Lek Monitoring

UDWR and cooperating partners attempt to count all occupied leks three times each year. A lek is defined as having ≥ 2 strutting males attending the same location for ≥ 2 years; not necessarily two consecutive years. Active leks are any lek that has been attended by male sage-grouse during the annual strutting season. Inactive leks are those where it is documented that no strutting activity has occurred during the course of a strutting season, when the lek was visited at least three times during the strutting season under good survey conditions. Presence can be documented by observation of birds using the site or by signs of strutting activity (e.g. footprints, droppings, feathers). An occupied lek has been active during at least one strutting season within the last 10 years. An unoccupied lek is defined as having no males counted in > 10 years, and can be classified as either destroyed or abandoned. Undetermined leks are any leks for which lek activity has not been documented for > 10 years, but survey information is inadequate to designate the lek as unoccupied, or strutting males have only been observed on one occasion.

Lek counts have been conducted in Utah since 1959 as an index of sage-grouse population sizes and trends. Field survey methods and recording procedures are standardized to ensure that the most consistent and comparable data is collected both through time and throughout the state. Lek counts are the best method to determine long-term population trends statewide, and within each Sage-grouse Management Area. Lek counts are used for analyzing population trends, estimating population size, and are often the focal point of populations, especially non-migratory populations.

All known sage-grouse leks (occupied and unoccupied) are recorded in a geographic information system (GIS). Utah has 529 documented lek sites. Of the 5529 documented leks, 372 (70%) are occupied, 128 (24%) are unoccupied, 29 sites are undetermined. Eight counties do not have any known occupied greater sage-grouse leks; Davis, Grand, Millard, Salt Lake, San Juan, Sanpete, Weber, and Washington.

Most lek count data for Utah was collected after 1967, with Box Elder, Rich, and Summit counties starting earlier. Throughout the following decade and continuing to the present, efforts have focused on annual counts of existing leks and searches to discover unidentified new leks throughout the state. The number of leks counted has increased over time, as new leks have been located. Only 13 leks were counted in 1961 and 1962, which is the lowest number since lek counting began in 1959. The highest number of leks visited was in 2020, with 390 leks visited. Deep and persisting snow pack, making it difficult to access lek locations, explains much of the variability in the number of leks counted through the years.

Below is a summary of statewide SGMA lek count data for all males counted, and within each SGMA for the past 20 years, 2001-2020, with trend line:

Figure 1. Total high count for all Sage-grouse Management Areas within Utah over the past 20 years and males counted per lek for leks with males present. The trend line is fitted to total males counted and represents an overall annual change across two population cycles.

