Extension
UtahStateUniversity

THE COMMUNICATOR

A Quarterly Publication of Utah's Community-Based Conservation Program
Published by the Berryman Institute for Wildlife Damage Management

CBCP
Community Based Conservation Program

OCTOBER 2022 Volume 20, Issue 4

2022 Utah Greater Sage-grouse Lek Count Report

Heather Talley and Avery Cook, Utah Division of Wildlife Resources

Greater sage-grouse (Centrocercus urophasianus) were found warranted but precluded from listing as a protected species under the Endangered Species Act by the U.S. Fish and Wildlife Service (USFWS) in March of 2010. In October of 2015 the USFWS found they were not warranted for listing. However, they are still vulnerable to habitat loss and other factors and remain a species of concern in Utah. As a species of concern, considerable management time, effort, and funding is dedicated to the conservation of sage-grouse.

Sage-grouse life history is tightly woven around leks and leks are a visible center of important sage-grouse habitats. Leks are associated with critical nesting and early brood-rearing habitats, and generally located within nesting habitat used by nesting sage-grouse hens, with the majority of nesting within 3.1 miles of a lek. Annual counts of male sage-grouse on leks has been shown to accurately reflect population changes. The effectiveness of lek counts as population index and relative ease of data collection leads to lek counts forming the basis of most sage-grouse management and population monitoring.

Sage-grouse leks have been counted in Utah for over half a century, and the Utah Division of Wildlife Resources (DWR) maintains lek records extending back to 1959. Lek counts are conducted annually within Utah with a goal of counting the peak number of males on all known leks in the state.

Continued on Page 2.

IN THIS ISSUE

The DWR focused tremendous energy and resources into locating sage-grouse leks and defining populations during the 1960s and 1970s. Records of lek locations and counts form one of the most extensive and continuous monitoring systems for this species across its range. While ground searching for new leks continues, the majority of work is directed toward monitoring known leks.

Over the time period for which data is available, there is a consistent cyclic behavior with a peak and trough every eight to 10 years. Since 1959, we have seen an increase in the number of sage-grouse counted in Utah, however the raw counts are confounded by increasing levels of effort put into counting known leks and searching for unknown leks. To compensate for additional effort increasing total male counts, average males per lek is also calculated and provides an index of population change less impacted by counting effort. However, males per lek also has potential bias as increased search effort is likely to document smaller leks and decrease the average numbers of males per lek. Despite some bias in metrics, overall trend in lek counts is highly correlated with trends in populations.

Although tremendous effort has been invested in lek searches, many areas of the state are relatively poorly surveyed for the existence of sage-grouse leks. Leks also have the potential to shift locations over time in response to vegetation and population changes, making continued lek searches necessary for ongoing monitoring of sage-grouse populations. Ground searches are conducted by Division employees, researchers, agency partners, private landowners, and others. New leks found via ground-based searches are incorporated into the state lek database as an active lek once reported and verified in a second year.

In addition to ground-based searches, aerial lek searches have enabled a more systematic search for leks in remote and poorly accessible areas throughout the state. Aerial searches allow leks to be found in remote areas, in areas with impassable roads, or areas that are otherwise inaccessible. Aerial searches also allow a large area to be surveyed more thoroughly than is possible via ground-based searches. Aerial surveys also eliminate the time necessary to obtain permission to access private lands or other limited access areas.

2022 Lek Counts

In Utah's Sage-grouse Management Areas (SGMAs), 379 greater sage-grouse leks were visited and 205 of those leks had at least one male counted (Figure 1). Across all leks counted within SGMAs there was a high count of 2913 males, for an average of 14.2 males per lek. Statewide a total of 413 greater sage-grouse leks were visited (Figure 2). Of the leks visited, 225 had at least one male counted.

Statewide lek counts within Sage-grouse Management Areas (SGMAs) were up 36.8% from 2021 counts, with 2913 male sage-grouse counted on 205 leks within SGMAs. The increase reverses a downward trend from the last population peak in 2015 through 2021 (Table 1). However, population changes are inconsistent across the state with two SGMAs still declining and the remaining nine showing increases in high male counts. Across all counted leks where sage-grouse were detected there was a high count of 3101 males, for an average of 13.7 males per lek.

