



State of Nevada Sagebrush Ecosystem Program

SEMI-ANNUAL REPORT

**STATE OF NEVADA
SAGEBRUSH ECOSYSTEM PROGRAM**

The *Semi-Annual Report* is a product of the Nevada Sagebrush Ecosystem Program (SEP). The Sagebrush Ecosystem Technical Team (SETT) and Sagebrush Ecosystem Council (SEC) submit this document biennially to report on the status of Greater Sage-grouse and the sagebrush ecosystem in Nevada, the Progress of the Nevada Conservation Credit System (CCS), as well as other strategies, programs, or projects carried out in pursuant of NRS 321.592 and NRS 321.594.

**NEVADA DEPARTMENT OF CONSERVATION AND
NATURAL RESOURCES**

Jim Lawrence (Acting Director)

Dominique Etchegoyhen (Deputy Director)

Charlie Donohue (Administrator, Nevada Division of State Lands)

SAGEBRUSH ECOSYSTEM TECHNICAL TEAM

Kelly McGowan (SEP Program Manager)

Justin Small (Nevada Department of Wildlife)

Dan Huser (Nevada Division of Forestry)

Kathleen Petter (Nevada Division of State Lands)

Emily Hagler (Nevada Department of Agriculture)

For more information, please contact the SETT at:

201 South Roop Street, Suite 101
Carson City, Nevada 89701-5247
(775) 687-2000



SAGEBRUSH ECOSYSTEM COUNCIL (SEC)

J.J. Goicoechea, Chair (Local Government)

Chris MacKenzie, Vice Chair (Board of Wildlife)

Kyle Davis (Mining)

Steve Boies (Ranching)

Gerry Emm (Tribal Nations)

Starla Lacy (Energy)

Bevan Lister (Agriculture)

William Molini (Conservation and Environmental)

Sherman Swanson (General Public)

Ex-Officio Members

Jim Lawrence (Nevada Department of Conservation and Natural Resources)

Ray Dotson (U.S.D.A. Natural Resources Conservation Service)

Bill Dunkelberger (U.S. Forest Service)

Marc Jackson (U.S. Fish & Wildlife Service)

Jennifer Ott (Nevada Department of Agriculture)

Jon Raby (Bureau of Land Management)

Tony Wasley (Nevada Department of Wildlife)

The Sagebrush Ecosystem Council's mission is to maintain and restore a functional and resilient sagebrush ecosystem to benefit all species while allowing for various land uses. This will be accomplished by working through a diverse coalition of public and private stakeholders.

sagebrusheco.nv.gov

CONTENTS



RDD and Adobe Credit Projects. (SETT)

Nevada Conservation Credit System (CCS)	4
Background	
Implementation Updates	
Progress over the Years	
Current Map of Projects	
Other Program Efforts	8
Plans for Upcoming Year	9
GRSG & Sagebrush Ecosystem Status	10
GRSG Populations in Nevada and Western US	
Threats to Sagebrush Ecosystems & GRSG	
Reporting on NVCCN, ROGER, and LAWGs	14

CONSERVATION CREDIT SYSTEM • BACKGROUND

- As required by the 2013 legislation establishing the SEP, immediately began development of a system to mitigate authorized adverse impacts (disturbances) to sagebrush ecosystems in the State.
- After a year of robust engagement with stakeholders and scientific community, the Council unanimously adopted the Conservation Credit System as the mitigation program in December 2014.
- A primary goal expressed by all stakeholders was to develop a system that, based on best available science, could be used consistently to both quantify authorized adverse impacts to Greater Sage-grouse habitat (debits) and quantify the value of preservation and restoration projects (credits). To achieve this goal, the Habitat Quantification Tool (HQT) was developed and consequently approved by the Council.
- The 2015 Legislature appropriated funds to be used for grants to “kick start” credit projects. Funding was awarded initially in 2016 and, in addition, several landowners began credit projects on their own without any state funding.
- The transfer of credits began in 2017. However, transfers stalled upon the issuance of Instructional Memorandum (IM 2019-018) by the Department of Interior directing that the Bureau of Land Management (BLM) could only require mitigation on federal lands if there was a state regulation requiring it.
- Because the vast majority of disturbances occur on lands managed by the BLM, Nevada became more at risk of having the Greater Sage-grouse listed as threatened or endangered species due to lack of regulatory mechanisms to mitigate disturbances.
- In answer, the Sagebrush Ecosystem Council immediately began work on a regulation requiring mitigation on public lands. A permanent regulation was passed in 2019.
- A combination of continuous program engagement and the adoption of the regulation has resulted in a significant increase in credit project development and CCS mitigation transactions.
- Nevada is now considered a regional leader in the implementation of a conservation credit system or habitat exchange, being one of the first to have finalized several transactions.