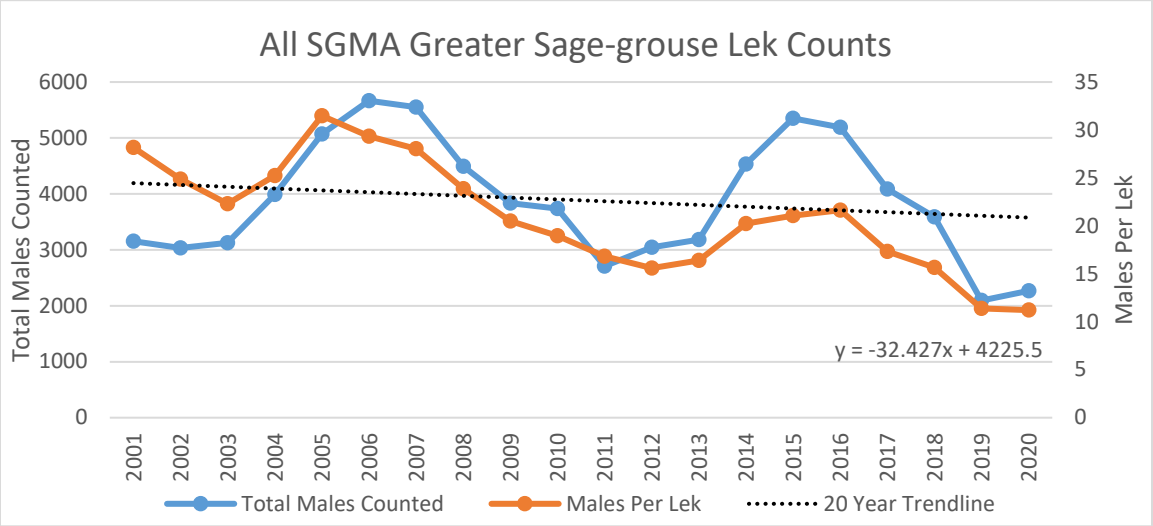

Figure 2. Individual leks visited over the course of a lekking season in Utah relative to the average males per lek. More leks are being counted to maintain the same overall total male counts.

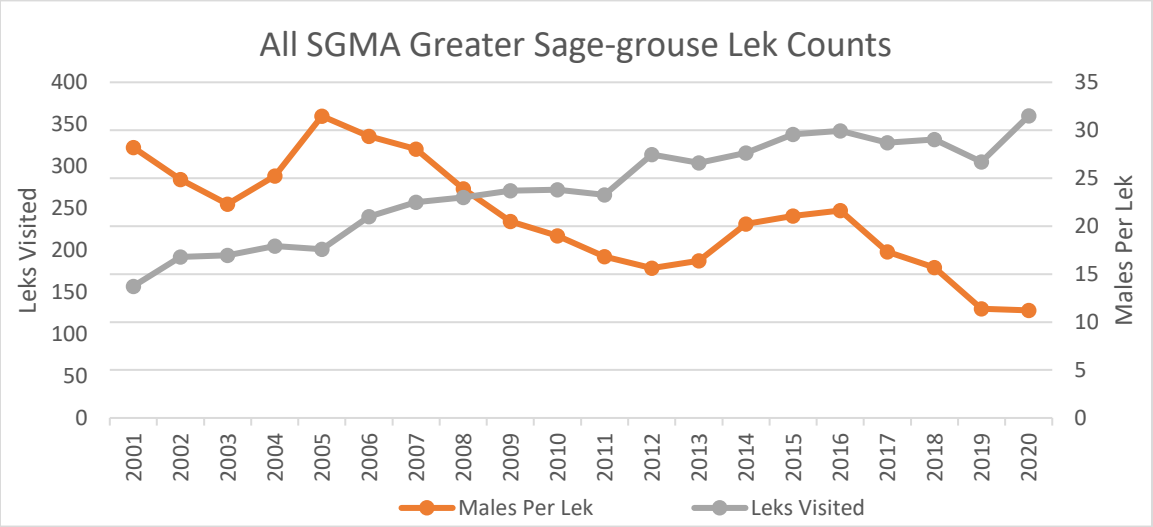

Figure 3. Average males per lek for all leks with at least one male counted and total number of males counted within the Bald Hills Sage-grouse Management Area. Trend line represents a linear regression for total males counts from 2001 to 2020.

