

University of Nevada  
Cooperative Extension

## PERSHING COUNTY COOPERATIVE EXTENSION

Annual Report | Fiscal Year 2017 - 2018

### ACCOMPLISHMENT REPORT

#### MISSION

To discover, develop, disseminate, preserve and use knowledge to strengthen the social, economic and environmental well-being of people.

#### PROGRAMS

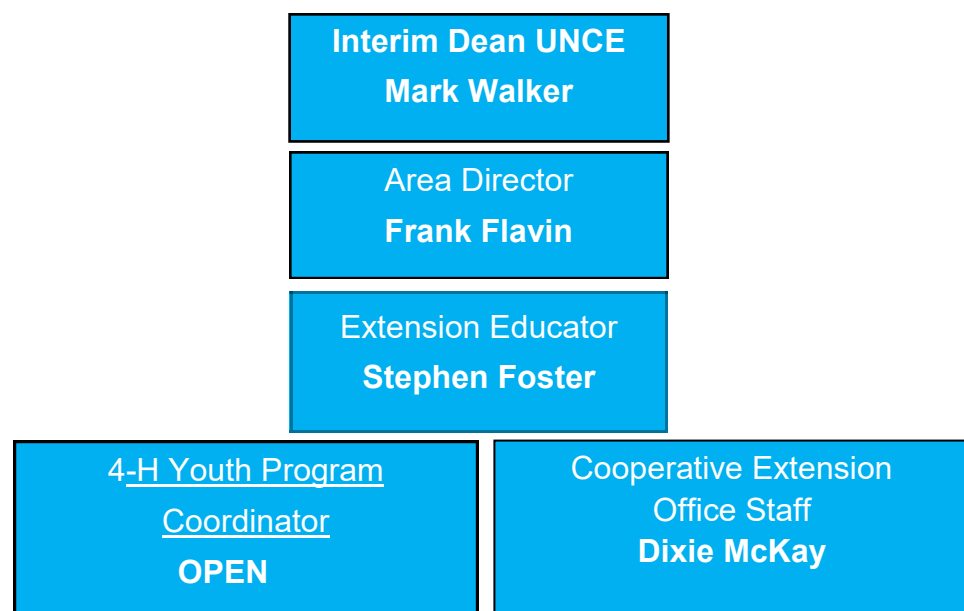
Nevada Cooperative Extension is an outreach college of the University of Nevada that provides information to solve problems and deal with critical issues within local communities. With local needs at the forefront, we develop educational programs in a number of ways - public presentations, workshops, demonstrations, publications and through the media. In recent years, we've begun to use Internet, interactive video and satellite broadcast technologies, bringing knowledge directly to your home and community. With the help of volunteers we deliver educational programs in these areas: Agriculture, Children-Youth and Families, Community Development, Health and Nutrition, Horticulture and Natural Resources.



The University of Nevada, Reno is committed to providing a place of work and learning free of discrimination on the basis of a person's age, disability, whether actual or perceived by others (including service-connected disabilities), gender (including pregnancy related conditions), military status or military obligations, sexual orientation, gender identity or expression, genetic information, national origin, race, or religion. Where discrimination is found to have occurred, the University will act to stop the discrimination, to prevent its recurrence, to remedy its effects, and to discipline those responsible.

**Pershing Cooperative Extension**  
810 6th St | Lovelock, NV 89419  
**Stephen Foster** Extension Educator

## ORGANIZATIONAL CHART



### 2017 Highlights of Pershing County

Stephen Foster serves as the local UNR contact and primary link between UNCE programming and the citizens in Pershing County. The allocated time in his role statement is 70% teaching, 15% research and scholarly activity and 15% service. Stephen's 2017 education and research programs emphasized Agronomic Crop Production (to increase profitability and efficiency for producers), Weed, Insect and Disease Management, Farm Management (Herds and Harvest Program) and Rangeland Management (youth education, alternative grazing methods and drought management).

The commitment behind this educator's extension efforts is to gather the best, relevant, science-based information and disseminate it effectively to those who will benefit.

