

## *Ruffed Grouse Drumming Survey Summary 2013*

Ruffed grouse were monitored by counting drumming males on 51 routes throughout 6 mountain ranger districts. Each route consisted of 3-27 listening stations located on game lands. Observers counted drumming males within a 4 minute listening period per station during the last week in March through the first week in April.

Grouse drummed at 96 of the 720 stations (13%). A total of 105 drumming males were detected. Each grouse detected drummed an average of 1.4 times within the 4 minute listening period. Historically grouse abundance and station occupancy rates have been highest in the Cheoah ranger district and lowest in the Grandfather ranger district (Fig 1). However in 2013, Pisgah and Nantahala ranger districts had both the highest abundance (0.21 grouse per station) and the highest station occupancy rates (~19%).

Linear regression analyses indicated significant average annual declines within Cheoah ranger district ( $-0.012 \pm 0.004$  grouse heard per station,  $P < 0.01$ ) and average annual increases within the Pisgah ranger district ( $0.011 \pm 0.004$  grouse heard per station,  $P < 0.01$ ) since 2002. All other ranger districts did not show any significant changes since 2002 ( $P > 0.05$ ).

Significant annual drumming fluctuations exist between years, after accounting for variations between ranger districts ( $P = 0.03$ ) (Fig 2). Since the inception of the survey in 2002, 2007 had the lowest station averages (0.09 grouse heard per station). However long term linear trend analyses of annual abundances and occupancy rates throughout the overall mountains have appeared to be relatively stable since 2002 ( $P = 0.19$ ).

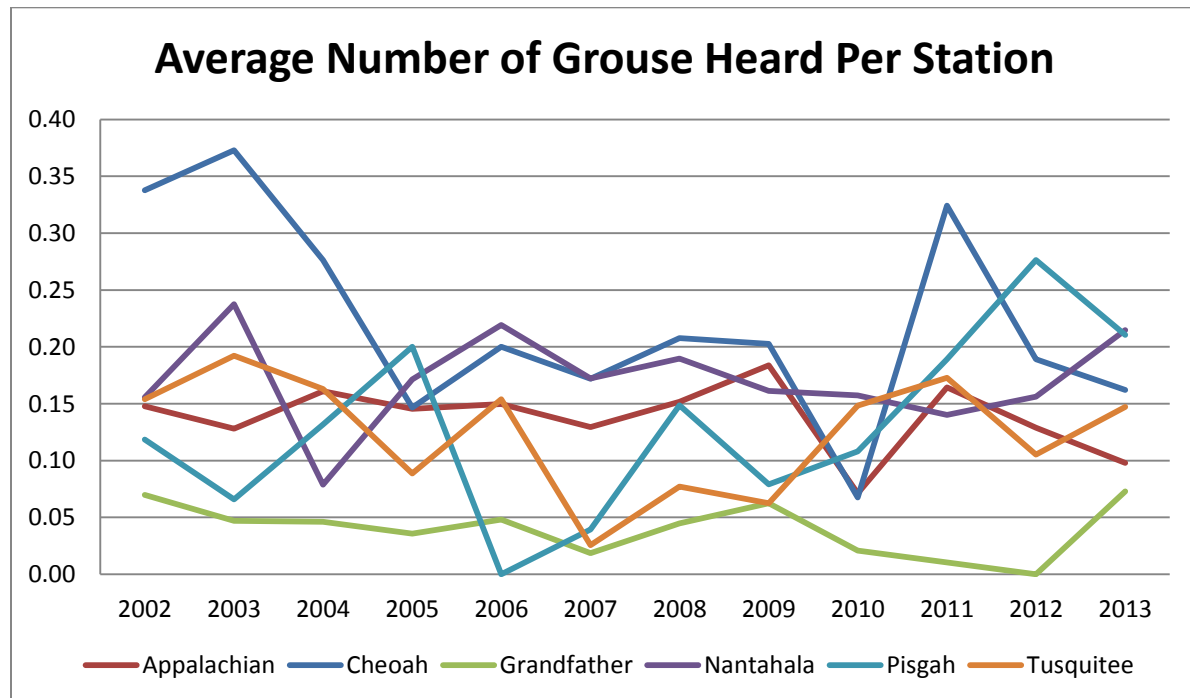


Figure 1. – Average Number of Grouse Heard Drumming Per Station By USFS Ranger District, North Carolina Grouse Drumming Survey, 2002-2013.

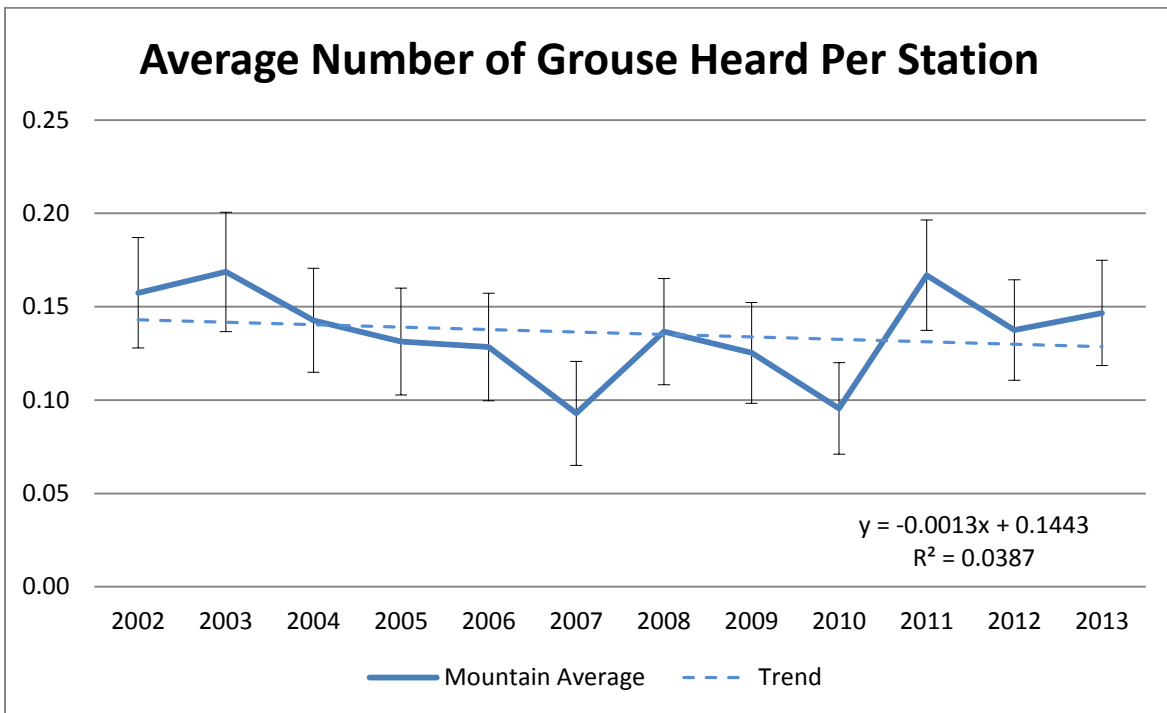


Figure 2. – Average Number of Grouse Heard Drumming Per Station, North Carolina Grouse Drumming Survey, 2002-2013.