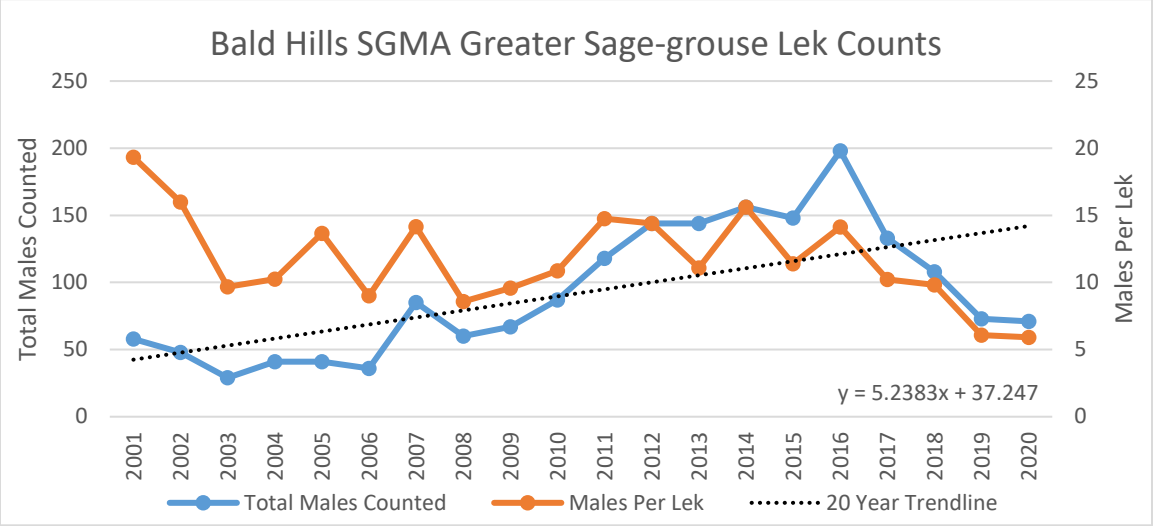

Figure 4. Average males per lek for all leks with at least one male counted and total number of males counted within the Box Elder Sage-grouse Management Area. Trend line represents a linear regression for total males counts from 2001 to 2020.

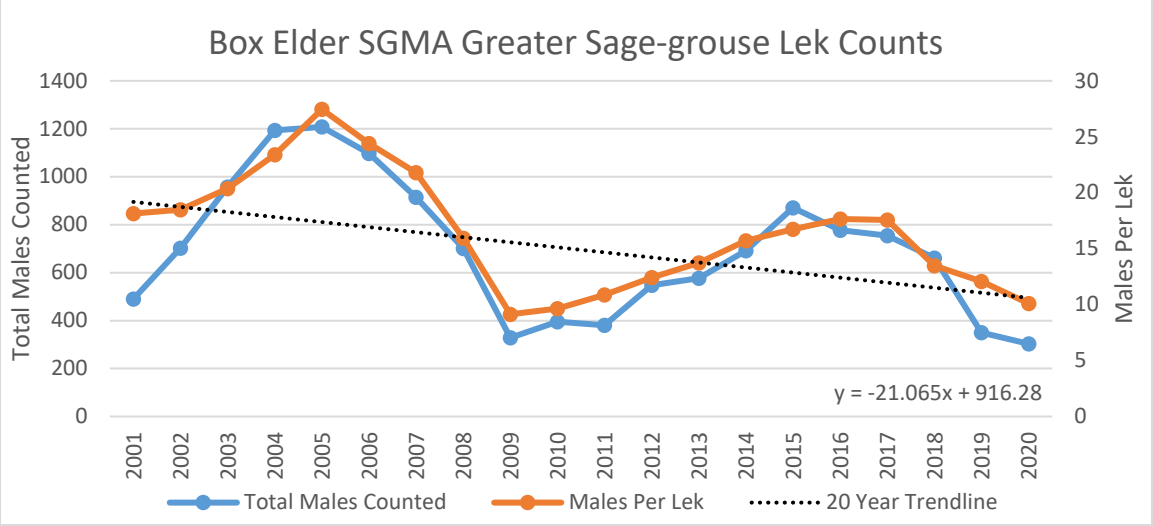

Figure 5. Average males per lek for all leks with at least one male counted and total number of males counted within the Carbon Sage-grouse Management Area. Trend line represents a linear regression for total males counts from 2001 to 2020.