- Information is gathered by:**

- Networking with professionals including an involvement in agronomic professional organizations
- Development of and collaboration on field research projects to answer questions regarding options to increase crop profitability and productivity
- Continuing development of knowledge and skills in crop production, soil management, plant nutrition, plant pathology, entomology, farm management, and in conducting field research
- Listening to producers

- Information is disseminated by:**

- Planning, teaching, and evaluating educational programs - for the producers and program participants

Program implementation occurred at the county, multi-county, state and regional levels, and involved collaboration with on and off-campus faculty, government agencies, non-government organizations, and area residents.

#### Professional Associations

- National Association of County Agricultural Agents, State President
- Society for Range Management
- American Society of Agronomy, Certified Crop Advisor

#### In-Service Activities

- World Ag Expo, Tulare, CA, February 2017
- Soil Health Workshop, Cottonwood Ranch, Wells, NV, July 2017
- WSARE State Coordinators Annual Summer Meeting, Tucson, AZ, July 2017
- Western Alfalfa and Forage Symposium, November 2017
- Society for Range Management Winter Meeting, Winnemucca, NV, November 2017

#### Administrative Assignments

In addition, Steve manages and directs the Pershing County Extension Office and its programs. Primary responsibilities include preparation, defense and management of an annual budget of \$90,342.00 (11% increase from 2016 budget); serving as the liaison between the University and the County Commissioners; supervision and evaluation of one full-time and one half-time support staff; and administrative oversight of the 4-H youth development program. Office efficiency remains high with the help of Office Administrative Assistant Dixie McKay.

Fiscal Summary	
<b>2017-18 Pershing County Extension Budget</b>	
<b>Income:</b>	
Current Real Property Taxes.....	\$68,119.00
Current Personal Property Taxes.....	<u>\$24,077.00</u>
Total Income.....	\$92,196.00
<b>Expenses:</b>	
Salary Expenses.....	\$56,543.00
Services & Supply Expenses.....	<u>\$33,799.00</u>
Total Expenses.....	\$90,342.00
Net Revenue/Expenses.....	+ \$ 1,854.00

**Stephen S. Foster**  
**Extension Educator, Associate Professor**  
**UNCE, Pershing County**

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**Professional Presentations Non-Peer Reviewed (presenter underlined):**

**Foster, S.**, 2017. *Turf and Ornamental Weed Control*, Nevada Landscape Associations Annual Trade Show and conference, Reno, Nevada.

**Foster, S.**, 2017. *How to Make Your Pesticide Application Work*, Washoe County's Green Industry Training Program. Reno, Nevada.

**Non-Peer Reviewed Publications:**

**Statewide Trade Journal Articles:**

**Foster, S.**, 2017. *Considerations for Selecting Bulls*, Sage Signals, January 2017.

**Foster, S.**, 2017. *Scours can be a Big Problem*, Sage Signals, April 2017.

**Foster, S.**, 2017. *Should I Mix Young Bulls with Old Bulls*, Sage Signals, May 2017.

**Foster, S.**, 2017. *How to Deal with Snake Bite*, Sage Signals, July 2017.

**Foster, S.**, 2017. *Selenium Deficiency in Livestock*, Sage Signal, August 2017.

**Foster, S.**, 2017. *Adding Value to Your Calves*, Sage Signal, September 2017.

**Foster, S.**, 2017. *Cull Cow Market Outlook*, Sage Signal, October 2017.

**Foster, S.**, 2017. *Vaccine Management Tips*, Sage Signal, November 2017.

**Foster, S.**, 2017. *What to Plant this Year*, Nevada Rancher Magazine, April 2017.

**Research, Scholarly or Creative Effort in Progress**

**Foster, S.**, S. Swanson, B. Schultz, J. K. McAdoo, 2015, *Nevada Youth Range Camp, Rangeland Plants: Plant Identification Guide*, UNCE Special Publication (Submitted 2015, 2016 and 2017).

**Foster, S.**, S. *Pershing County Soybean Production Test Plots, 2017*, UNCE Fact Sheet (in progress).

**Foster, S.**, *Nevada Youth Range Camp - Adaptive Rangeland Monitoring Curriculum*, UNCE Special Publication (in progress).