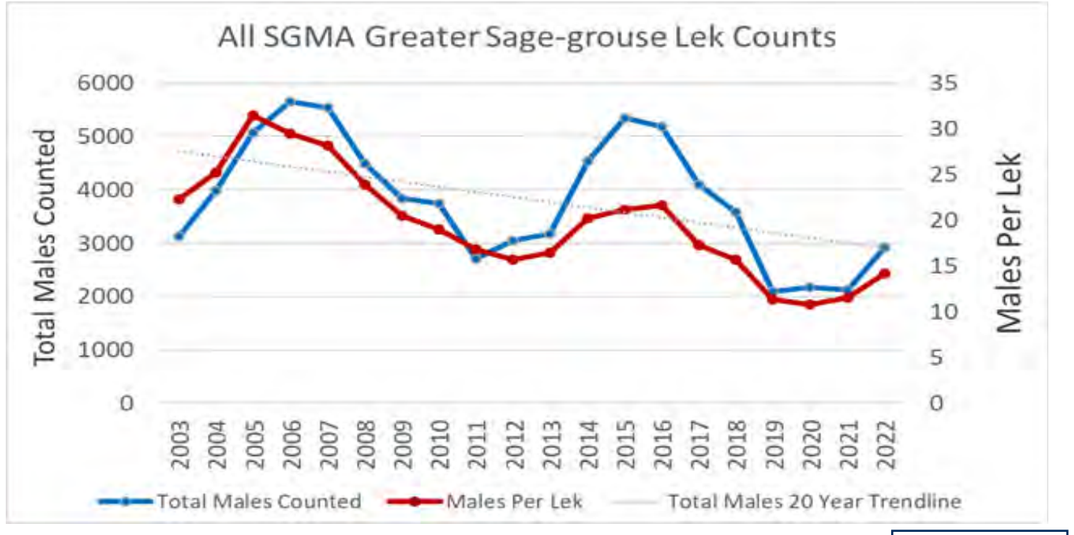
Continued on Page 3.

Systematic greater sage-grouse aerial lek searches are scheduled annually to document new or previously unknown leks. Surveys are conducted by a contractor using infrared (IR) imaging from a fixed wing aircraft. Surveys were scheduled in the Panguitch SGMA. Due to needed repairs followed by long delays in FAA certification the contractor was unable to fly during the survey period this year. Flights are planned to resume next year.

The Bureau of Land Management and US Forest Service resource management plans contain a set of adaptive management triggers developed and evaluated in conjunction with the Utah Division of Wildlife Resources. In 2022, continued declines in lek counts tripped Hard Triggers in the Hamlin Valley Federal Population Area following a soft trigger in the Hamlin Valley Federal Population Area in 2021.

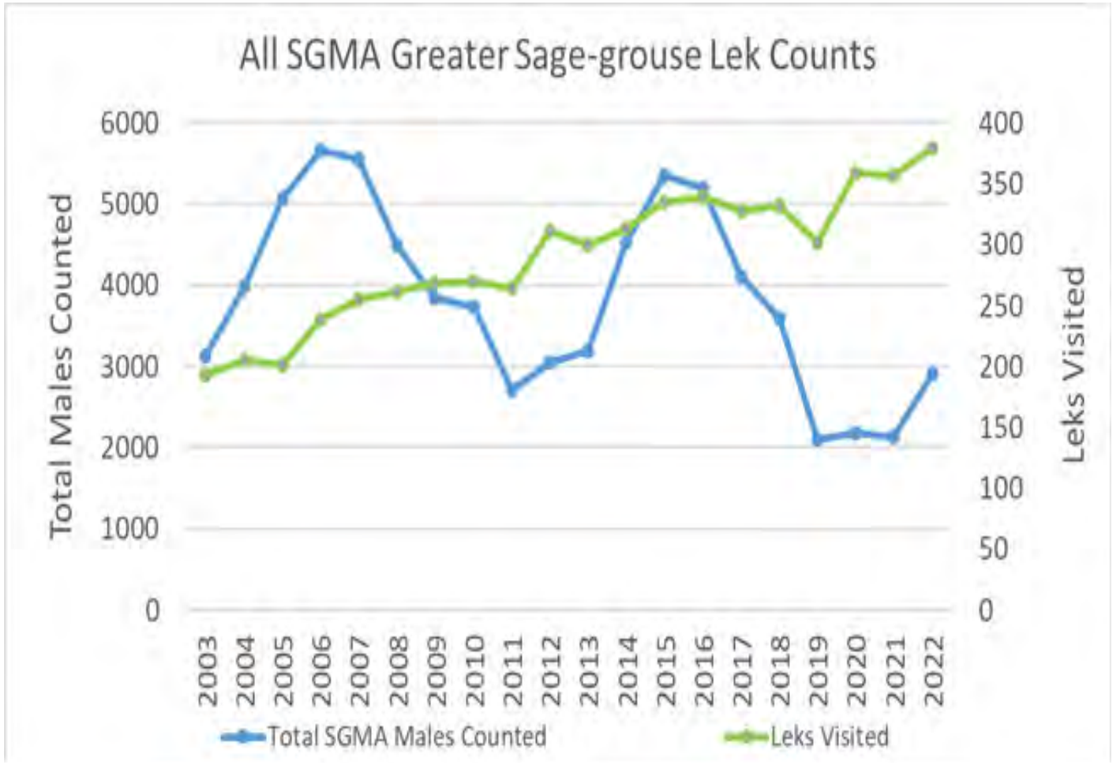
The 2019 Utah Conservation Plan for Greater Sage-grouse in Utah specifies that population areas are evaluated using the slope of a linear regression line fitted to the most recent 20 years of data. The slope of the regression line represents the number of male sage-grouse added or lost from counts per year over the 20 year period. Results in this report are also presented as an annual percent population change over the 20 year evaluation period. Percent change is calculated as the slope of the regression line divided by the average number of male sage-grouse counted over the same period, multiplied by 100.
A complete copy of the report can be accessed at https://wildlife.utah.gov/sage-grouse/reports/lek-count-report-2022.pdf

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.