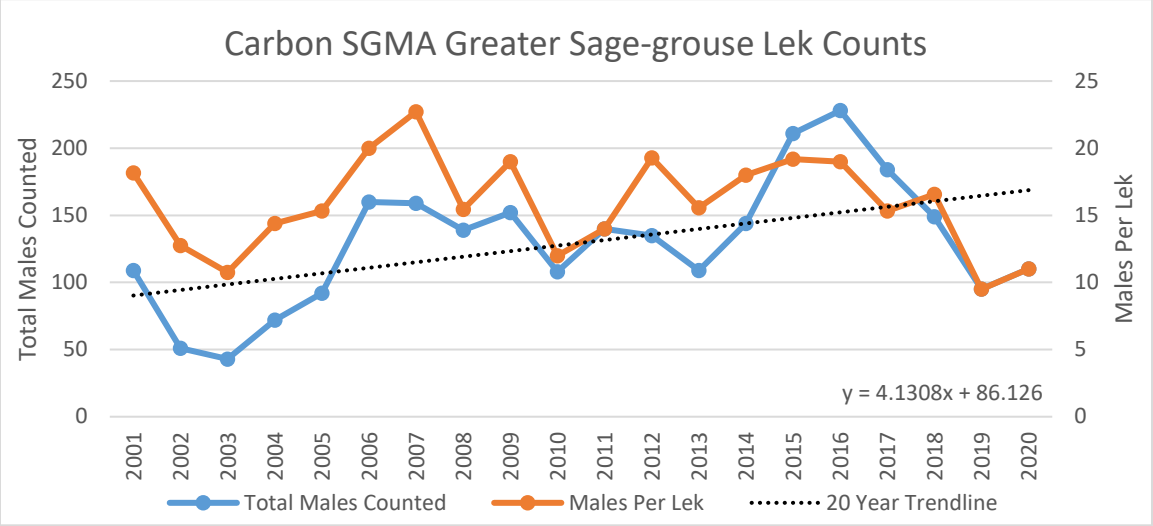

Figure 6. Average males per lek for all leks with at least one male counted and total number of males counted within the Hamlin Valley Sage-grouse Management Area. Trend line represents a linear regression for total males counts from 2001 to 2020.

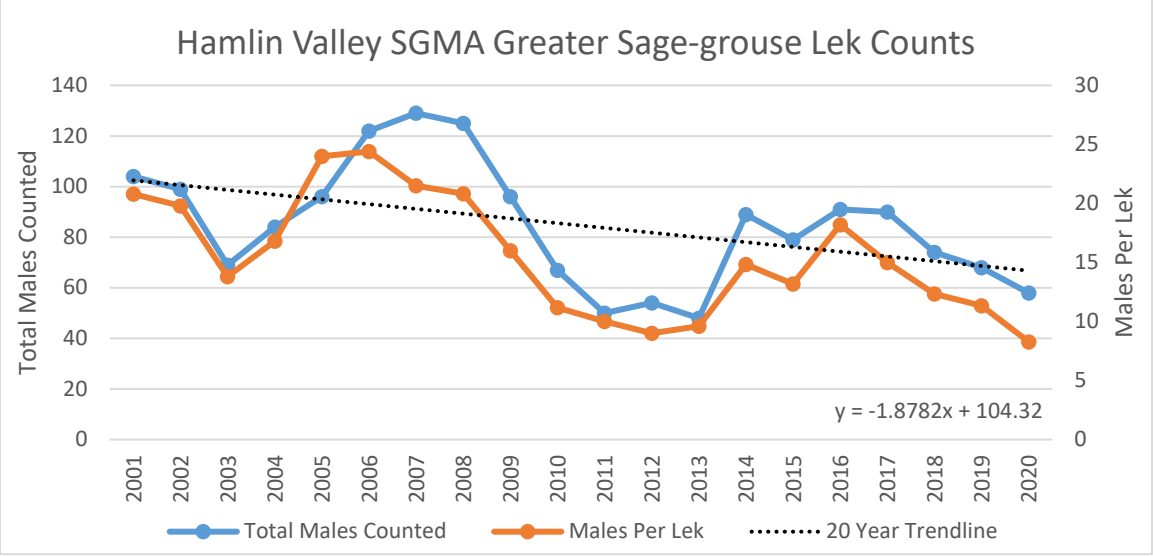

Figure 7. Average males per lek for all leks with at least one male counted and total number of males counted within the Ibapah Sage-grouse Management Area. Trend line represents a linear regression for total males counts from 2001 to 2020.