**Service assignments and other professional activities:**

**University/ College Service**

Western Sustainable Research and Education, State Coordinator  
UNCE Range Management Team  
UNCE Agricultural Team

**Regional Service**

WBRC, Western Beef Resource Committee, University of Nevada Representative  
Society for Range Management, NV Section- Web Master  
Humboldt Watershed Cooperative Weed Management Area, Board of Directors  
USDA, Online Crop Weather Survey, Reporter

**County Service**

Pershing County Economic Diversity Association, Board of Directors  
Big Meadows Conservation District, Board of Directors

**Overview**

In 2017, Steve Foster delivered over 20 educational presentations at 11 individual events. These presentations included local programs, regional programs and statewide programs, such as; 2017 Cattlemen's Update, Pesticide Safety Training, Soybean Production Workshop and Field Day, Feedlot Management School and Youth Range Camp. He also, coordinated, promoted and moderated 15 individual webinar seminars for local producers/clientele on the following topics; Applied Soybean Research, Drought-Tolerant Corn Hybrid and Relative Maturity Yield Response to Plant Population and Planting Date, Neonicotinoid Seed Treatment Webinar Series, Weed Resistance: Enemy of the Plains, State-wide Pesticide Applicator Training and "Grow Your Own" horticulture Programs.

Scholarly projects and products he integrated into his education programs included: *Pregnancy Testing*, CL412, Cattle Producer's Library, and Western Beef Resource Committee (submitted). **Also, Special Publication Nevada Youth Range Camp Plant Identification Guide and was submitted in 2015, 2016 and 2017 (no review comments received).** His presentation, *Efficiency Relative to Cow Size*, was published in the 2017 Nevada Cattlemen's Update proceedings. **Research projects include;** Soybean Production Test Plots conducted in Pershing County, Biological Control of Russian knapweed Study, conducted in Pershing County in collaboration with the Nevada Department of Agriculture, Outcome Based Grazing Project, in collaboration with CABNR, BLM and local rancher. Co-author on one peer reviewed trade journal article, **Viewpoint: An alternative management paradigm for plant communities affected by invasive annual grass in the Intermountain West, Rangelands Magazine.** In addition, fifty-one educational news articles were published in the local weekly newspaper, which were distributed throughout Pershing, Humboldt and Lander counties (circulation ~8,500). One articles were published in a statewide trade journal, Nevada Rancher Magazine (circulation ~2,000) and eight articles were published in the Sage Signal, Nevada Cattlemen's Magazine.

In support of his Extension programs, Steve was the principle investigator on a WSARE Professional Development Program Grant, \$22,950, and he was co-investigator for the *Beginning Farmer and Rancher USDA Grant* (2014-2017), \$692,433, and (WSARE) Grazing Strategies for Range Quality Assurance, \$70,104. He also, received \$500 sponsorship from Westway Feed Products for the Feedlot Management School, and over \$17,500 of in-kind contributions (seed, fertilizer, herbicide, equipment, land, etc...) from local farmers for the Soybean Production Test Plots.

For service, Steve assumed the duties as State Coordinator for the Western Sustainable Research and Education organization (10% FTE). He reviewed five UNCE publications and served on local, state and regional committees. He contribute to the weekly USDA Crop/Weather Survey and he is the web site manager for the Nevada Society for Range Management. Steve is the county appointee on the Big Meadows Conservation Board, Board member on the Pershing County Economical Diversity Association and the Pershing County representative on the Humboldt Watershed Cooperative Weed Management Area Board. He is also, a member of three professional organizations, and maintain one professional certification (*Certified Crop Advisor*).

In addition, Steve manages and directs the Pershing County Extension Office and its programs. Primary responsibilities include preparation, defense and management of an annual budget of \$90,342.00 (11% increase from 2016 budget); serving as the liaison between the University and the County Commissioners; supervision and evaluation of one full-time and one half-time support staff; and administrative oversight of the 4-H youth development program directed by Community Based Instructor, Rebekah Dohl. Office efficiency remains high with the help of Office Administrative Assistant Dixie McKay.

**Teaching (Summary of teaching, supervision and advisement duties)**

**Overview:**

Programming integrated content, expertise and teaching methodology to develop a comprehensive approach to effective educational programming through a variety of methods including; e-mail groups, web sites, Facebook groups, fact sheets, mailed information, workshops, newspapers, on-site visits, telephone, one-on-one, and group discussions.