Continued on Page 4.

Figure 2. Number of leks visited each lekking season in Utah relative to the total number of males per lek. More leks are being counted to maintain the same overall total male counts.



Continued on Page 5.

Table 1. Summary data for male greater sage-grouse high counts within each of Utah's Sage-grouse Management Areas and statewide for the 2022 lek counting season.

	Leks with Males	Total Leks Visited	Total Males Counted	Average Males per Lek (leks > 0)	Percent Change 2021 to 2022	20 Year Regression Slope (male/year)	20 Year Average Count	% Change Per Year over 20 Years	Undetermined Leks Found	Percent of UT Population
Bald Hills	12	17	73	6.1	32.7	3.2	93.3	3.4	0	2.4
Box Elder	37	91	599	13.5	40.2	-31.6	678.6	-4.7	2	19.3
Carbon	8	15	122	15.3	19.6	2.1	132.7	1.6	0	3.9
Hamlin Valley	6	10	43	7.2	-20.4	-2.3	79.3	-2.9	0	1.4
Ibapah	2	4	41	20.5	13.9	-0.1	39.7	-0.2	0	1.3
Panguitch	14	27	196	14.0	100.0	-3.5	300.7	-1.2	1	6.3
Parker Mountain-Emery	41	76	476	11.6	44.2	-19.0	802.2	-2.4	3	15.3
Rich-Morgan-Summit	36	51	758	21.1	22.3	-44.5	977.2	-4.6	0	24.4
Sheeprock Mountains	5	10	40	8.0	-13.0	-4.6	64.3	-7.2	0	1.3
Strawberry Valley	7	10	146	20.9	73.8	2.1	98.5	2.1	0	4.7
Uintah	37	68	519	14.0	48.7	2.4	556.8	0.4	0	16.7
Non-SGMA	20	34	188	9.4	82.5	-1.1	264.1	-0.4	0	6.1
All SGMA	**205**	**379**	**2913**	**11.6**	**36.8**	**-95.7**	**3823.1**	**-2.5**	**6**	**93.9**
All Leks	225	413	3101	13.8	**38.9**	-96.8	4087.2	-2.4	6	100.0

Uintah Basin Sage-Grouse Group Tours SImplot Phosphate Mine

Lorien Belton, Utah State University

The Uintah Basin Adaptive Resources Management Local Working Group (UBARM) recently toured parts of the Simplot phosphate mine that lies north of Vernal, Utah. The impetus for the tour was to see in person how a proposed borrow pit expansion at the mine might intersect with sage-grouse habitat and policies. In addition to learning more about the mine's operations, the tour provided UBARM a great opportunity for better understanding regarding an important partnership.

The borrow pit expansion is part of a long-term plan developed in 1999 by the mine to manage the products that remain after phosphate extraction as it expands operations into new areas. Some additional acreage beyond the current edge of the borrow put will be inundated under the plan. The mine is currently working through policy approvals related to Bureau of Land Management (BLM) split estate (i.e. BLM-managed minerals) on some of the area, and its relationship to BLM sage-grouse habitat designations. The area is also within a designated Utah Sage-Grouse Management Area. The presentations and tour discussions focused on the landscape, both physical and policy-related, associated with the proposal. Brian Maxfield, a Utah Division of Wildlife area biologist, provided insight into where sage-grouse use the landscape near the mine, as well as showing the group where some past habitat work had taken place.

In addition to the borrow pit expansion, tour attendees learned about plans for rerouting the state highway that runs through the mine with many switchbacks. The mine is working with state partners on a new path for the road which will be safer for future travelers and provide benefits for the mine as well.

Simplot has participated in UBARM for many years. They hosted the tour, and provided everyone with safety gear and training to be on site, as well as lunch during the event. Approximately 30 people attended the tour.

Tour attendees in safety gear look at sage-grouse habitat in the distance while standing at the borrow put overlook (photo courtesy L. Belton).

Utah's Community-Based Conservation Program
4900 Old Main Hill
Utah State University
Logan, UT 84322-4900

If it's not good for communities, it's not good for wildlife.

VISIT US ON OUR NEW WEBSITE!
HTTPS://EXTENSION.USU.EDU/UTAHCBCP/

Utah's Community-Based Conservation Program Mission

Utah's Community-Based Conservation Program is dedicated to promoting natural resource management education and facilitating cooperation between local communities and natural resource management organizations and agencies.

www.utahcbcp.org