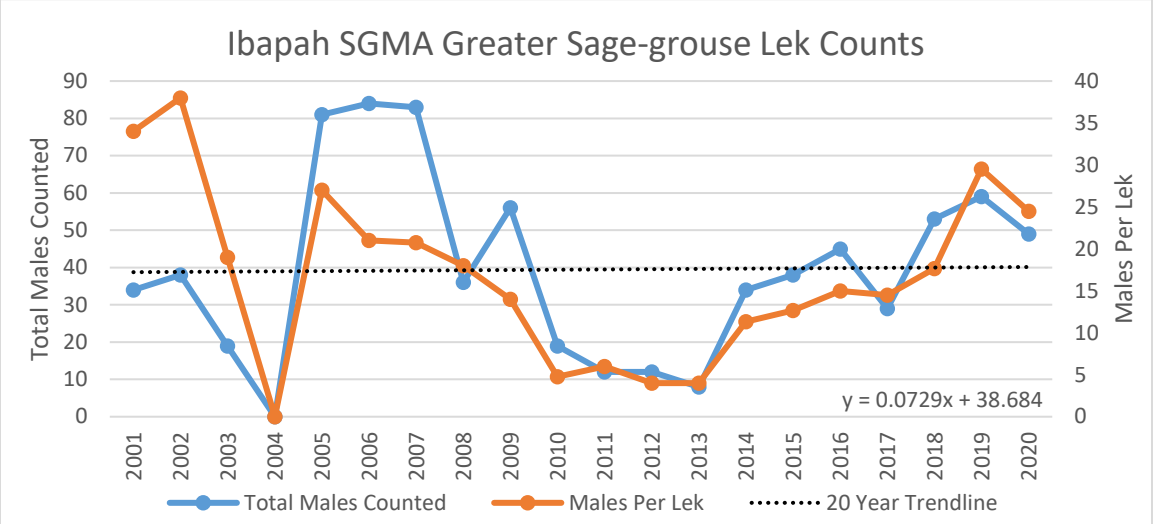

Figure 8. Average males per lek for all leks with at least one male counted and total number of males counted within the Panguitch Sage-grouse Management Area. Trend line represents a linear regression for total males counts from 2001 to 2020.