## AGRICULTURE



Steve Foster's Program Needs Assessment for Pershing County (Foster, 2010) identified two important agricultural issues; 1) How to improve the profitability and efficiency of their agricultural operations; 2) How to manage weeds safely and economically.

**Situation:** The Pershing County Cooperative Extension Program Needs: Results of the 2009 Assessment, Special Publication 10-00, indicated that Pershing County agricultural producers needed to know how to improve the profitability and efficiency of their agricultural operations (mean score of 4.57 out of 5.0 Likert scale). Therefore, programs are developed and evaluated on their effectiveness on improving farmer/rancher profitability and efficiency.

### Cattlemen's Update 2017

**Situation:** Cattlemen's Update is a decades-old annual educational program offered by the University of Nevada Cooperative Extension and the University of Nevada Reno for beef cattle producers. Subject matter selection is based on a needs assessment of Nevada beef cattle producers and on concerns and trends expressed by the leaders of the beef cattle industry in the United States.)

### Inputs/Outputs:

Steve's involvement in the 2017 Cattlemen's Update consisted of developing and presenting a PowerPoint presentation, "Efficiency Relative to Cow Size," at five locations across the state. This presentation provided ranchers with researched based information, which illustrated that 1,000-pound cow, weaned more pounds of beef than any other category of cows up to 1,400 pounds. This is because smaller framed cows can be grazed at higher stocking rates, thus producing being more total pounds of beef per acre.

### Impacts/Outcomes:

Participants were asked, "As a result of the Cattlemen's Update program, I understand Efficiency Relative to Cow Size." Eighty-two percent of the participants replied that they agreed or strongly agreed with this statement. Participants were also asked; "do you plan to make changes or take actions in your work based on this update"? Out of the 36 comments submitted, 30 percent (11) replied that they would consider reducing cow size in their herds.

In October 2017, Dixie also planned and executed a Halloween Party where over 200 4-H Members, youth from the community, and adults attended. About 20 adult volunteers helped to make this event a success. The Halloween event was greatly appreciated by the 4-H families and the community that attended.



### Research, Creative Activity, Papers, Publications, Grant Activity:

#### Peer Reviewed Publications

**Foster, S.S.**, N. Stenquist, R.G. Sasser, 2017. *Pregnancy Testing, CL4412*, Cattle Producer's Library, Western Beef Resource Committee. (Submitted)

Perryman, B.L., B. Schultz, K. McAdoo, J.C. Cervantes, **S. Foster**, G. McCuin, and S. Swanson, 2017. *Viewpoint: An alternative management paradigm for plant communities affected by invasive annual grass in the Intermountain West*, Society for Rangeland Management, Rangeland Magazine, a manuscript number has been assigned: RALA-D-17-00028.

#### Peer Reviewed Extension Publications

**Foster, S.**, S. Swanson, B. Schultz, J. McAdoo, *Nevada Youth Range Camp Rangeland Plants: Plant Identification Guide*, UNCE Special Publication, (Submitted in 2015, 2016. No reviews received)

### Grants Received or Submitted: (Total \$785,487)

Emm, S., C. Bishop, H. Gatzke, S. Urbanowitz, L. Singletary, G. Cramer, P. Verburg, J. Davison, T. Harris, S. Lewis, F. Flavin, and **S. Foster**, 2015-2017. *Nevada beginning farmer and rancher renewal project*. USDA, National Institute of Food and Agriculture. \$692,433.

**Foster, S.S.**, 2016-2017. *Western Sustainable Agriculture Research Education, Professional Development Program Grant*. \$22,950.

Swanson, S., (30%) G. McCuin, S. Lewis, J. C. Cervantes, **S. Foster**, K. McAdoo, B. Perryman, B. Schultz, J. Griggs, J. Rogers, A. Smith, J. & R. Braate, S. Lossing, M. & R. Heguy, P. Novak, K. Dyer, and R. Jenkins. 2017-2020. *Grazing Strategies for Range Quality Assurance*. Western Sustainable Agriculture Research and Education (WSARE). \$70,104. (Top rated proposal - rated 10/10)

### Non-Grant Funds Received in Support of Programming: (Total \$18,000)

\$17,500 of in-kind contributions (seed, fertilizer, herbicide, equipment, land, etc...) from local farmers for the *Soybean Production Test Plots*.