CONSERVATION CREDIT SYSTEM • LATE 2022 UPDATES

In late 2022:

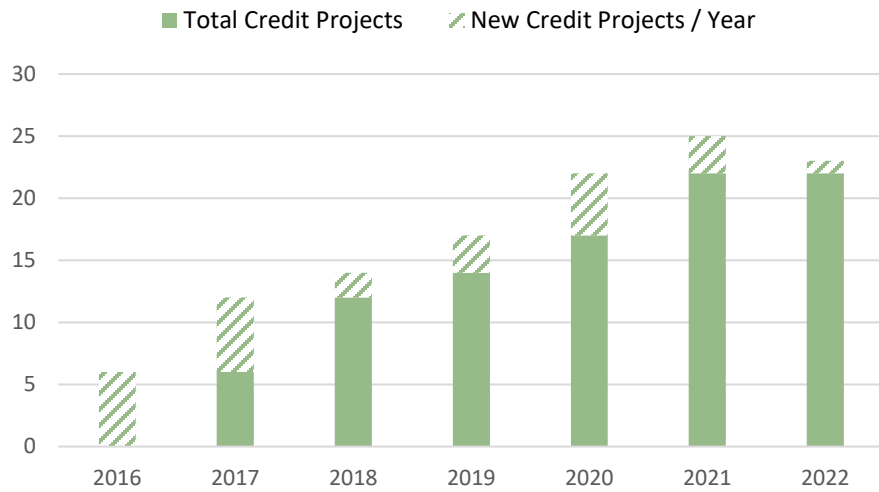
- Eight mitigation transactions occurred using the CCS. Nearly 40 transactions have occurred since the first one in 2017.
- These transactions from 2022 involved transfers of over 800 credits from six private land credit developers that encompass more than 3,500 acres of high value sage-grouse habitats to be conserved for 30 years or more.
- All current credit project proponents completed annual monitoring.
- Two new credit projects are near completion and conserve approximately 3,200 acres and account for over 2,000 credits.
- The SETT visited two properties to discuss entry of new lands into the CCS and the improvement of lands already entered.
- The SETT conducted several desktop assessments on behalf of debit project proponents. Some, if developed, may generate debits in the thousands.
- The SETT participated in several recurring NEPA meetings to ensure proper avoidance, minimization, and mitigation.



Lamoille Canyon. (SETT)

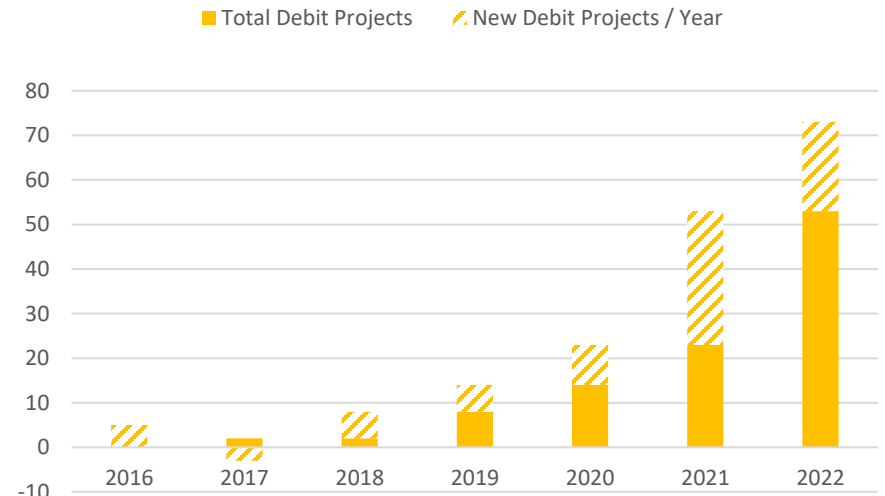
CONSERVATION CREDIT SYSTEM • THE CCS THROUGH THE YEARS

Cumulative Credit Projects 2016 - Current*



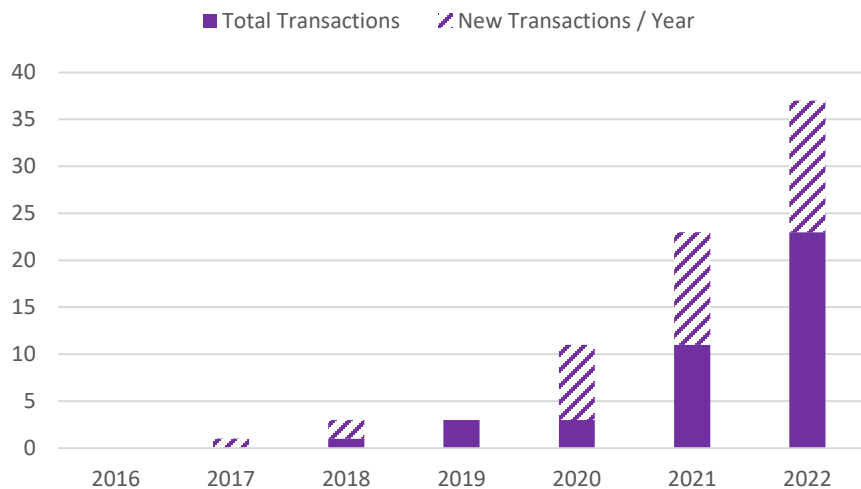
* 2021 and 2022, a total of three credit projects withdrew.

Cumulative Debit Projects 2016 - Current*



* 2017, prior to the regulation, reflects debit projects that entered the system previously, then withdrew.

