

# Northeastern Nevada Stewardship Group

## Objectives:

The Northeastern Nevada Stewardship Group Local Area Working Group facilitates the conservation of healthy ecosystems. The LAWG provides all stakeholders with collaborative opportunities to actively manage and restore greater sage-grouse habitat across ownership boundaries in Elko County.

## Goals:

- Develop and implement site-specific plans to accomplish enhancement and restoration projects that are identified by the Sagebrush Ecosystem Program as important areas for sage-grouse conservation.
- Identify potential habitat enhancement and restoration projects.
- Provide local, site-specific expertise on a variety of issues.

## Upcoming Events:

- Meetings the 1<sup>st</sup> Monday of each month.
- Field work.

## Contact:

Gerry Miller  
911 Falcon Lane  
775- 461-6569

## Service Area



# Significant Achievements

Sagebrush Demonstration Plots

Established in 2001

Data collected in 2006, 2011 and 2016  
and the studies are on-going.

Elko County Sagebrush Ecosystem

Conservation Strategy

Finished in 2005,

Approved by the County in 2007

Beneficial because of ecosystem approach

Tuscarora Population Management Unit

Assessment completed in 2009.

North Fork Population Management Unit

Assessment completed in 2011.

Categorize sage grouse habitat based on  
ecological site descriptions using  
landowner questionnaires for future  
projects

Sage Grouse Experience is in its 7th year  
and ongoing.

Recent Ibapah Indian Reservation fire restoration of about 200 acres in PHMA



# 2019 Activities

Continued sagebrush cache studies and to present on the results of work started by Kent McAdao

Conducted wetland restoration/enhancement

Supported Ibapah, Range 2, Sugarloaf Fire restoration

Continued Conservation Credit System assistance

Continued working with 4-H and FFA on projects benefitting GRSG such as seed collection and the Sage-Grouse Experience







Supported efforts on the South Sugarloaf fire by having a sagebrush planting day at Wild Horse Crossing Campground and cooked Indian tacos for lunch



Supported efforts on the Range 2 fire rehabilitation and had over 150 volunteers



Supported public agencies in planting sagebrush and installing miles of flight diverters



LAWG held the  
18<sup>th</sup> annual  
sagebrush seed  
collection and  
seed immediately  
went into the  
Range 2 fire  
reseeding effort



## *Sagebrush Seed Collection Volunteers Needed*

*Seed will be collected for the Range 2 (Lamoille Canyon)  
wildland fire rehabilitation*

**When:** Saturday December 1, 2018  
**Time:** 9:00am-1:00pm  
**Location:** Spring Creek Range/Campground  
**Bring:** Gloves, buckets and dress for the weather

Follow the signs on Lamoille Highway at Pleasant Valley Road.  
Lunch and Free Tee Shirt Provided.  
Those allergic to sagebrush should not plan to collect seeds.

Register at [www.ndow.org](http://www.ndow.org)  
For more information call 775-777-2391  
This project is weather dependent. Please call the day prior for confirmation.





# Sage Grouse Experience

- Held the 7<sup>th</sup> annual Sage Grouse Experience on April 20
- 40 folks got to see 23 strutting males and attend the educational program and brunch served by the Clover Valley 4H
- The Sage Grouse Experience was sponsored by Barrick, Bristlecone Audubon, BLM, NNSG, NDF, NDA, and NDOW





# Future Goals and Resource Needs

## Goals and objectives for Future Actions:

Future goals include:

- Focus on conservation and education
- Rangeland health and uplift
- Clean streams
- Common goals
- Solidarity
- Team work
- GSG Flight diverters
- Curb invasive species encroachment
- Planting vegetation adapted to the soils and precipitation that is also beneficial to GSG

**Small projects  
can make  
a big impact!**

## Resource Needs:

- Native seeds from our region in a quantity that can be used for restoration purposes.





