STATE OF NEVADA

Annual Report for Calendar Year 2022 to the W-6 Technical Committee

Compiled by Melinda Yerka

Summary: Table 1 summarizes NV use of the NPGS's Pullman, WA gene bank in 2022 only, as no orders were placed in 2019. Three individuals from Nevada placed four orders and received 57 accessions in 2022. Researchers affiliated with the Nevada System of Higher Education (NSHE, includes the University of Nevada System and the Desert Research Institute, DRI) continue to be the primary institutional users (38 accessions, 66.7%). All users were contacted via email and 1 out of 3 responded. Users reported no manuscripts published.

Table 1. Summary statistics for 2021 for the most common historical uses in NV.

	Entomology	Genetics	Chemistry	Variety Devo	Education Teaching	Taxonomy	Anthro-pology
# accessions used for each purpose	19	0	0	0	0	11	27
% accessions used for each purpose	33.3%	0%	0%	0%	0%	19.3%	47.4%

NPGS USER REQUESTS AND RESPONSES IN NEVADA:

UNIVERSITY OF NEVADA SYSTEM AFFILIATES (Total of 4)

1. **Katelyn McDonough**, UNR Dept. of Anthropology. Research use notes: Historical, Cultural and Anthropological Research. These seeds will become part of a comparative botanical collection for use in paleoethnobotanical and archaeological research, education, and mentorship. I am very grateful to the U.S. National Plant Germplasm System and everyone involved in it. I have and will continue to acknowledge the U.S. National Plant Germplasm in all resulting publications. Thank you.

Answers to Survey Questions:

1. What was the quality of the plant materials you received?

The plant materials I received were very high quality and exactly what I needed. They arrived quickly, well packaged, and with the exact counts I was anticipating.

2. Did you release or commercialize any plant material(s) to the public in 2022 that was partially or fully derived from any NPGS plants that you received in 2022 or any time previously? If yes, please provide as much information as possible about the released plant material(s).

No.

3. If you published an article in 2022 that includes information from NPGS plants that you received in 2022 or earlier, please provide the publication citation (authors, title, journal, etc.).

McDonough, Katelyn N., Jaime L. Kennedy, Richard L. Rosencrance, Justin A. Holcomb, Dennis L. Jenkins, and Kathryn Puseman (2022). Expanding Paleoindian Diet Breadth: Paleoethnobotany of Connley Cave 5, Oregon, USA. American Antiquity 87(2): 303–332.

4. Do you have any suggestions or feedback for the improvement of the NPGS system?

I have always had great experiences with the NPGS system. This very important system had been critical for my research. I am grateful to have access and to everyone who keeps it running.

Name	**Order Request**
Deschampsia cespitosa	339535
Lappula occidentalis	339535
Festuca octoflora	339535
Plantago patagonica	339535
Solidago canadensis	339535
Sporobolus airoides	339535
Dracocephalum parviflorum	339535
Puccinellia distans	339535
Sporobolus cryptandrus	339535
Stanleya pinnata	339535
Cyperus eragrostis	339535
Cyperus eragrostis	339535
Schoenoplectus pungens var. longispicatus	339535
Erigeron linearis	339535
Crepis modocensis	339535
Agoseris aurantiaca	339535
Trisetum spicatum	339535
Nicotiana attenuata	339535
Hesperostipa comata subsp. comata	339535
Hesperostipa comata	339535
Schoenoplectus lacustris	339535
Ceanothus greggii var. vestitus	339535
Taraxacum alaskanum	339535
Cymopterus longipes	339535
Antennaria corymbosa	339535
Cymopterus corrugatus	339535
Deschampsia cespitosa	339535
Lappula occidentalis	339535

2. Cathy Silliman, M.S. Student, UNR (two orders). ***Research use notes 1:*** Botanical/Taxonomic Investigations. For my master's project, I will be looking at different traits of