Cumulative Transactions 2016 - Current



Cumulative Debits Offset 2016 - Current

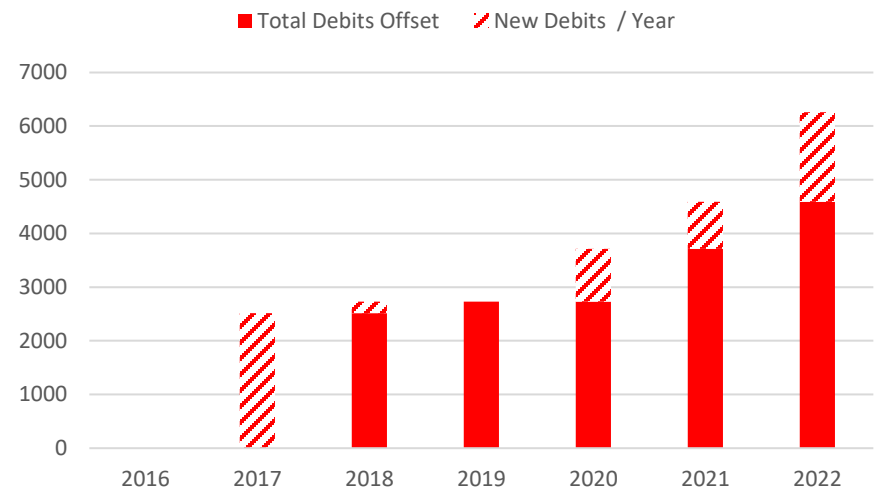


FIGURE 1: Conservation Credit System progress

CONSERVATION CREDIT SYSTEM • CURRENT MAP OF CCS PROJECTS

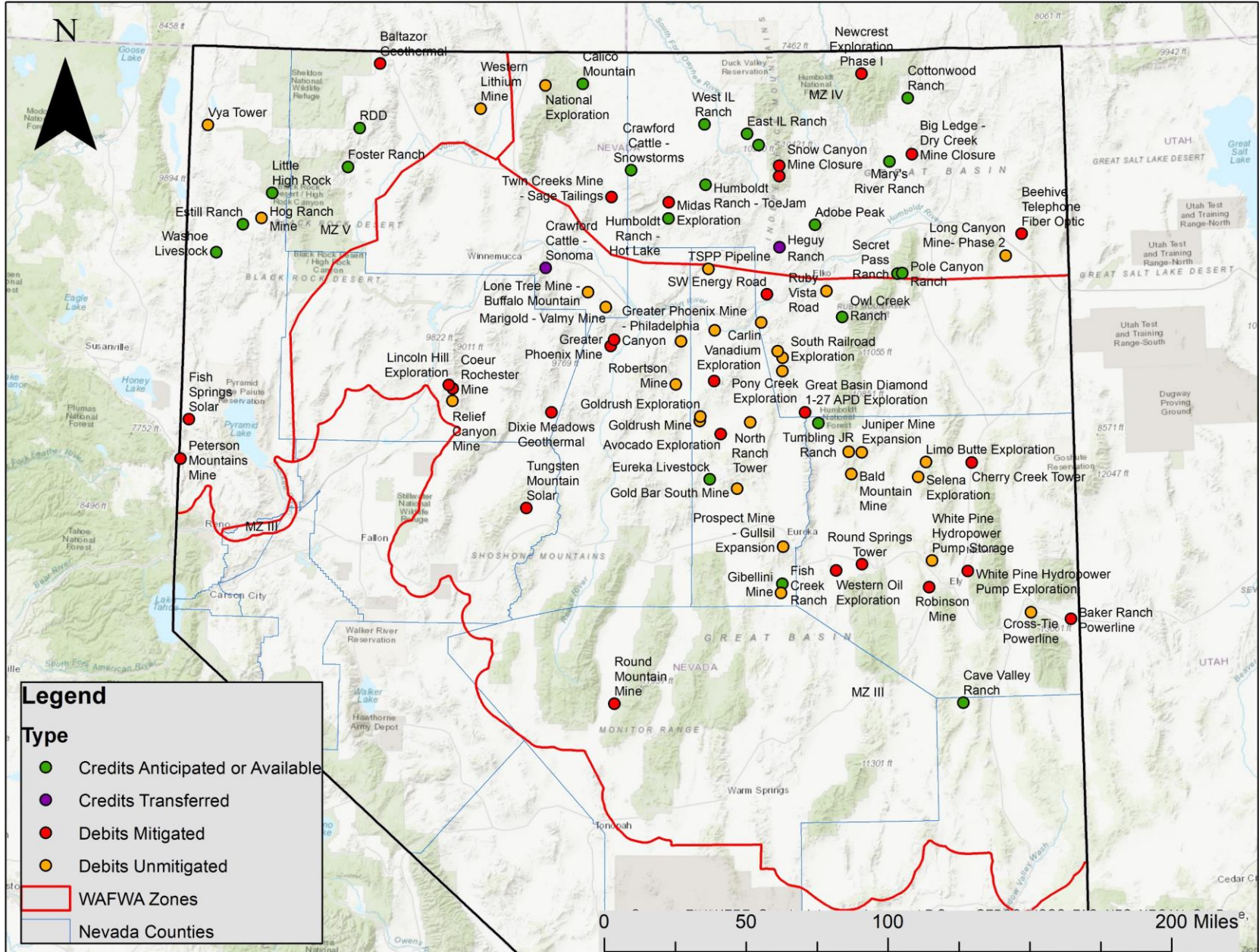


FIGURE 2: Map of the Conservation Credit System Projects

OTHER PROGRAM EFFORTS • LATE 2022 UPDATES

Other efforts of the Sagebrush Ecosystem Program through December of 2022 included:

- Two in-person SEC meetings.
- Attended the WAFWA Sage Grouse Conference in Logan, Utah.
- Assisted with overseeing the Future Farmers of America Annual Competition.
- USGS and Environmental Incentives subgrant management for technical tools development and improved application of the CCS.
- Weed maps, prioritization of annual invasive grass treatments, and meetings on Early Detection - Rapid Response.
- Represented the SEP on Nevada's Shared Stewardship Technical Advisory Committee, coordinated meetings to update the SEP Strategic Action Plan and associated "Core" habitat mapping, and participated in the planning effort associated with the NDOW Sagebrush Conservation Framework.
- ROGER (Results Oriented Grazing for Ecological Resiliency) meetings and Nevada Collaborative Conservation Network (NvCCN) meetings.
- Nevada Creeks and Communities Team assistance with Proper Functioning Condition workshops.
- CCS project entries in the GRSG Conservation Efforts Database and the USFS SMART database.
- Conferences, meetings, and webinars related to GRSG, wildfire, invasive plants, mitigation, and mining.

WAFWA Sage Grouse Conference Tour. (SETT)



PLANS FOR THE UPCOMING YEAR • LATE 2022 UPDATES

- 8th Annual CCS Verifier Training in January 2022. Last year, 75 individuals participated, and 54 were certified to work on CCS projects.
- CCS credit project, debit project, and transaction management, as well as Cooperating Agency status for multiple NEPA planning processes.
- SEP Strategic Action Plan update.
- Sagebrush/Habitat conservation planning with NDOW.
- Federal land use plan amendments.
- The adaptive management process outlined in the NV Greater Sage-Grouse Conservation Plan, BLM, and USFS land use plans.
- Development of annual conference for credit and debit project participants.
- Discussions on an annual symposium with other Western States involved in sagebrush ecosystem conservation and GRSG mitigation.
- Implementation of additional conservation associated with the CCS and through existing agreements and grant opportunities.



SEC Tour 2022. (SETT)

GREATER SAGE-GROUSE • SAGEBRUSH ECOSYSTEM & GRSG STATUS

GREATER SAGE-GROUSE POPULATION OVERVIEW

The Nevada Department of Wildlife, in conjunction with federal agency partners including the Bureau of Land Management (BLM), U.S. Forest Service (USFS), U.S. Geological Survey (USGS) and the U.S. Fish and Wildlife Service (USFWS), conducts sage-grouse lek counts and surveys annually. Techniques to monitor leks include traditional ground surveys using accepted protocols and aerial survey using rotary or fixed wing aircraft. Some fixed wing surveys are outfitted with cooled infrared camera technology (thermal imaging) with telephoto capabilities and flown at altitudes that minimize or negate disturbance to birds. Approximately 40% of the 1,981 known sage-grouse leks and approximately 75% of trend leks identified within the state are surveyed each year. Trend leks are a subset of total leks in Nevada that are monitored several times each year to enable a better trend estimate for sage-grouse populations in Nevada.

Year	No. of Males	Leks Surveyed	Active Leks	AVG/active lek
2002	5,093	652	321	15.9
2003	5,010	402	271	18.5
2004	7,472	505	321	23.3
2005	10,144	760	389	26.1
2006	11,229	737	433	25.9
2007	11,317	947	525	21.6
2008	7,550	786	438	17.2
2009	7,398	860	442	16.7
2010	7,402	752	411	18.0
2011	8,571	810	438	19.6
2012	9,953	935	523	19.0
2013	7,394	820	454	16.3
2014	9,063	934	512	17.7
2015	12,551	1,003	606	20.7
2016	13,366	1,048	586	22.8
2017	11,027	954	552	20.0
2018	9,184	971	551	16.7
2019	7,098	849	460	15.4
2020	2,306	394	182	12.7
2021	4,892	982	436	11.2
2000-2020 AVG.	8,577	772	435	19.1

Due to the Covid-19 pandemic, NDOW biologists and volunteers were challenged to count leks during the spring 2020 lek surveying season, however lek counts were conducted at normal capacity during 2022. A total of 982 leks were surveyed during 2022 (compared to only 394 in 2020), which is approximately 49% of the 2,002 known leks in Nevada. Of the leks surveyed, 436 were considered active (2 or more males). Peak male attendance rate for active leks average 11.2 males per lek, which is 41.4% below the 2000-2020 average of 19.1 males per lek. The attendance rate for 2021 was the lowest observed during the 2002-2021 period. The lek count summary from 2002-2021 is provided in Table 1.