# J. Kent McAdoo

Jan 28, 1949 – Jan 10, 2018

**Bachelor's:** Forestry (Wildlife Management) University of Idaho.

**Master's:** Renewable Resources University of Nevada, Reno 1975

Married the love of his life and hometown sweetheart, Cathy 1972

**Career:** 19 years Natural Resources Specialist - University of Nevada  
Cooperative Extension - Elko, NV Also had been Consultant - JBR  
Environmental Consultants, Inc., Ecologist - Freeport McMoran, &  
Research Associate - UNR

Dedicated to the stewardship of natural resources in Nevada and beyond, Kent's affection for people was evident in the way he always made time to listen to a story or share his own. He was a teacher in every sense of the word, captivating his audience with his vast knowledge via presentations, journal articles, and life lessons. We will miss Kent's wit, his infectious laugh, his love for music, sagebrush, habitat, and collaboration, his friendship, and most of all, time spent in his presence.





# **Shrub Island Establishment Innovation: Sacrificing a Few Sagebrush to Plant Many**

**Kent McAdoo, Univ. Nevada Cooperative Extension  
Kirk Davies, USDA ARS, Burns, OR**





# Rationale

- **Successfully planting sagebrush from seed is challenging, especially on lower precipitation sites (Shaw et al. 2005)**
- **Planting sagebrush seedlings can be successful (Davies et al. 2103; McAdoo et al. 2103a), and although limited in spatial extent, can provide sagebrush islands that will become seed sources and accelerate vegetation recovery (Longland and Bateman 2002)**
- **Wyoming big sagebrush established best in the snowy years (Perryman et al. 2001)**
- **Sagebrush seeds naturally disperse in late fall or early winter, and artificial seeding on snow has been successful in many areas (Jacobs et al. 2011)**
- **Because sagebrush seeds tend to germinate where snow accumulates, soon after snowmelt (Jacobs et al. 2011), we plan to use cut sagebrush plants both as the source of sagebrush seed and as a means of trapping snow for enhanced germination.**
- **Accumulating leaves will provide litter/mulch (Monsen & Stevens 2004)**









- Importance of litter (Monsen & Stevens 2004)
- Importance of snow accumulation (Jacobs et al. 2011)



# Objective

**Our primary objective was to evaluate the fall placement of sagebrush plants (harvested at near seed-ripe) in recently burned areas and grass-dominated plant communities, where the harvested sagebrush will serve both as snow catchments and seed source as the seeds dehisce.**

# Methods

- We established treatments within three newly burned sites in northern Nevada, 30 to 60 km apart and having variable elevation, topography, and soils
- We used a randomized block study design, with five blocks at each site
- Within each block, three 15-m<sup>2</sup> plots were randomly selected for either cut-shrub placement, broadcast seeding, or no treatment
- At each of the cut-shrub plots, we placed Wyoming big sagebrush stems (harvested just before seed-ripe in November 2016)
- Seeded plots were hand-broadcast with seed zone-adapted sagebrush seed to simulate conventional broadcast-seeding practice







# November 2016









**February 2017**





# Preliminary Results





**May 2017**



















































**October 2017**







# Summary of First Year Results

- Sagebrush seedling survival in cut-shrub plots, though quite variable, was significantly higher ( $p < 0.05$ ) at each of the sites than in the broadcast-seeded plots.
- In May, some cut-shrub plots had a “carpet” of sagebrush within 0.5 m of the cut sagebrush, but by October, natural thinning had reduced survivors by approximately 50%.
- Although more natural thinning is anticipated, the October aggregate survival density mean for cut-shrub plots ( $5.7/\text{m}^2$ ) was still two orders of magnitude higher than that for broadcast-seeded plots.
- Precipitation was higher than normal during this first year of study.
- It appears that it will be lower than normal this year.



# **Future Research & Application**

- **We will establish additional plots in at least three new wildfire sites during November 2017.**
- **Preliminary results indicate potential utility of this technique where establishing sagebrush islands could serve as a seed source for successional recovery of critical sites over time.**
- **It may be appropriate to also investigate plant community effects at the harvest sites.**






