



EXTENSION
College of Agriculture,
Biotechnology & Natural Resources

EXTENSION | HUMBOLDT COUNTY

Annual Report | Fiscal Year 2023 (July 2022 - June 2023)

University of Nevada, Reno Extension is engaged in Nevada communities, presenting research-based knowledge to address critical community needs in the areas of agriculture; children, youth and families; community and economic development; horticulture; health and nutrition; and natural resources. It is a county-state-federal partnership providing practical education to people, businesses and communities. It is a unit of the University's College of Agriculture, Biotechnology & Natural Resources, and plays a vital role in fulfilling the University's land-grant mission.

Extension, Humboldt County Office

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PROGRAM IMPACTS

RANGELAND RESOURCES

- Rangeland education program had 1,173 student contacts during 24 workshop presentations and field tours.
- Continued participation in the following collaborations: a) Jordan Meadows; b) the Santa Rosa Range Management program; and c) the North-central Nevada Sage-grouse local work group. The primary role of the Extension Educator, Brad Schultz, is to ensure that participants have the appropriate peer reviewed research available to help inform discussions and decisions.
- Continued the Santa Rosa Mountains "repeat photography study". Presented results to date at several workshops.
- Provided extensive comment on the BLM's proposed rule to make "Conservation" and land use equivalent with all other land uses.
- Conducted a state-wide forage-loss assessment used to implement the USDA Farm Services Agency's Insurance Program.
- Provided extensive comment on the Humboldt-Toiyabe National Forest's scoping document to permit aerial herbicide treatment of noxious weeds on Forest lands.
- Used funding from the USFS International Program to teach grazing management during their two-week international seminar and the Uzbekistan, Central Asian Rangeland Conference.



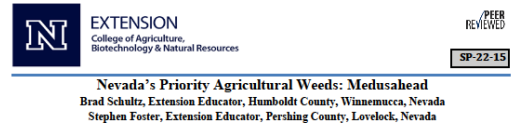
McConnell Creek, June 9, 1972 with flooding following heavy rain on an area burned in 1971, and on September 28, 2022, fifty years later.

PROGRAM IMPACTS (CONTINUED)

NOXIOUS AND INVASIVE WEEDS

Noxious and invasive weeds are widespread throughout Nevada and threaten the productivity of cropland, pasture and rangeland. The Humboldt County Extension Educator continues to interact with the Paradise Valley Weed Control District, the Humboldt Watershed Cooperative Weed Management Area, Nevada Department of Agriculture, the Nevada Conservation Districts and other entities to provide research based information for weed issues they encounter.

- There were 391 student contacts via nine workshop presentations and other meetings.
- The Humboldt County Commission continued to supplement the Extension budget (\$25,000) for weed control and management efforts. These resources helped implement weed control efforts on several thousand acres in fiscal year 2023.
- Brad Schultz participated in weed management workshops across Nevada, in virtual and live formats. The focus of presentations this year was Herbicides: How they Work; and roots, carbohydrates and herbicide control. This education informs students about the importance of properly timing herbicide treatments for each species, and the need for a long-term follow-up control program.
- Published a manuscript about Medusahead, as part of the ongoing series, *Priority Agricultural Weeds in Nevada*. Initiated the next installment, titled, Foxtail Barley.



INTRODUCTION

Medusahead (*Taeniatherum caput-medusae* L., Figure 1) is a non-native cool-season annual grass (blue highlighted terms are defined in a glossary at the end of this paper). This weed originates from the Mediterranean region of Europe and North Africa, eastward into Central Asia. Medusahead entered the United States in the 1880s, and was initially found in 1887 near Roseburg, Oregon. Weed scientists speculate that the first seeds arrived as either a seed contaminant in cereal grains or attached to the fur of imported livestock. As many as seven distinct introductions have occurred, each likely coming from a different region of the species' native distribution. The result is substantial genetic variation across the U.S.

This weed is a late arrival to the Great Basin and Intermountain West, not appearing in Nevada until the early 1960s. Expansion across the West has continued at about 12% per year, and in the 17 Western States, medusahead infests over 2.7 million acres. The largest infestations occur in California, Oregon, Washington, Idaho and Nevada.

Medusahead has established populations in or near sagebrush plant communities in the northern one-third of Nevada, northeastern California, southeastern Oregon and much of the Snake River region of southern and western Idaho. The foothill rangelands of California and south-central Oregon (I-5 Corridor) also have very large infestations.

In Nevada, large expanding populations (defined here as more than 1,000 acres) are known to occur in Washoe, Pershing, Humboldt and Elko counties. Medusahead is primarily a weed of rangelands, pastures and seeps, or low-lying areas that receive sufficient run-on soil moisture to have at least 10 to 12 inches of effective moisture. Infestations occur in areas with as much as 24 inches of precipitation.

Populations have been found at elevations from near sea level to about 6,000 feet. New infestations readily establish on disturbed ground, often in microsites (swales, depressions, etc.) that maintain slightly higher soil moisture content.



Figure 1. Seedheads of medusahead as they mature from still green to just before dissemination. Photo from University of California Agriculture and Natural Resources: http://ucanr.edu/blog/UCD/weedscience/biofiles/29-213_natural.jpg

A partnership of Nevada counties; University of Nevada, Reno; and U.S. Department of Agriculture. This work was supported by the USDA National Institute of Food and Agriculture, Hatch Project 1012851.