\$500 sponsorship from Westway Feed Products for the Feedlot Management School,

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The 2017 4-H Year was celebrated with an Award and Recognition program; over 100 adults and youth participated in the evening with dinner sponsored by Pershing County 4-H Leader's Council. More than 60 youth were recognized for their participation in the 4-H Program. While over 40 4-H members and Clover buds were recognized with year pins, and buttons. Seventeen Adult Club Leaders were also recognized for the volunteer work.

Enrollment for the 2017-2018 year has 47 4-H Members and Cloverbuds enrolled in the Livestock group and Community Clubs. The Active Community Club projects the youth could be enrolled in were Sewing, Scrapbooking, Martial Arts, Candy Making, Baseball, and Sign Language. We also had 12 Adult Volunteers enrolled.



**Publications developed:** Steve authored 16 articles related to livestock production that were published in regional and statewide media. The presentation, "*Efficiency Relative to Cow Size,*" presentation and additional breeding management factsheets were published in the "2017 Cattlemen's Update" proceedings.

#### Feedlot Management School

**Situation:** In 2015, Pershing County reported 27,000 head of cattle, which ranks it sixth in Nevada. It is also home to one of the state's largest feedlots (Western Nevada Cattle Feeders 15,000 head capacity). In collaboration with Ohio State Extension, a comprehensive educational program was developed to provide information and assistance in feedlot management. An informal curriculum was developed, presented and evaluated for this program. The objective of this program was to educate producers on the recommended best management practice for finishing cattle and managing feedlots in Northern Nevada.

**Inputs/Outputs:** Steve organized, and moderated the two-day program. The program consisted of a video series produced by Ohio State Extension and Dr. Francis Fluharty, OSU research professor in animal sciences. It consisted of the following topics; Industry Update, Ruminant Digestive Physiology and Rumen Function, Protein Digestion and Metabolism, Protein Sources, Overview of Western Nevada Cattle Feeders, Receiving and Growing Strategies for Calves versus Yearlings, Methodologies to Enhance Marbling and Feed Efficiency. Steve developed and presented a session on, *Utilizing Ultrasound to Sort Cattle for Selling on the Grid.*

**Outcomes/Impacts:** Although the number of participants was relatively small (8), they represented over 5500 head of cattle on feed. Participants answering the following question; "Did you gain any knowledge or learn anything new from this training" illustrated a significant gain in knowledge of all topics presented. The average of all topics presented was equal to 4.875 (1= no new knowledge - 5= significant knowledge). In addition, 87.5% of the participants indicated that this program was excellent and helped improve the profitability or efficiency on your operation/business.

**Publications developed for this program:** Steve authored nine non-peer reviewed publication related to beef production that were published in regional and statewide media.



#### Agricultural Webinars

**Situation:** Due to the lack of resources and specialist available to County Educators, Steve has searched for other opportunities to provide educational programs for local clientele. These include webinar seminars available through the American Society of Agronomy, University of Nevada Cooperative Extension programs and other Land Grant Universities.

**Input/Outputs:** In 2017, the Pershing County Cooperative Extension office offered the following webinars and interactive video programs: Applied Soybean Research, Drought-Tolerant Corn Hybrid and Relative Maturity Yield Response to Plant Population and Planting Date, Neonicotinoid Seed Treatment Webinar Series, Weed Resistance: Enemy of the Plains, State-wide Pesticide Applicator Training and "Grow Your Own" horticulture Programs.

**Impacts/Outcomes:** Participants of these educational programs repeatedly remarked that they appreciated receiving current and relevant information without having to travel long distances. One attendee commented, "*Drought-Tolerant Corn Hybrid and Relative Maturity Yield Response to Plant Population and Planting Date*" Seminar provided a much need information for his farming operation.

## Managing Weeds Safely and Economically

### Pesticide Applicator Training

**Situation:** Pershing County farmers/ranchers identified a significant need for more knowledge about how to safely and economically manage pests. Therefore, I developed a comprehensive pest management program that addressed local and statewide audiences.

#### Inputs/Outputs:

This year, Steve organized, hosted and presented numerous pest management programs. In collaboration with other UNCE educators and out of state Extension specialist, He organize, developed and moderated a four-hour pesticide CEU training session, for Pershing County pesticide applicators. Topics presented were; *What is New in Alfalfa Weed Control*, *Priority Weeds in Northern Nevada: Control and Management*, *Diagnosing and Solving Problems in Alfalfa*. I developed and presented a presentation on, "Overview of Nevada's Pollinator Protection Plan." Participants were presented with fact sheets and other informational handouts.