**Most seeds within  $<1 - 2$  m from parent plant**  
(Goodwin 1956, Welch 2005)



# Literature Cited

- Boyd, C. S., and M. Obradovich. 2014. Is pile seeding Wyoming big sagebrush (*Artemisia tridentata* subsp. *wyomingensis*) an effective alternative to broadcast seeding? *Rangeland Ecology & Management* 67:292–297.
- Crawford, J. A., R. A. Olson, N. E. West, J. C. Mosley, M. A. Schroeder, T. D. Whitson, R. F. Miller, M. A. Gregg, and C. S. Boyd. 2004. Ecology and management of sage-grouse and sage-grouse habitat. *Journal of Range Management* 57:2–19.
- Davies, K. W., C. S. Boyd, J. L. Beck, J. D. Bates, T. J. Svejcar, and M.A . Gregg. 2011. Saving the sagebrush sea: An ecosystem conservation plan for big sagebrush plant communities. *Biological Conservation* 144:2573-2584.
- Davies, K. W., C. S. Boyd, and A. M. Nafus. 2013. Restoring the sagebrush component in crested wheatgrass-dominated communities. *Rangeland Ecology & Management* 66:472–478.
- Jacobs, S., J. D. Scianna, and S. R. Winslow. 2011. Big sagebrush establishment. USDA, Natural Resources Conservation Service Plant Materials Technical Note No. MT-68. 9 p.
- Longland, W. S. and S. L. Bateman. 2002. Viewpoint: the ecological value of shrub islands on disturbed sagebrush rangelands. *Journal of Range Management* 55(6):571-575.
- McAdoo, J. K., C. S. Boyd, and R. L. Sheley. 2013a. Site, competition, and plant stock influence transplant success of Wyoming big sagebrush. *Rangeland Ecology & Management* 66:305–312.
- McAdoo, J. K., W. S. Longland, and R. A. Evans. 1989. Nongame bird community responses to sagebrush invasion of crested wheatgrass seedings. *Journal of Wildlife Management* 53:494-502.
- Perryman, B. L., A. M. Maier, A. L. Hild, and R. A. Olson. 2001. Demographic characteristics of big sagebrush in Wyoming. *Journal of Range Management* 54:166-170.





\* Active vegetation management for restoration of sagebrush-perennial grass communities is necessary and some areas require seeding or planting of desirable vegetation (McAdoo et al. 2013b).

\* Unfortunately, restoration of Wyoming big sagebrush on areas where it is critical, but absent, has also been limited by inadequate restoration techniques and technologies.

\* **Data will be analyzed using mixed-model ANOVA (PROC MIXED, Littell et al. 1996) with repeated years.**





## Squaw Valley, 2018

Four out of five cached plots had seedlings





## Izzenhood fire site, 2018

Three out of four cached sites had seedlings





## **Maggie Creek, 2018**

All five cached plots had seedlings

One site had 340 seedlings





## Oil Well fire, 2018

First year of counting

All four Cached sites had seedlings





## Coal fire

Two of five cached sites had seedlings





## Delano fire

One out of five cached sites had seedlings





**It is apparent from the results of this experiment that sagebrush can be readily and inexpensively established by placement of seed-laden sagebrush branches**





**In 2018, we found no evidence of sagebrush establishment in plots that were hand sown with seed or where there was no treatment, eg the natural sagebrush regeneration**





**We found oodles of ARTR Wy at Maggie Creek Fire Site**







# Echo Fire- Black Sage Brush Site

300+ seedlings  
established





# Range 2 Fire Site – Low Sagebrush Site

Installation of  
Low Sagebrush  
cache





# Range 2 Fire- Low Sagebrush Site

100+ seedlings  
established





**South Fork  
State  
Recreation  
Area- ARTR  
WY  
establishment**





# South Fork- ARTR WY

- 20 scouts and family built 22 caches in three hours for a total of \$100 of materials





# South Fork- ARTR WY

The results...

A carpet of  
newly  
established  
ARTR WY  
seedlings





A landscape photograph capturing a sunset or sunrise. The sun is a bright, glowing orb positioned centrally on the horizon, casting a warm, golden light across the sky. The sky is filled with soft, wispy clouds that catch the low light, creating a gradient of colors from deep orange near the horizon to a darker, muted brown at the top. In the foreground, there is a field of tall, dry grass and several dark, silhouetted shrubs. One prominent shrub with thin, branching leaves is on the left, and another with more dense, rounded foliage is on the right. The overall mood is serene and contemplative.

**Questions or Comments**