4-H

- The Humboldt County 4-H Program included day camps, special interest programming and traditional 4-H clubs. There were 27 volunteer leaders and 220 traditional club members. 4-H youth exhibited 188 projects at the 2023 Tri-County Fair, 4-H Small Animal Show and Tri-County Junior Livestock Show.
- With Lithium America, delivered, "A Day in the Life of a Geologist," to 102 youth from rural schools.
- Delivered 4-H programming to the Winnemucca Homeschool Co-Op.
- Held the 2022 4-H County Awards Night program in November 2022 after a two year hiatus.
- Delivered the 4-H National Science Day experiment, *Explorers of the Deep*, to the rural school youth .
- Partnered with the Humboldt County Library to deliver the 4-H Bee Bot, *Honey Bee Challenge* to youth.
- Partnered with the Boys and Girls Club to deliver 4-H programming for summer 2023.
- Held STEM Day Camps for youth grades 4–6 and 7-8. Topics included principals of photography, forensic crime scene investigation and a livestock mini-camp.
- Held the 2023 Humboldt County 4-H Horse Show.
- Partnered with the Humboldt County Cattle Women to host the yearly Presentation Day for the livestock and small animal youth.
- Conducted "Marketing Your Livestock Project" workshops for 4-H livestock youth.
- Collaborated with the Humboldt County Farm Bureau to implement *Ag in the Classroom* for 3rd graders and the *French Ford Ag Field Day* for 5th and 6th grade youth. Youth attendance was 698.
- Hosted the first annual *Sonoma Classic Junior Livestock Jackpot* in April 2023: 64 youth participants.
- Presented carcass data for all Humboldt County 4-H market animals and discussed acceptable and desired carcass characteristics including which carcass attributes receive a premium price, the value of each animal on the market grid, explanations for why each animal received its respective grade, and suggestions about how to improve carcass quality.

4-H AND YOUTH IN ACTION



From upper left, clockwise. Day in the life of a geologist; Cloverbuds with chickens; Junior goat showmanship; poster displays at the county fair; forensic crime scene investigation day camp; 3-D printer demonstration at Ag Field Day.

SUPPORT FOR OTHER EXTENSION AND COMMUNITY PROGRAMS

- During Cattlemen's update, educated attendees for how to conduct photo monitoring.
- Taught a module about plant growth and livestock grazing for the Beginning Farmer Rancher Program.
- Participated in Nevada Cattlemen's Workshops across the state, presenting results of the Repeat Photography study in the Santa Rosa Mountains.
- Addressed various horticultural issues that affect County residents, and disseminates research based materials to help resolve those issues and educate the public.
- The Extension Office hosted the *Grow Your Own Program* which originates from the Washoe County Extension Office.
- Extension faculty with statewide youth development roles have developed the *Just in Time Parenting* program which the Humboldt County Extension Office assists in implementing via dissemination of research based publications and materials.
- The Humboldt County Extension Office distributes home radon testing kits and disseminates literature about the dangers of radon gas, a primary cause of lung cancer among non-smokers.
- The Extension Educator resided on the Board of the Humboldt Development Authority (Vice-Chair).
- Assisted with health and nutrition programming by providing meeting space for TOPS (Taking Off Pounds Sensibly) to hold weight control education meetings.
- Provides weekly input to the U.S. Department of Agriculture | National Agricultural Statistics Service Crop Progress Report.

PROGRAM IMPACTS (CONTINUED)

SCHOLARSHIP AND RESEARCH RELATED TO EXTENSION PROGRAMMING IN HUMBOLDT COUNTY

- Schultz, B.** and Foster, S. *Nevada's Priority Agricultural Weeds: Medusahead*. UNCE Special Publication. 22-15. 18 p.
- Schultz, B.** 2022. *2022 Forage Loss Assessment for Nevada*. Technical Report to the USDA Farm Services Agency. 44 p. Submitted on December 12, 2022.
- Schultz, B.** and McAdoo, K. (deceased). 2022. *UNR Cooperative Extension: Placing Wyoming Sagebrush to Catch Snow and Provide Seed for Creating Sagebrush Islands*. Progressive Rancher. September-October Issue. Pages 34-39.
- Schultz, B.** and Miller, G. 2021. *Placing Fall-harvested Wyoming Big Sagebrush Plants to Catch Snow and Provide Seed for Creating Sagebrush Islands*. International Meeting, Society for Range Management, February 11-17, 2022. Boise, Idaho. Contributed Poster.
- Schultz, B.** 2021. *Repeat Photography in the Santa Rosa Mountains, North-Central Nevada*. International Meeting, Society for Range Management, February 11-17, 2022. Boise, Idaho. Contributed Poster.
- Meiman, P., Perryman, B., and **Schultz, B.** 2021. *Livestock Grazing Management Considerations When Targeting Cheatgrass*. International Meeting, Society for Range Management, February 11-17, 2022. Boise, Idaho. Invited.
- Fernández-Guisuraga, J.M., Calvo, L., Fernandes, P.M., Hulet, A., Perryman, B., **Schultz, B.**, Jensen, K.S., Enterkine, J., Boyd, C.S., Davies, K.W., Johnson, D.D., Wollstein, K., Price, W.J., and Arispe, S.A. 2023. *Estimating litter biomass of annual grasses associated with short fire free intervals in the northern Great Basin*. Science of the Total Environment. Available online December 2022.

REVENUE AND EXPENSES FOR FISCAL YEAR 2023 (JULY 2022-JUNE 2023)

County Funds Summary

Ending Fund Balance (7/1/22)	\$ ^a
Approved County Budget	\$
Revenue (mil levy)	\$
Expenses	\$
Ending Balance (6/30/23)	\$

Other Funds Expended in County

State	\$
Federal Funds	\$
County	\$
Grant Funds	\$
Gifts	\$
Other	\$
Total	\$

^a An additional County contribution includes the in-kind value of approximately \$450,000 annually or buildings, facilities, and administrative support. The value shown includes approximately \$124,000 from the property tax assessment and the remainder from the Cooperative Extension Ending Fund Balance.

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