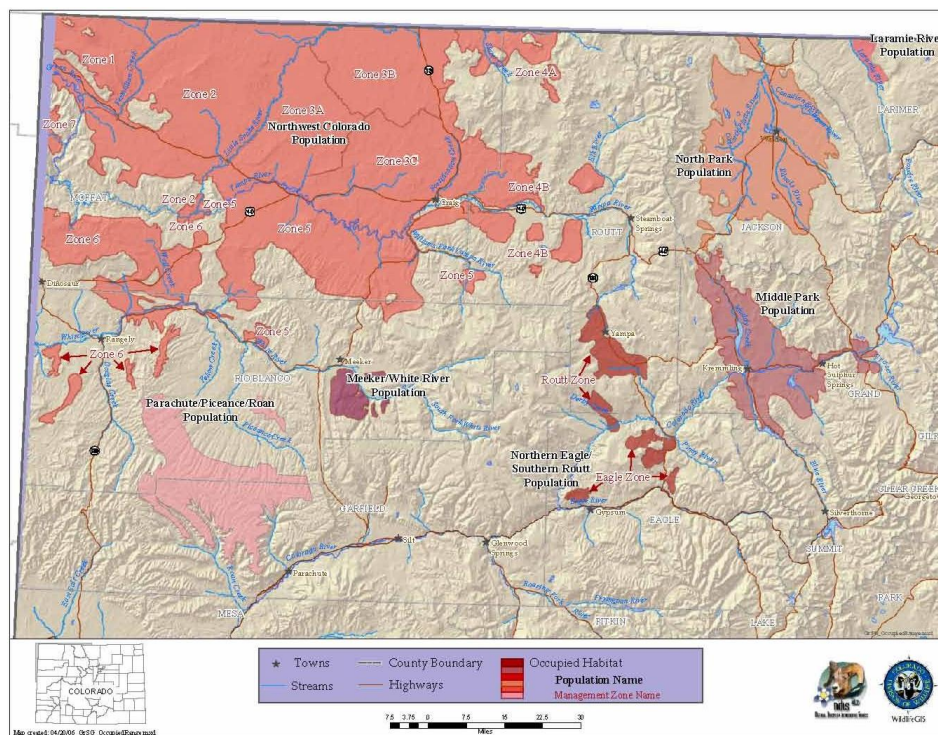


Figure 1. Current distribution of GrSG populations in Colorado.

It is most meaningful to investigate lek counts in terms of 3 -year running averages because CPW does not consider annual fluctuations a good measure when using an index such as lek counts. Lek counts were only designed to be used for long-term trends and not as annual fluctuation indices. Only 10 years of information are included in this dataset because not all populations have data back beyond that. Count methods and overall CPW effort have been consistent during this time period, except for in the PPR population where additional effort is occurring due to various research projects (see PPR specific graph below).

We have detected no significant changes in the status of greater sage-grouse populations within Colorado since 2009 although there has been a very slight increase in most populations in the last few years. Overall, the 2012 counts are slightly higher than 2011 (Figures 2a and 2b). The number of males counted in Colorado is still generally at a 5 - 10 year low, but this is not unexpected given normal periodic fluctuations observed in Colorado lek counts in the past. Based on lek counts in North Park, Colorado, which is arguably the best lek count dataset in North America, numbers are close to a 10 year low although they appear stable with last year.. The level of decline has been observed in the past and we expect the number of males counted in

North Park and throughout Colorado to start increasing in the next few years (3-5 years). There is little concern that the fewer males counted over the last several years represent anything more than normal fluctuations that are expected and somewhat predictable based on weather conditions and population cycling.