Source: Nevada Department of Wildlife, Nevada Sage-grouse Conservation Project Final Performance Report. September 2022

TABLE 1: Lek count summary (2002–2021)

GREATER SAGE-GROUSE • SAGEBRUSH ECOSYSTEM & GRSG STATUS

GREATER SAGE-GROUSE POPULATION OVERVIEW

In 2021, NDOW and partners counted 157 trend leks, which exceeded the previous 20-year average of 152 trend leks counted per year. Average male attendance at trend leks was 9.9 during the 2021 spring breeding season, which was 47.2% below the 2019 average of 18.8 males per trend lek and 61.5% lower than the long-term average of 25.8 males per trend lek. Data from 2020 were not used for comparison due to low sample sizes. The 2021 trend lek attendance rate represents the lowest attendance rate ever recorded. Trend lek attendance is provided in Figure 3 from 2000-2021.

Source: Nevada Department of Wildlife, Nevada Sage-grouse Conservation Project Final Performance Report. September 2022

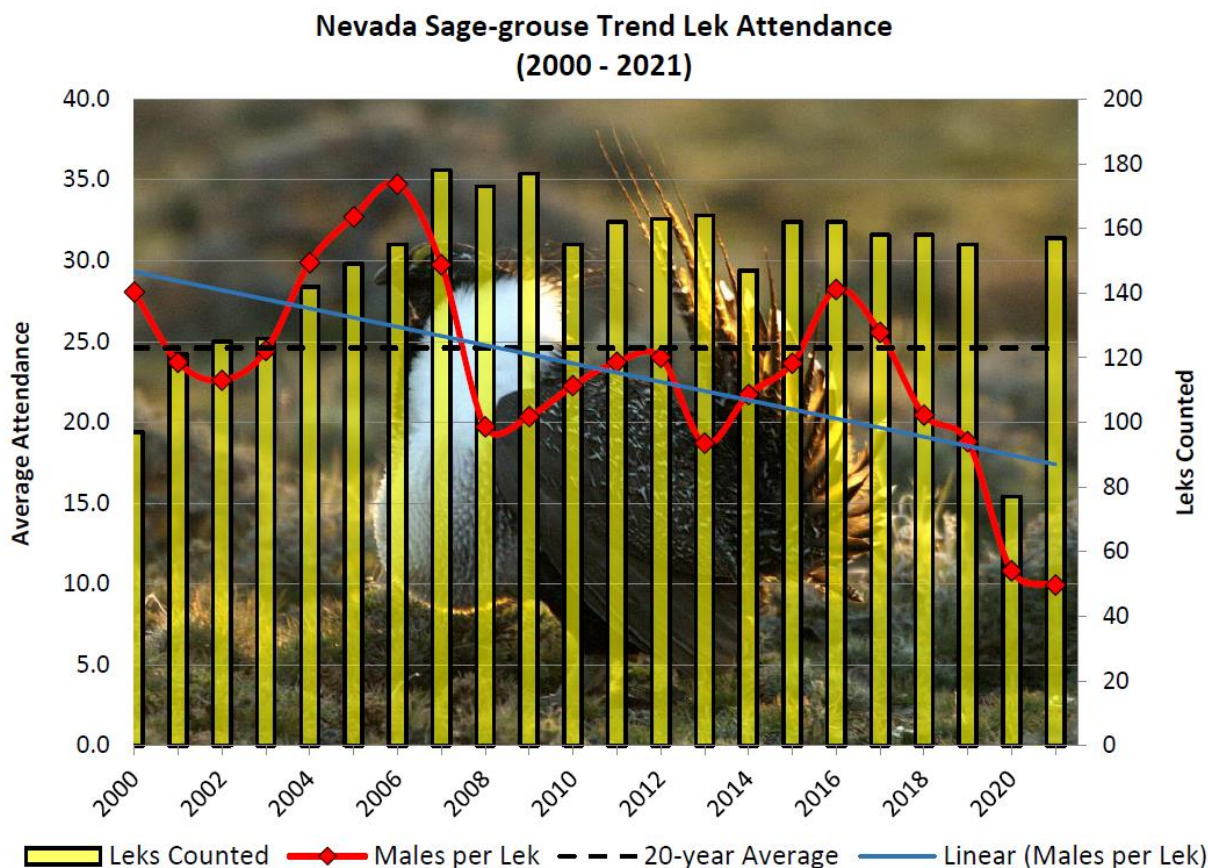


FIGURE 3: Sage-grouse lek attendance (2000–2021).

GREATER SAGE-GROUSE • THREATS

THREATS TO THE SAGEBRUSH ECOSYSTEM AND THE GREATER SAGE-GROUSE

Threats to GRSG are numerous but can be placed into categories that all affect GRSG habitat. Direct habitat loss from wildfire and invasive species and habitat fragmentation are the greatest contributing factors to declining populations.