In addition, he was invited to speak at the Nevada Landscape Associations Annual Trade Show and conference, Reno, Nevada on *Turf and Ornamental Weed Control*, and Washoe County's Green Industry Training Program on *How to Make Your Pesticide Application Work*.

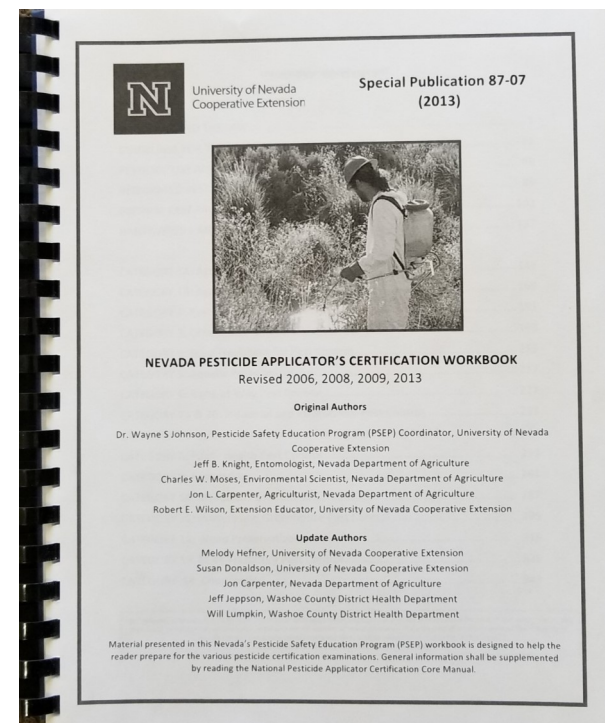
#### Outcomes/Impacts:

Programming for 2017, offered a total of 12.0 hours of state approved continuing educational credits for producers with pesticide applicators licenses. If Steve's programs had not been available to local residents, they would have had to travel long distances, at significant personal expense, to obtain the necessary continuing education units CEUs to maintain their "Certified Applicator" status. Undoubtedly, there would have been a decline in certified applicators, which is an undesired outcome given the complexity of safely applying pesticides in agricultural settings.

Participants who completed evaluations of the 2017 Pershing County pest management program were asked the following:

- Did you gain any knowledge or learn anything new from this training? (1=No Knowledge Gain, 5=Significant Knowledge Gain). Mean = 4.28 over 4 topic areas, (n=10).
- Do you think this program helped improve the profitability or efficiency on your operation? 90.0% indicated yes. (n=10).
- When asked how much profit per acre could be realized from attending this program, their responses ranged from \$1.00 - \$10.00 per acre (participants represented a total of 10,110 acres). These responses equated to a possible increase in profitability of \$10,110 to \$50,550 total for all participants (2017).

**Publications developed:** Steve authored seven educational news articles related to pest management issues that were published in local and regional media.



During the Annual Pershing County Junior Livestock Show & Sale 29 Youth participated between 4-H and FFA. In addition, 16 Clover buds participated in Showmanship.



At the 2017 4-H **Central/NE Area Camp**, we had a total of 13 4-H Campers, and 2 teen councilors. 4-H Central/NE Area Camp provided a week of educational and social growth for many youth.



## Education through Traditional Media

**Situation:** The community situational analysis and published findings (Foster, 2010) revealed that the residents of Pershing County, when asked, "On a scale of 1 = low priority to 5 = high priority, to indicate their preference for receiving educational information, county residents stated a preference (mean = 3.62) for receiving information through traditional media outlets (newspaper, television, radio). I responded to their stated desire by disseminating the majority of the educational materials I develop via traditional media, particularly local and regional newspapers.