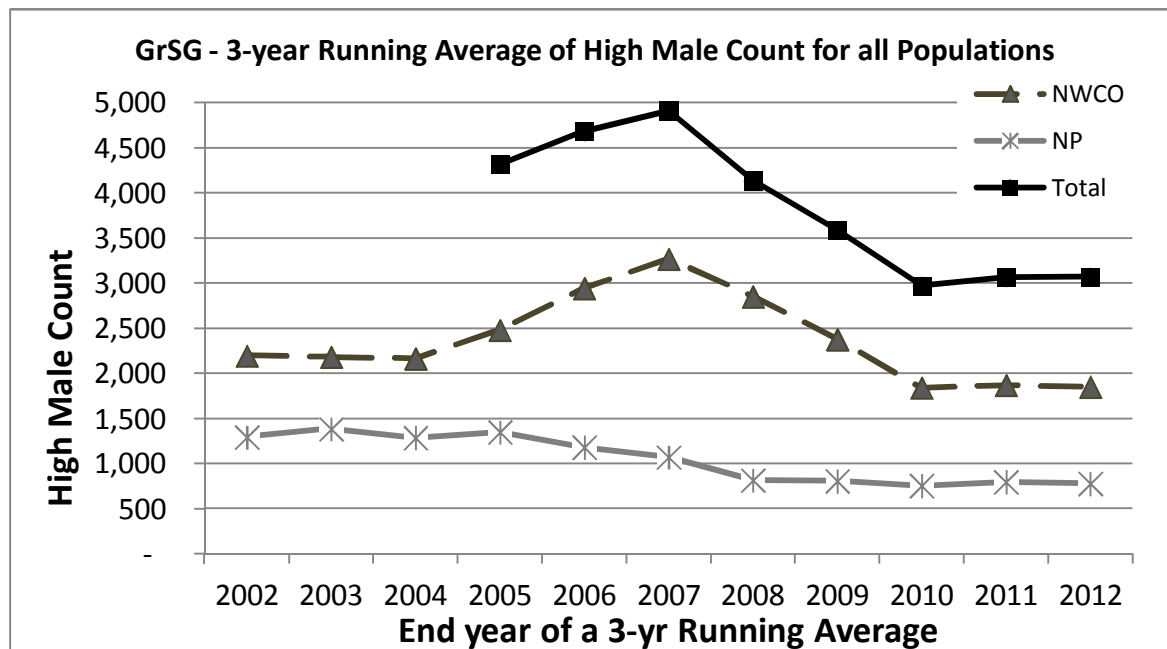


Figure 2a. High male count data for the total of all GrSG Populations and the 2 largest populations (NWCO and NP), 2002-2012. The total data begins in 2005 because PPR and MWR were not counted consistently prior to that.

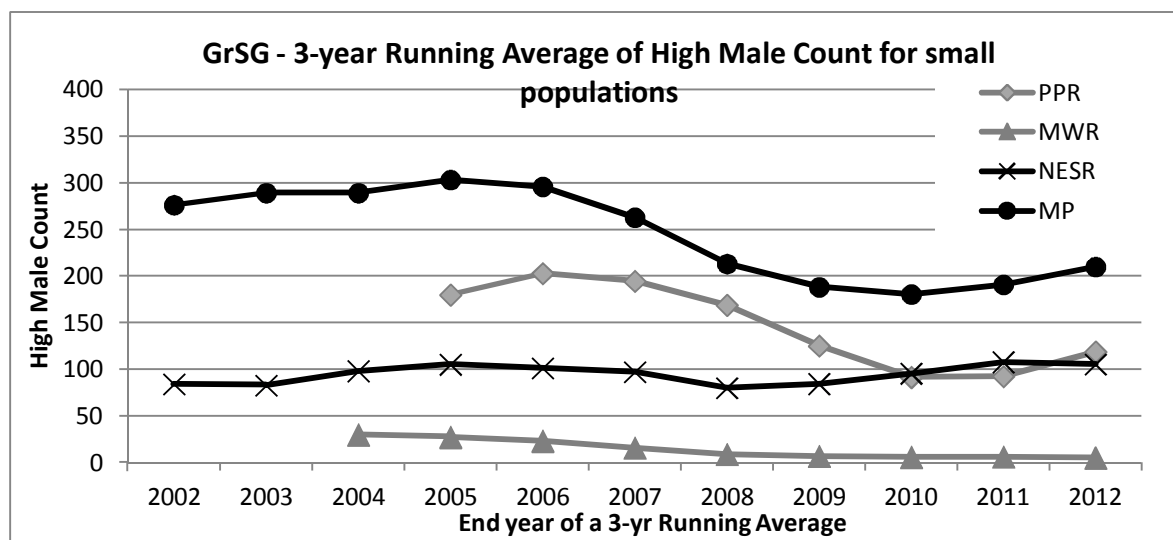
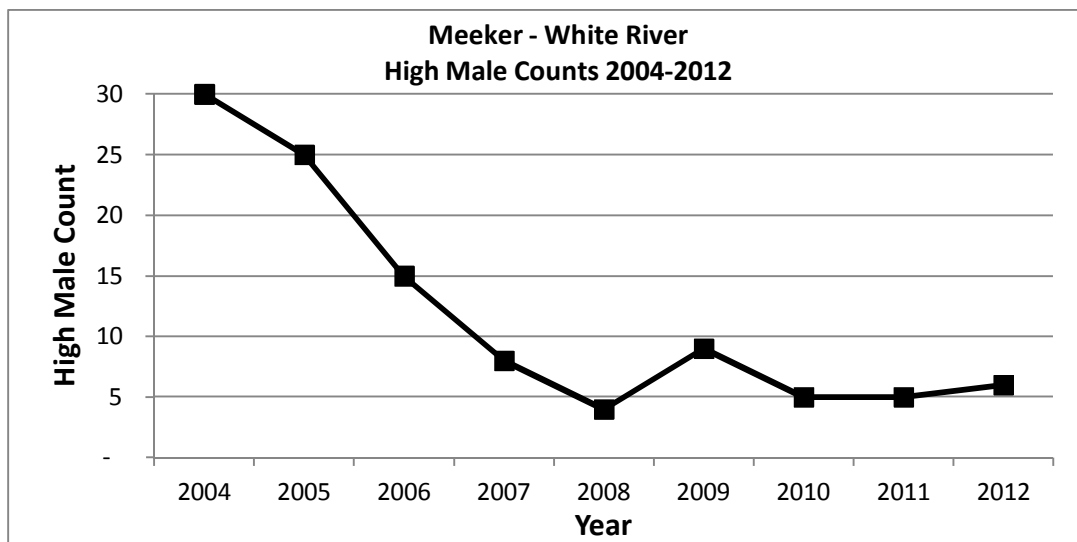