Krascheninnikovia lanata (KRLA). I am interested in how populations differ across a latitudinal and longitudinal gradient throughout the Great Basin and Mojave Deserts. I was able to collect seeds from northern and central areas from this range, but was unable to get seeds from more southern populations. With these GRIN KRLA seeds, I will be able to compare northern and southern populations in a germination experiment. The goal of this germination experiment and future greenhouse and field experiments is to find populations with broad environmental tolerances. Populations that succeed better and the potential trends of where these populations are located, will be important for land managers to know in order to have successful restoration throughout the Great Basin. ***Research use notes 2:*** Botanical/ Taxonomic Investigations. The Great Basin and Mojave deserts make up a large area of contiguous, undeveloped land in North America and represent important repositories of native plants. The connectivity across this climatically-variable region provides an opportunity to understand how native species with wide distributions vary across their ranges. The Great Basin desert is experiencing high-intensity wildfires, weed invasion, and climate change, which create a landscape unfavorable for natural regeneration of native plants. Plant species are able to respond to changes in the environment through evolutionary changes and/or phenotypic plasticity, however, if climate change is faster than the species are able to adapt, maintaining the genetic variation plants need to persist in a changing world might require the help of humans. Selecting the right seed sources is essential for successful restoration. Empirical and provisional seed zones have been created for Great Basin species, and help identify seed sources that will do well when moved within similar zones. However, one likely effect of climate change will be increased aridity, such that even locally-adapted seeds may not be able to establish as conditions change. It is important to take this possibility into consideration when choosing seed sources. Assisted migration, or moving species outside their historic range, is not a new concept, but moving populations of the same species to match future climates is perhaps less controversial but not as well studied, especially in the Great Basin floristic province. For my research project, I plan to test assisted population migration by moving populations of *Krascheninnikovia lanata* from their drier, southern range to their wetter, northern range. The goal of this project is to test whether populations that have evolved in drier, warmer locations will be able to persist and thrive in northern locations where it is projected to become warmer and drier. I previously received seeds from these lots to perform a common garden study. I would like to request these additional seeds to test their germination rates in a laboratory setting.

Name	**Accession**	**Order Request**
ORDER 1		
Krascheninnikovia lanata	W6 40483	341676
Krascheninnikovia lanata	W6 57741	341676
Krascheninnikovia lanata	W6 59821	341676
Krascheninnikovia lanata	W6 55153	341676
Krascheninnikovia lanata	W6 58349	341676
Krascheninnikovia lanata	W6 59828	341676
ORDER 2		
Krascheninnikovia lanata	W6 40483	345246
Krascheninnikovia lanata	W6 57741	345246
Krascheninnikovia lanata	W6 59821	345246

Krascheninnikovia lanata	W6 55153	345246
Krascheninnikovia lanata	W6 58349	345246

NON-UNIVERSITY OF NEVADA AFFILIATES (Total of 1)

3. **Brian Rector, USDA-ARS-EIWRU.** Research use notes: Entomological Investigations. Host-specificity testing of candidate biocontrol agents of medusahead (*Taeniatherum caput-medusae*) and cheatgrass (*Anisantha tectorum*):

Name	**Order Request**
Bromus tectorum	342214
Bromus tectorum	342214
Bromus tectorum	342214
Bromus tectorum	342214
Bromus tectorum	342214
Bromus tectorum	342214
Taeniatherum caput-medusae	342214
Bromus sterilis	342214
Bromus tectorum	342214
Taeniatherum caput-medusae subsp. crinitum	342214
Taeniatherum caput-medusae subsp. asperum	342214
Taeniatherum caput-medusae subsp. asperum	342214
Taeniatherum caput-medusae	342214
Taeniatherum caput-medusae subsp. crinitum	342214
Taeniatherum caput-medusae subsp. crinitum	342214
Taeniatherum caput-medusae subsp. crinitum	342214
Taeniatherum caput-medusae subsp. crinitum	342214
Taeniatherum caput-medusae subsp. caput-medusae	342214
Taeniatherum caput-medusae subsp. caput-medusae	342214

2022 PUBLICATIONS:

McDonough, Katelyn N., Jaime L. Kennedy, Richard L. Rosencrance, Justin A. Holcomb, Dennis L. Jenkins, and Kathryn Puseman (2022). Expanding Paleoindian Diet Breadth: Paleoethnobotany of Connley Cave 5, Oregon, USA. American Antiquity 87(2): 303–332.