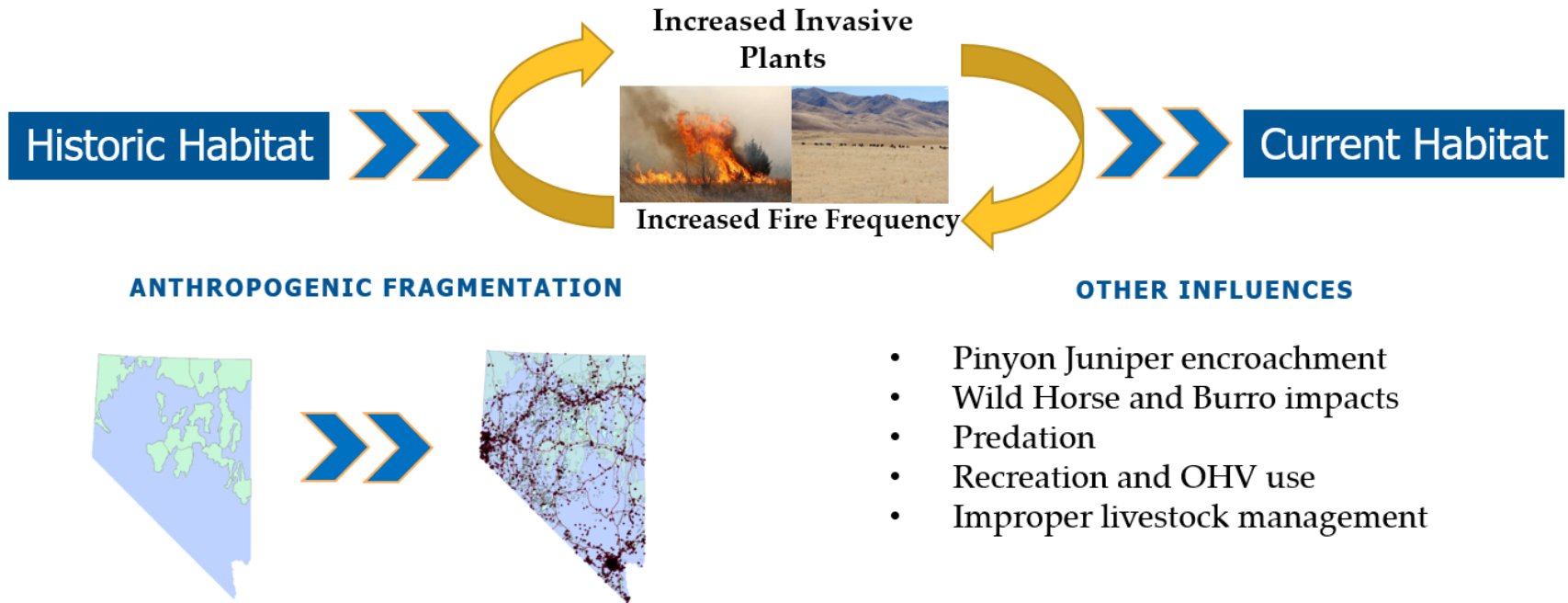


FIGURE 4: Threats to Sagebrush Ecosystems.

As habitat loss from wildfire and cheatgrass continue along with fragmentation, post-fire restoration and pre-suppression actions to reduce wildfire frequency as well as appropriate mitigation of other impacts and preservation of intact landscapes become even more important to conservation of Nevada's sagebrush ecosystems and greater sage-grouse habitats.

NEW RESEARCH GRSG DECLINES & A ROADMAP TO CONSERVATION

Lek Disturbance and Population Impacts

- Pratt and Beck (2019) published an open access report entitled “Greater sage-grouse response to bentonite mining”, available at ([https://doi:10.1002/jwmg.21644](https://doi.org/10.1002/jwmg.21644))
- Their research suggested that breeding females attending leks had a decrease in nest site selection by 50% in otherwise optimal habitat when surface disturbance from bentonite mining increased from 0 to 12%. Results showed mortality risk for females during lekking and breeding seasons was 19 times higher for females exposed to the most active mining within 1.6 km. Conclusions suggest that surface disturbance by bentonite mining could restrict population growth by increasing mortality risk of adult females during the breeding season and causing poorer nest site selection surrounding lek sites.
- Harju et al. 2010 suggested both temporary and sustained surface disturbance be located between 7 to 8.5 km from lekking sites to minimize negative effects on sage-grouse lek attendance. Many past studies investigating surface disturbance have focused on “pulse disturbance” (temporary disturbance) around lekking sites, nesting and brood rearing areas; however, pulse disturbances may be confounded and become additive to nest and brood survival if press disturbance (sustained disturbance) is already present from other surrounding energy developments.
- Kirol et al. (2020) investigated female greater sage-grouse reproductive fitness (i.e., nesting and brood survival) responses to the physical footprint of energy infrastructure from 2008-2014 breeding seasons. Results suggest that females during nesting and brood rearing periods exposed to press disturbance exhibited lower nest and brood survival. Nest success was negatively correlated with the amount of sustained disturbance within 4 km. Broods within a 1 km area exposed to any press disturbance were less likely to survive.
- With surface disturbance developments persisting in or near sage-grouse habitats in Nevada, adaptive management actions and conservation strategies (e.g., protective buffers around leks) could provide significant benefits for sage-grouse during breeding, nesting and brooding season, which in turn could contribute to population stability.