**Inputs/Outputs:** During the past 8 years, Steve has used news articles in traditional media to educate government officials, community leaders and Nevada residents about UNR's mission as a Land Grant University, the role of UNCE in achieving that mission and his role as an Extension Educator. This included publication in local weekly newspapers, which have been distributed throughout Pershing, Humboldt and Lander counties (circulation ~8,500). In addition, one article has been published in the statewide trade journal publication, The Nevada Rancher (circulation ~2,000) and 4 eight articles were published in the Nevada Cattlemen's state-wide magazine, *Sage Signals*, which is distributed to all of the Nevada Cattlemen's membership.

**Outcomes/Impacts:** This year Steve has published 51 articles in local weekly newspapers, which have been distributed throughout Pershing, Humboldt and Lander counties (circulation ~8,500). In addition, one article has been published in the statewide trade journal publication, The Nevada Rancher (circulation ~2,000) and 8 articles were published in the Nevada Cattlemen's state-wide magazine, *Sage Signals*, which is distributed to all of the Nevada Cattlemen's membership.

## 4-H & YOUTH DEVELOPMENT

### Family & Youth Development Programs

In 2017 Dixie McKay was helping to keep the 4-H Programs organized and productive among her other jobs at the Extension Office due to the Youth Development Community Based instructor position being vacant most of the year. She worked with Steve Foster to help keep the programs running smooth.

In 2017, there was a total of 66 children enrolled in 12 different club activities. The Livestock Groups consisted of 4-H members raising beef, swine, goats, and sheep. Some of the active community clubs during the 2017 4-H year were Martial Arts, Drama, Food, Baseball, Softball, Clover buds, Crafts, and Candy Making.



## Nevada Department of Agriculture's

### Noxious Weed Biological Control Program

**Situation:** Noxious weed encroachment is a serious threat to the economic well-being and ecological balance of Nevada lands. The use of biological control agents is becoming more and more common throughout the United States. This method of control for noxious weeds is not a fix all solution, but can be used to augment some integrated weed management plans.

**Inputs/Outputs:** In collaboration with the NDA to discover innovative biological control measures, *Larinus minutus*, known as the lesser knapweed flower weevil were released in Pershing County at three different locations. Steve liaised with local landowners, assisted the NDA team in selecting appropriate site for release on the bio-control agent, and assisted with monitoring of the sites.

### Outcomes/Impacts:

This is a multi-year project that will continue to be monitoring for weed density and morbidity.

### Outcome Based Grazing Project in Pershing County, Nevada

**Situation:** Recent trends in increasing frequency and size of very large wildfires continue to plague the Great Basin. The spread of cheatgrass (*Bromus tectorum*) and other annual invasive species throughout the Great Basin has exacerbated the problem. The result to vegetative communities has been a sagebrush system that is vulnerable to the spread/increase in invasive annual grasses and a subsequent increase in fire frequency. Preventing large scale fires is vital to maintaining intact sagebrush habitat and continuity throughout the Winnemucca District Office (WDO). Therefore, the need for this project is to test and demonstrate grazing techniques to protect and enhance critical habitats, mining operations and transportation corridors from elevated wildfire risk attributed to hazardous fine fuels accumulation at a landscape level.

**Inputs/Outputs:** This project is still in the proposal stage. Several planning meetings have been held to develop the proposal. This project is in collaboration with the BLM, the allotment permittees, private consultant, University of Nevada -Reno, and University of Nevada-Reno Extension.

Data collection would accompany the grazing treatment. To assist in reaching a consensus on the annual stocking rate, pre-grazing forage production inventories will be conducted on the Prince Royal Allotment in September each year. Assessment, Inventory and Monitoring (AIM) will be conducted every 3 years at the existing AIM locations within the allotment. Also, height-weight utilization will be conducted annually as specified in Technical Reference No. TR 1734-3 (BLM 1996).

**Outcomes/Impacts:** The overarching goal of this proposal is to maintain a viable livestock operation while moving towards ecological potential for the allotment. Primary, secondary and tertiary objectives will be set.



## Farm Management

### Beginning Farmers/Ranchers Development Program (Herds & Harvest)

**Situation:** There is renewed interest in beginning farmer and rancher programs at multiple levels of government for the following reasons: 1) The increasing average age of U.S. farmers; 2) The 8% projected decrease in the number of farmers and ranchers between 2008 and 2018; 3) The growing recognition that new programs are needed to address the specific needs of the next generation of beginning farmers and ranchers, many of whom come from non-agricultural backgrounds.