Figure 2b. High male count data for the 4 smallest GrSG Populations (PPR, MWR, NESR, and MP), 2002-2012. Lek counts in the PPR and MWR populations were not consistent prior to the years represented.

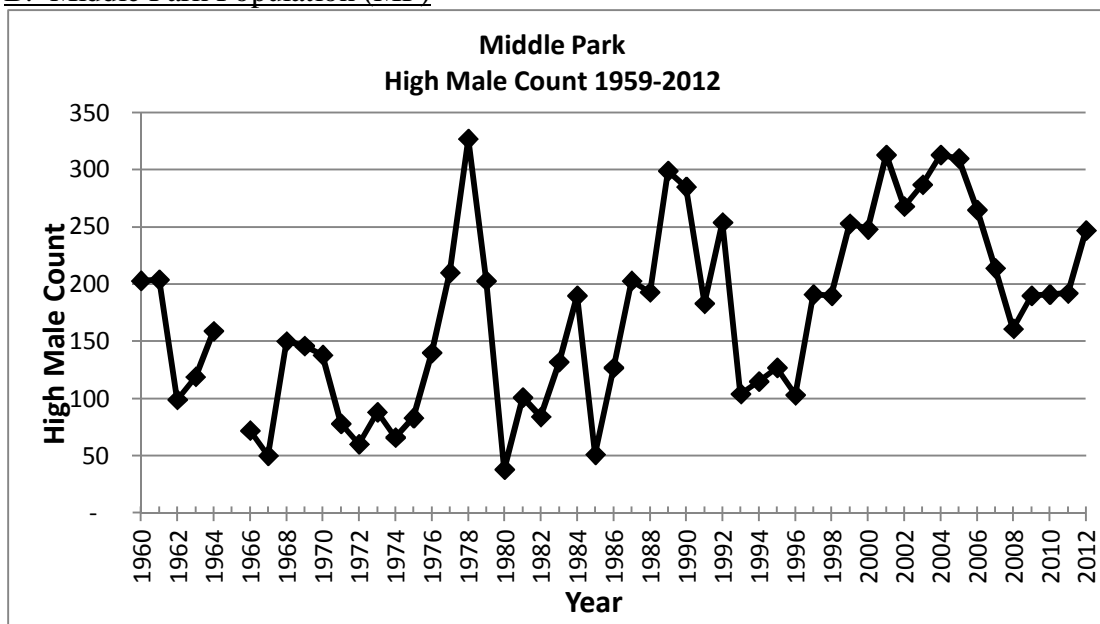
Lek data (high male count) is presented below in more detail for each of the local Colorado GrSG populations. This series of graphs includes all known lek count data for each population through 2012. In general, count methods and effort have been relatively consistent since 1998 although the North Park count effort has been consistent since about 1973 and PPR and MWR only have data for 8 and 9 years, respectively.

#### A. Meeker & White River Population (MWR)

The MWR population is the smallest population in Colorado with one active lek. We continue to monitor 6 additional leks that have not shown activity in years (considered "historic" leks). The current lek was discovered in 2004. The population has probably been in decline since the 1950s.