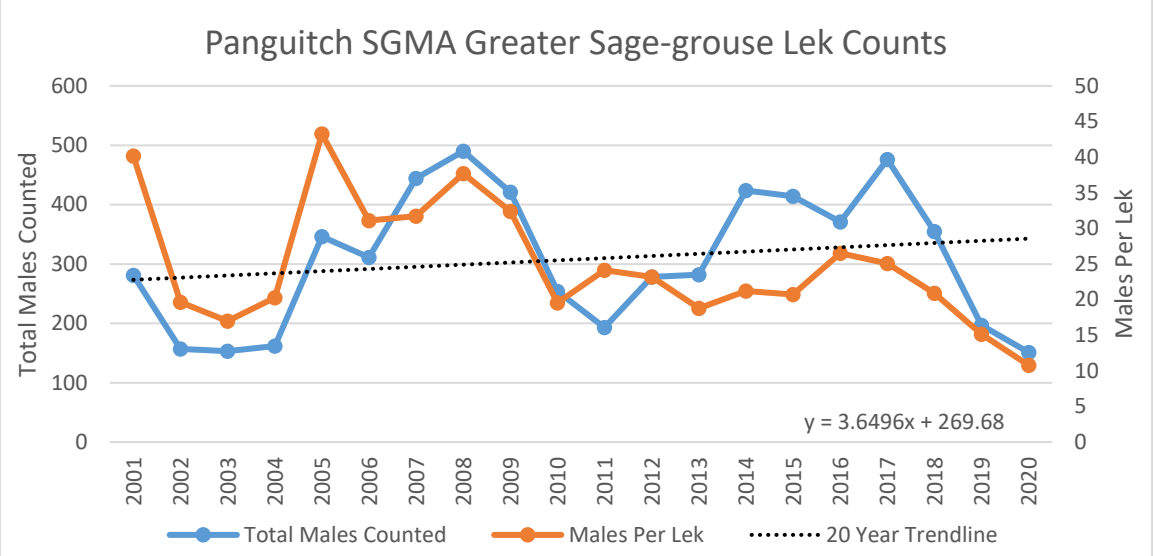

Figure 9. Average males per lek for all leks with at least one male counted and total number of males counted within the Parker Mountain-Emery Sage-grouse Management Area. Trend line represents a linear regression for total males counts from 2001 to 2020.

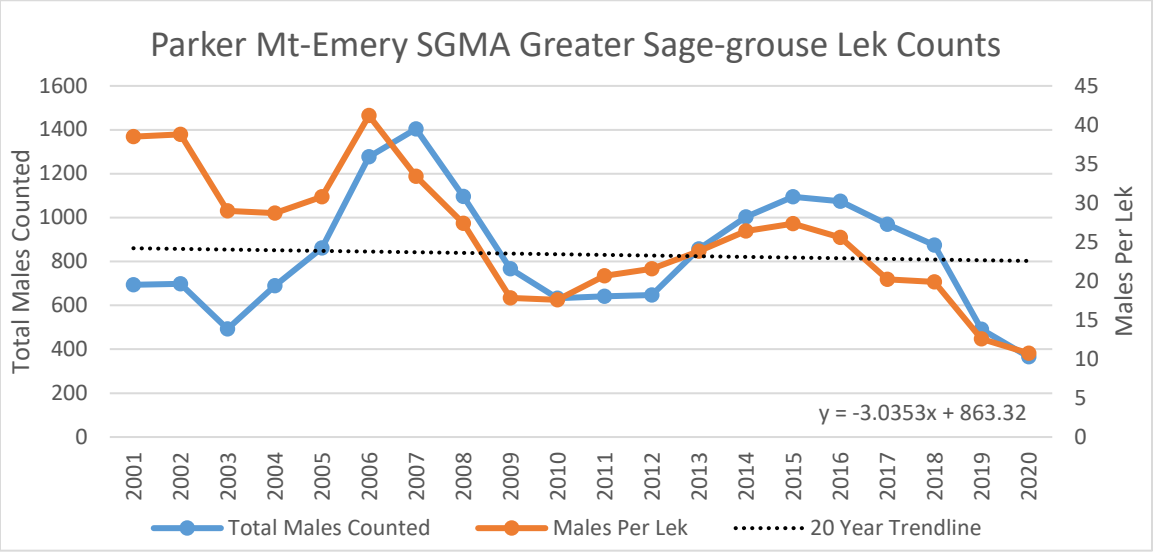

Figure 10. Average males per lek for all leks with at least one male counted and total number of males counted within the Rich-Morgan-Summit Sage-grouse Management Area in 2020. Trend line represents a linear regression for total males counts from 2001 to 2020.