### Soybean Production in Nevada

**Situation:** Alfalfa hay, alfalfa seed and small grains are the principle crops produced in Pershing County. Alfalfa hay remains by far the most important crop in terms of both acres harvested and value of production. Small grains are grown as a rotational crop between the establishments of alfalfa crops. As a means to increase the profitability of local farmers, and provide an alternative crop option to the local producers, an educational program on growing soybeans as a high-income rotational crop was developed.

**Inputs/Outputs:** A comprehensive educational program was developed to provide information and assistance in growing soybeans in the local area. An informal curriculum was developed, presented and evaluated for this program. The objective of this program was to educate producers on the recommended best management practice for growing soybeans in Northern Nevada.

Steve developed and presented an all-day program on the following topics; Introduction to Soybean Production, Soils/fertility for Soybean Production, Soybean Physiology and Growth Stages, Variety/Maturity Group Selection, Soybean Production Best Management Practices, Soybean Enterprise Budgets and Economics, Soybean Diseases/Insect Control, Soybean Weed Management and Relay Intercropping Systems with Wheat.

He designed and managed a soybean test plot with collaboration with a local producer. The plots consisted of three different soybean varieties, with three different maturity ratings, replicated 4 times. A field day was held prior to harvest to illustrate to regional producers the results of the test plots.

**Outcomes/Impacts:** Farmers who attended the Soybean production program were asked; "Did you gain any knowledge from this soybean production training? (1= no new knowledge - 5= significant knowledge). The average of all topics presented was equal to 4.79 (n=18). One-hundred percent of the participants indicated that they would consider growing soybeans on their farming operations from the information provided during this training.

When asked how much profit could be realized per acre from attending this program (participants represented a total of 10,800 acres) their responses ranged from \$1.00 - \$10.00 per acre. These responses corresponded to a possible increase in profitability of \$54,000 to \$92,000, realized by all participants (n=18).

At the Soybean Field Day, participants represented over 20,000 acres farmed. One participant commented: "I plan on planting 50 acres of soybeans after seeing the results of the UNCE test plots." Steve has also, been contacted by a farmer near Unionville that requested assistance in planting 15-20 acres of organic soybeans next year.

The objectives of the soybean test plot was to determine if soybeans would grow in the Pershing County area; which maturity would grow best in the area; and if soybeans could be grown profitably. Results of the soybean test plots showed that soybeans could be grown successfully, and that an earlier maturing soybean performed better than the later maturing varieties. However, due to mechanical malfunctions and inadequate weed control, producing a profitable crop was not achieved this year. Steve plan to conduct another soybean research plot again next year.

**Publications developed for this program:** A research summary report is in progress.



## Natural Resources Programs

### Nevada Youth Range Camp

#### Situation:

The bulk of Nevada's youth live in large urban environments, with little exposure to rangelands, forests, or agricultural environments, and the products and services rangelands provide the American public. Limited exposure to these environments suggests that Nevada's youth are increasingly less predisposed to seek education, vocations, or project experiences in the natural resources, particularly on the large isolated rangelands typical of the western United States. Furthermore, there is a shrinking percentage of the population with knowledge about rangeland resource issues; yet national law, regulation and policy seek public input toward the management of rangeland resources. The Nevada Youth Range Camp provides high school students with a foundation in the physical and biological sciences that inform us about natural resources and what guides their management.

**Inputs/Outputs:** Stephen has been an instructor at the weeklong Range Camp since 2009, and he provides leadership and education for student attendees. This year he developed and piloted a *Plant Identification Guide and Curriculum* for the students. Each year Stephen teaches the *Stream Investigation Class*, which educates students about the role of riparian vegetation toward maintaining stream bank stability and proper riparian function, which facilitates high water quality and healthy aquatic habitat.

**Outcomes/Impacts:** Knowledge gains are documented annually when the students complete an open-ended written evaluation. Results of the Nevada Youth Range Camp evaluation indicated that students gained the most knowledge in the Stream Investigation/Proper Function and Condition of Riparian Areas class with a 34.7% increase between the pre-test and post-test results. An increase in knowledge was documented in all of the educational areas taught.

**Publications developed:** Stephen was first author on UNCE Special Publication, *Nevada Youth Range Camp Plant Identification Guide*, was submitted in 2015 (still under review).