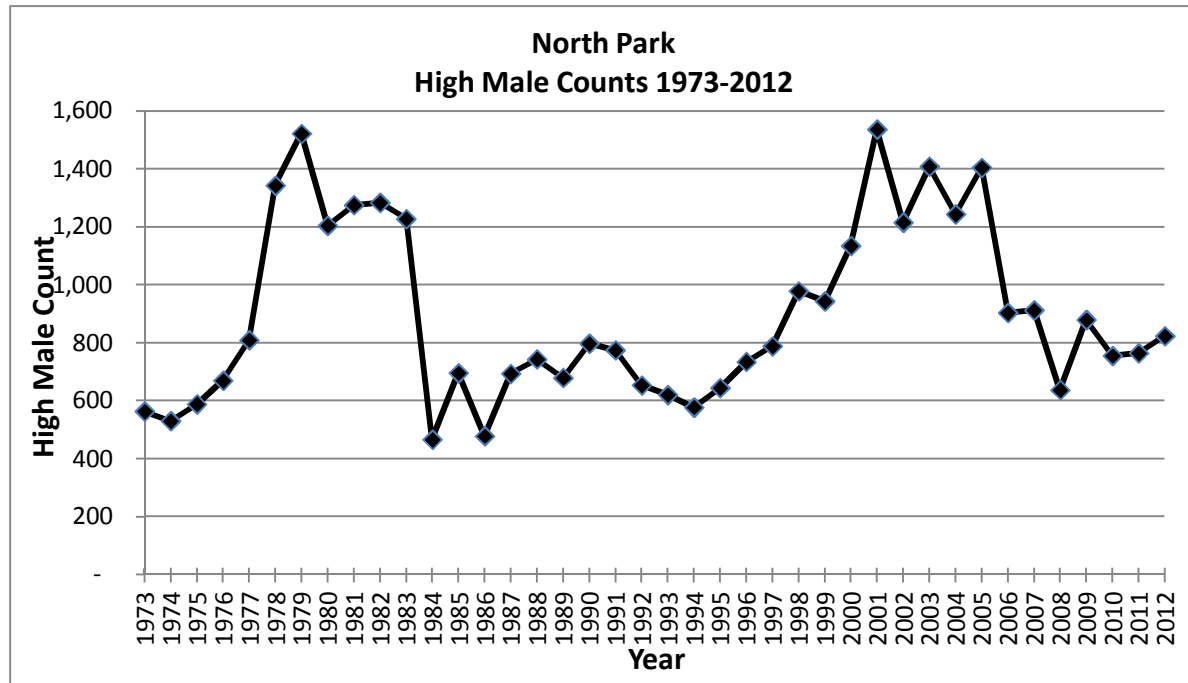


#### B. Middle Park Population (MP)

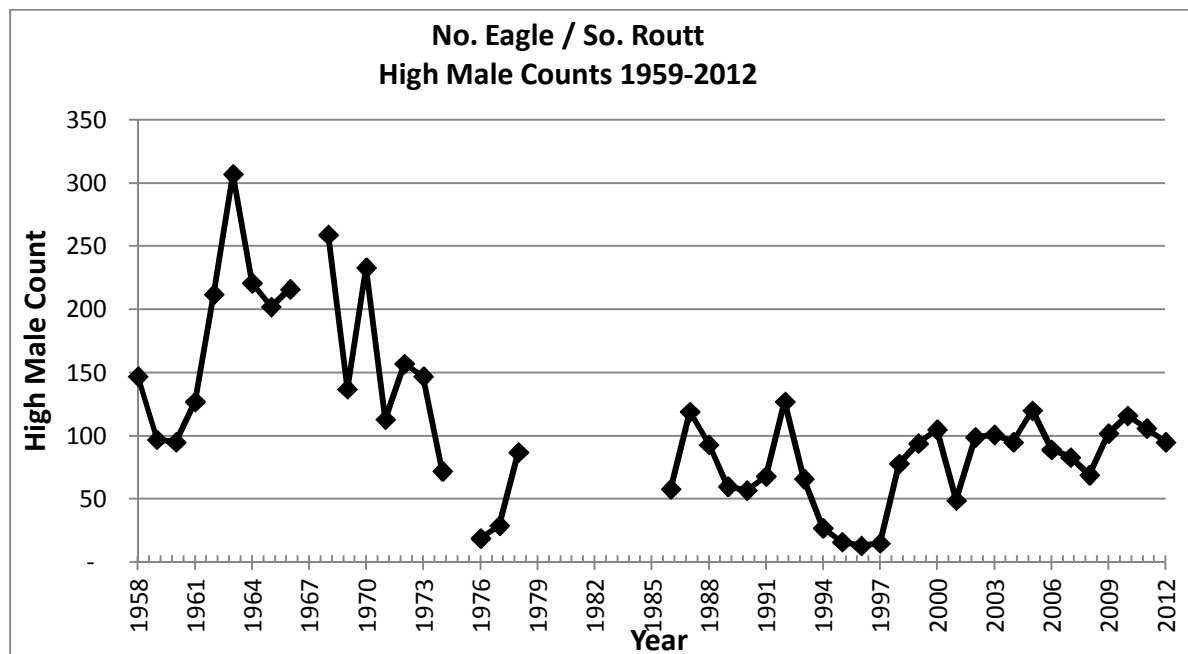


### C. North Park Population (NP)

This population, which has arguably the best lek count data set in North America, shows the fluctuating nature of grouse populations. In 2011, some large leks were not counted due to accessibility and the level of late winter/early spring snow.

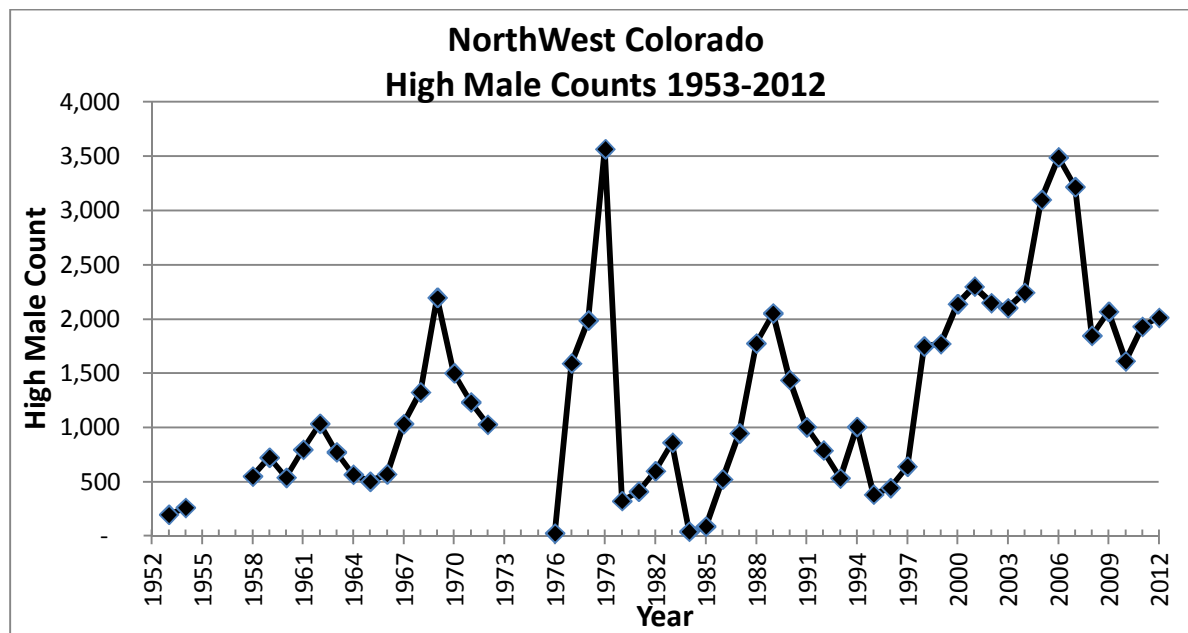


### D. Northern Eagle ó Southern Routt Counties Population (NESR)



#### E. Northwest Colorado Population (NWCO)

The NWCO population is the largest GrSG population in Colorado with high male counts more than twice as high as the next largest population (North Park).



#### F. Parachute ó Piceance – Roan Population (PPR)

Historically, extensive field work in 1976 and 1977 provided the first complete look at sage-grouse distribution and numbers in the PPR (high male count = 234; Kraeger 1977). Recent lek counts have been conducted by helicopter (2005 ó 2012). Data collected in the interim years are not reliable because of the difficulty in obtaining lek count data in the PPR area, and varied effort in conducting lek counts during those years. Lek counts conducted by CPW in the spring of 2006, the most exhaustive count completed since 1976, yielded a high male count of 226 birds. Current, increases in the population may be due to increased efforts due to current research projects by CPW Researcher, B. Walker.