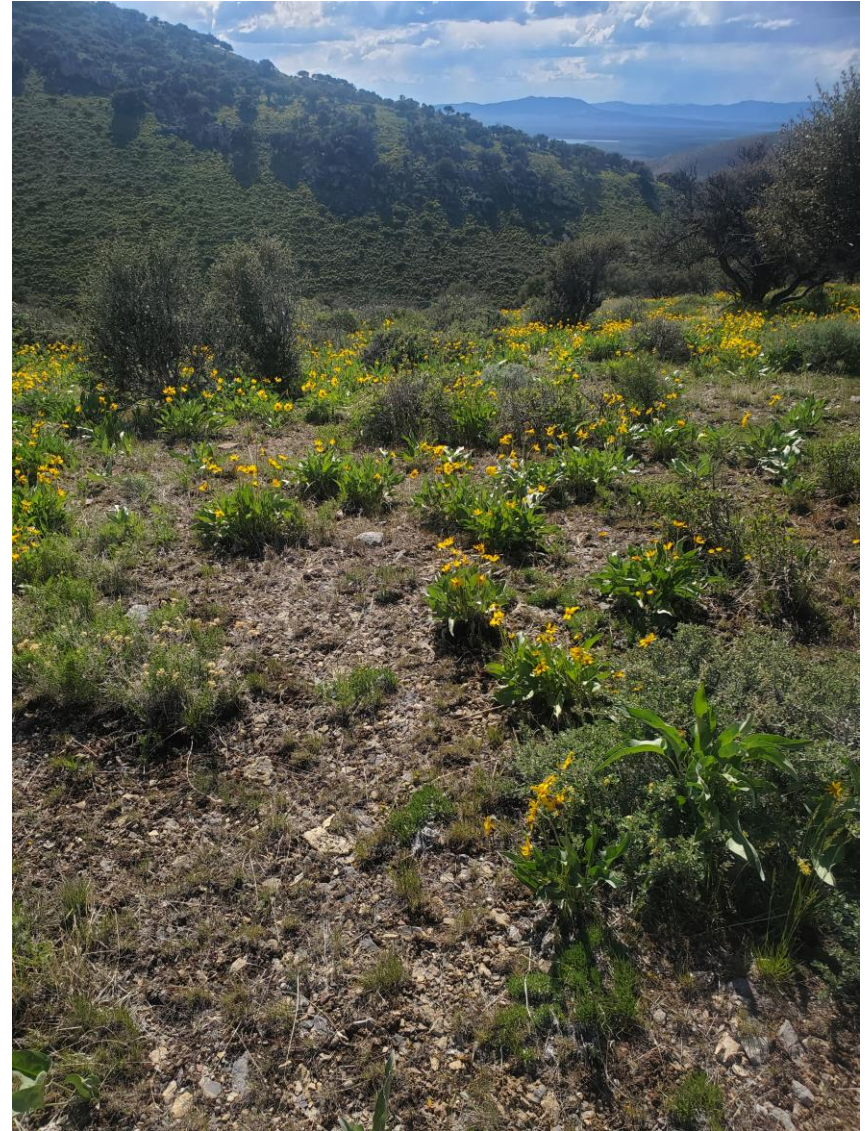
Gerrit Vyn



Bio One

CONTRIBUTIONS OF FEDERAL & STATE PARTNERS

Federal and state partners contribute a great deal toward the accomplishment of our shared goals to improve sagebrush ecosystems across immense landscapes, various management regimes, and diverse habitats. All deserve acknowledgement for their efforts on numerous endeavors in 2022.



A view of the landscape from the flanks of the Rubies (SETT)

NVCCN, ROGER & LOCAL AREA WORKING GROUP (LAWG) UPDATES

The SEP also provides updates for NVCCN, ROGER, and the LAWGs, when submitted, due to their roles and contributions in conservation actions relevant to sagebrush ecosystems and sage-grouse.

Buffalo-Skedaddle Local Area Working Group (LAWG):

Recent projects:

- August-September 2022: constructed 8 BDAs over 4 workdays to help re-wet the SE part of Cottonwood meadow.
- August 2022: new barbed wire fence installed at Rocky Table Spring and Whitehorse Spring.
- September 2022: installed pipe fence at Five Springs, on eastern side of No Name Spring, & water trough and pipeline at Dutchman Spring.
- July 2022: treated 60 acres of phase 1 juniper as part of the Madeline Plains Connectivity project near Spanish Springs lek.
- August 2022: treated 27 acres of phase 1 juniper around Satica Spring and in drainage to improve riparian area.
- September 2022: completed 717 acres of phase 1 juniper treatment near Grasshopper Valley on private land.
- October 2022: treated 360 acres of phase 1 PJ near Shinn Ranch on CDFW parcel b/w 2 active leks & 1066 acres in Grasshopper Valley for small trees.
- November 2022: treated ~700 acres in Humphrey Allotment for small (<5ft) juniper trees.
- July-August 2022: Wild horse and burro gather in the Eagle Lake Field Office - 2,111 horses and 339 burros gathered.
- October 2022: Planted 2,000 bitterbrush seedlings in Beckwourth Fire scar & 2,300 sagebrush seedlings north of Observation Peak in Rush Fire scar.
- October 2022: ~7,000 acres aerial Imazapic spray to control annual grasses in Dry Valley Rim.

Future goals: Conduct applied research using virtual fence technology at grazing allotment scale, landscape scale PJ treatments, riparian restoration.