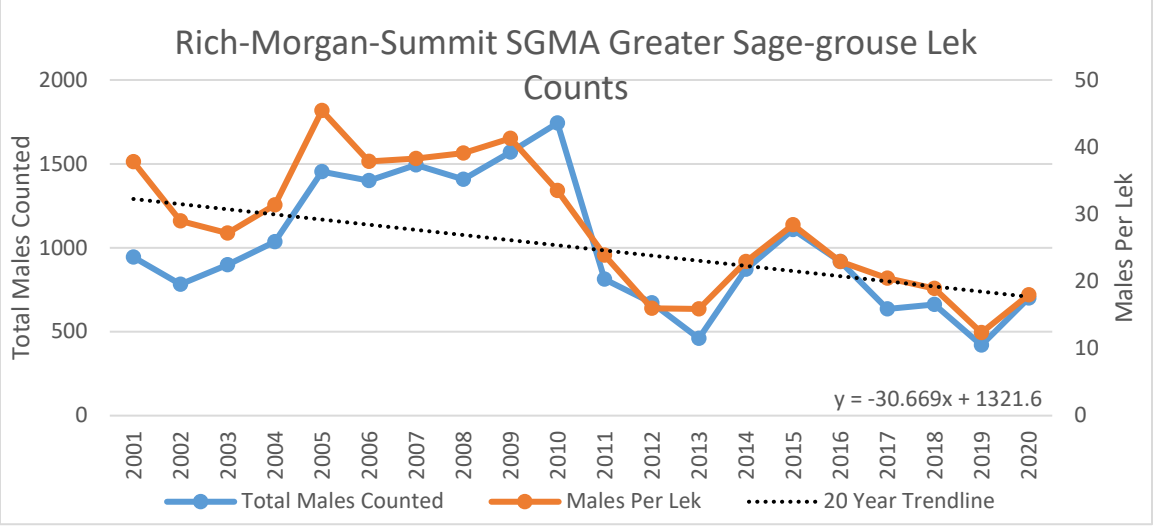

Figure 11. Average males per lek for all leks with at least one male counted and total number of males counted within the Sheeprock Mountains Sage-grouse Management Area. Trend line represents a linear regression for total males counts from 2001 to 2020.

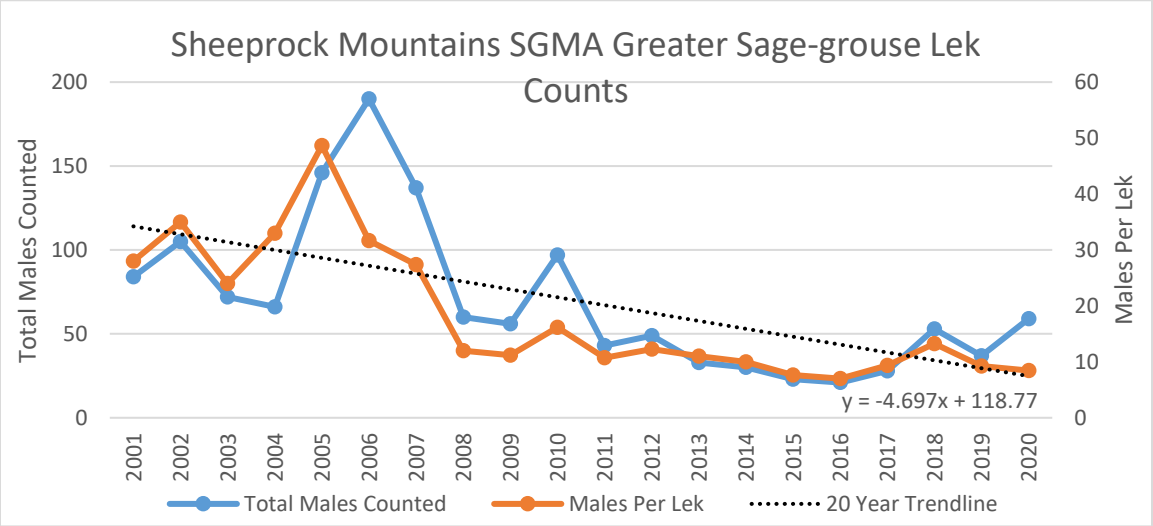

Figure 12. Average males per lek for all leks with at least one male counted and total number of males counted within the Strawberry Valley Sage-grouse Management Area. Trend line represents a linear regression for total males counts from 2001 to 2020.