Resource needs: Funding and capacity to carry out cultural resource surveys required for projects.

The Elko Stewardship Local Area Working Group (LAWG):

Recent projects:

- Met 2nd Tuesday every month. Everyone is welcome. Call Gerry 775-461-6569 or Andi Porreca at 775-762-2636 as location varies. Agenda at [nnsg.org](https://www.nnsg.org).
- CCS Credit Project Monitoring and Annual Reports submitted on all of the ongoing Credit Projects in Elko County.
- Miracles of Miracles – The BLM removed lots of horses from Maverik HMA that were impacting RUBY PMU hence making the “target list”. After those late summer rains, what a vegetative response. Thank You BLM as this was our #1 Priority for Sage Grouse recovery in Ruby PMU and in Elko County.
- UNR published McAdoo sagebrush cut and pile (cache) seeding technique & assisted w/ 20th annual sagebrush seed collection and seedling planting.
- Continuation of installing fight diverters on fence lines and with providing seed for restoration efforts.
- Conducted miles of weed control on right-a-ways & ongoing assessments of imazapic and indaziflam treatments for annual grass control on burn scars.
- Participated in establishing a brush manipulation project in Clover Valley & a GRSG and pygmy rabbit monitoring protocol with Ruby Marshes NWR.
- Provided input on NDOW Wildlife Action Plan, BLM sage-grouse habitat planning & update of Elko County Sage-Grouse Management Plan.

Future Goals:

- Continuing to hold Monthly meetings on second Tuesday of the month & to maintain availability of Nevada Conservation Credit System verifiers.
- Finalizing the Elko County Sage-Grouse Management Plan Update & participating in BLM planning process.
- Continuing the war on noxious weeds, studies on annual grass control & our annual sagebrush seed collection.

Resource needs:

- More direct participation with local planning by SETT and NDOW.

Eureka CD portions of the South Central LAWG:

Recent projects:

- ECD completed 45 new acres of PJ removal in PHMA & maintained 640 previously treated acres. The cost of project, with in-kind, was about \$40,000.
- ECD serves as Eureka County Weed District Board of Directors and directs work under Weed District and continued partnerships with landowners to control noxious weeds. Our in-house weed control technician completed thousands of dollars and hundreds of hours of weed control. Much work is done in coordination with Battle Mountain BLM and Elko BLM through assistance agreements and most weed control activities take place in areas benefiting sage grouse habitat. We also were successful in receiving updated 5-year assistance agreement with Battle Mountain BLM.
- ECD and Eureka County are working closely with BLM on projects to benefit and/or protect sage-grouse habitat through various BLM authorizations including the 3 Bars Landscape and Ecosystem Restoration Project, roadside fuel breaks, and the Diamond Range CX. ECD and Eureka County received \$150,000 through BLM which that will be leveraged with cash and in-kind match to complete new treatments in these footprints.

Future goals:

- Continue to work with BLM and landowners to complete additional treatments in GRSG habitat where authorizations and permissions are granted.
- Complete Conservation Action Plan (building on prior Resource Needs Assessment) to focus projects in right places w/ right partners.
- Assist in facilitating formal SCLAWG meeting in the next year to build partnerships and leverage projects across jurisdictional boundaries.

Resource needs:

- Synergize efforts through CDs rather than have many entities competing on funding & duplicating efforts. Give CDs capacity to lead GRSG efforts.
- Full time LAWG coordinator helping in getting AMRT recommendations developed and implemented.
- USGS must be urged and provided capacity to make Adaptive Management process streamlined, timely, and effective. ECD and South Central LAWG had some frustration in the past with triggers based on prior year's data and planning actions without more contemporary information.

North Central Local Area Working Group (LAWG):

Recent projects:

- Funding secured for rock dams and BDA's but due to barriers including staff change overs, volunteer base decline, lack of regular meetings, COVID, and other issues we were not able to execute this grant and it was returned without expenditures. The Paradise Sonoma Conservation District took on tasks under this project and was to install rock dams in the same region of work to help meet some proposed project goals of restoring stringer meadows in priority habitat in the Martin fire footprint. We will follow up with a second attempt to fund this again.

Future goals:

- We need to find someone to host our NC LAWG meetings, ensure they are held regularly, and again seek funding to continue project started above.

Resource needs:

- Meeting facilitator.
- Gather information through a RNA, develop contact list, get agency updates for projects in region, and seek grants to address shovel ready projects.
- Get information and lek updates for our region and gather/discuss information on current impacts to leks.
- Address the decline in sagebrush habitat, increases in annual grasses, fire risks, and raven and predator issues in region.

Stewardship Alliance of Northeast Elko (SANE):

Recent projects:

- Completed a 5 year update to their Management Plan, engaged in the O'Neil PPA with the BLM, and held meeting in April, June and August.

Future goals:

Keeping the project list current & holding a summer resources tour.

Resource needs:

Not provided, but in the past needs were described as funding, technical support, and other assistance.

A December 2022 update has yet to be provided to the SETT for the following groups:

The Nevada Collaborative Conservation Network (NVCCN), ROGER (Results Oriented Grazing for Ecological Resilience), The Bi-State Local Area Working Group (LAWG), and The Lincoln Local Area Working Group (LAWG).