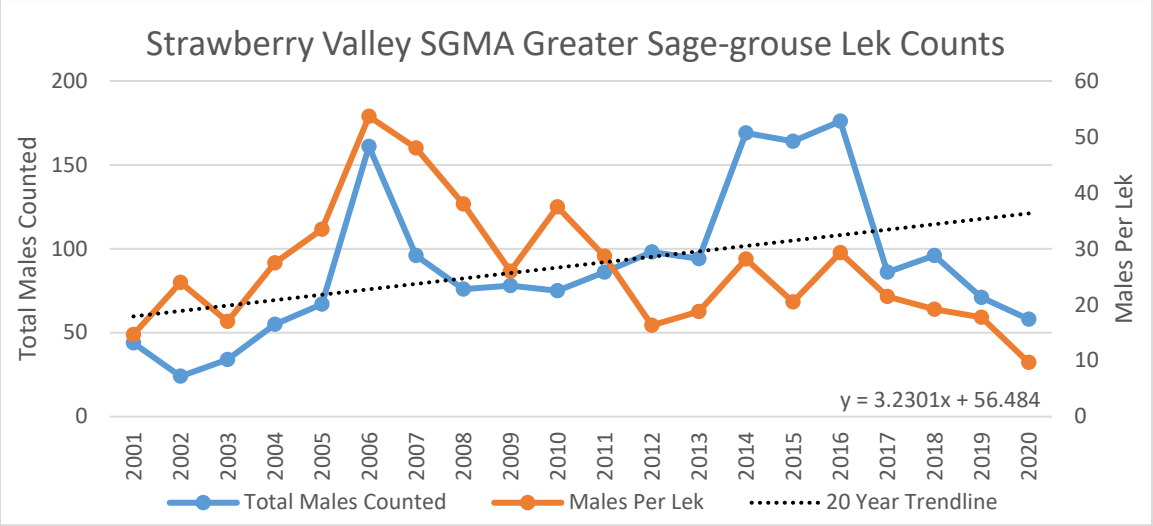

Figure 13. Average males per lek for all leks with at least one male counted and total number of males counted within the Uintah Sage-grouse Management Area. Trend line represents a linear regression for total males counts from 2001 to 2020.

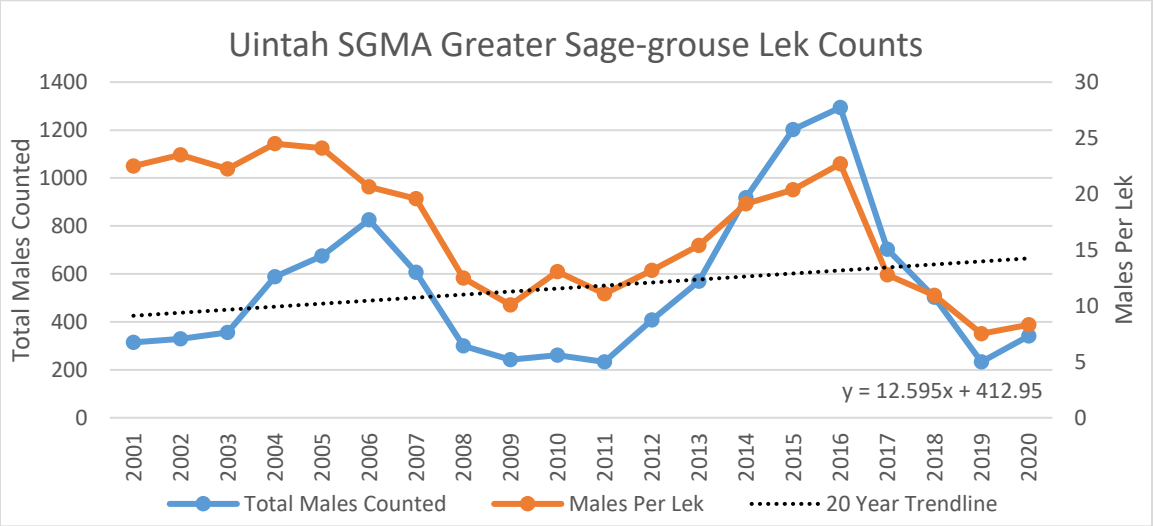

Figure 14. Average males per lek for all leks with at least one male counted and total number of males counted outside of Sage-grouse Management Areas. Trend line represents a linear regression for total males counts from 2001 to 2020.