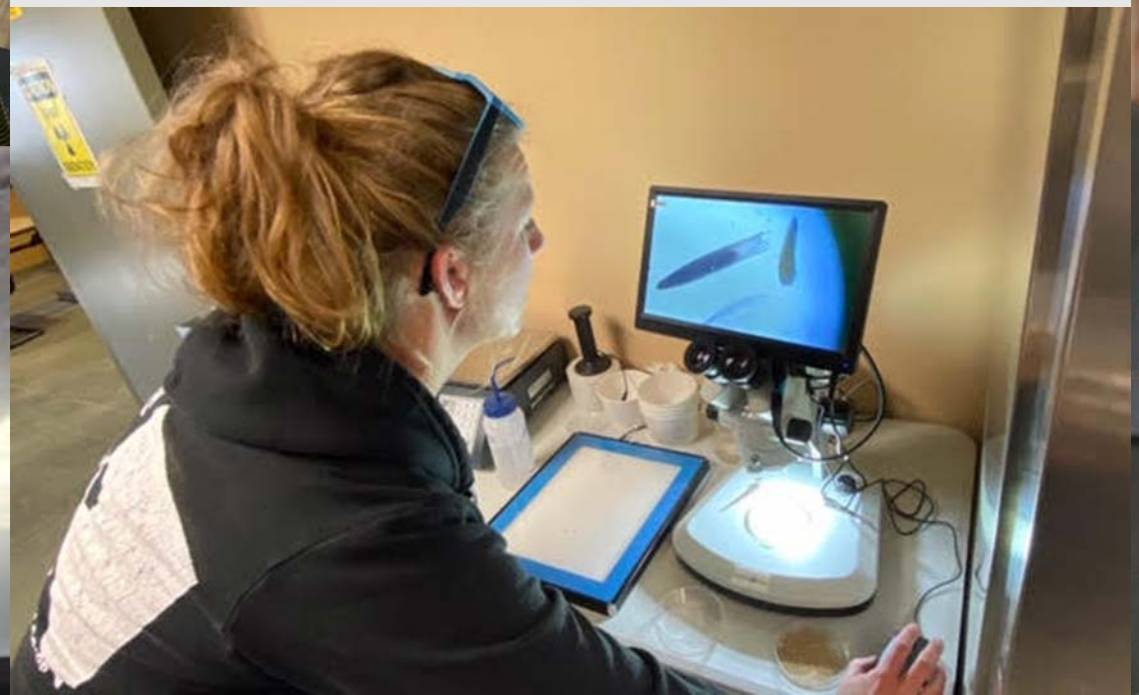
UNR Seed Cleaning & Storage Facility

Shannon Swim
Elizabeth Leger



Native Seed Processing Center

- History
- What is seed cleaning?
- Equipment
- Testing
- Storing
- Lessons learned




History

- Started as collaboration with WBC

  - Collect Native Seed
    - What species?
    - Where are they?
    - How much?
    - Permit
    - Seed certification

  - Process Native Seed
  - Use Native Seed

Walker Basin Conservancy

NDA
Nevada Department of Agriculture

Seed Collection

- Collected 17 species

Shrubs:

Artemisia tridentata var. tridentata
Atriplex canescens
Atriplex confertifolia
Atriplex torreyi
Ericameria nauseosa
Grayia spinosa
Hymenoclea salsola
Krascheninnikovia lanata
Picrothamnus desertorum
Sarcobatus vermiculatus
Shepherdia argentea

Grasses:

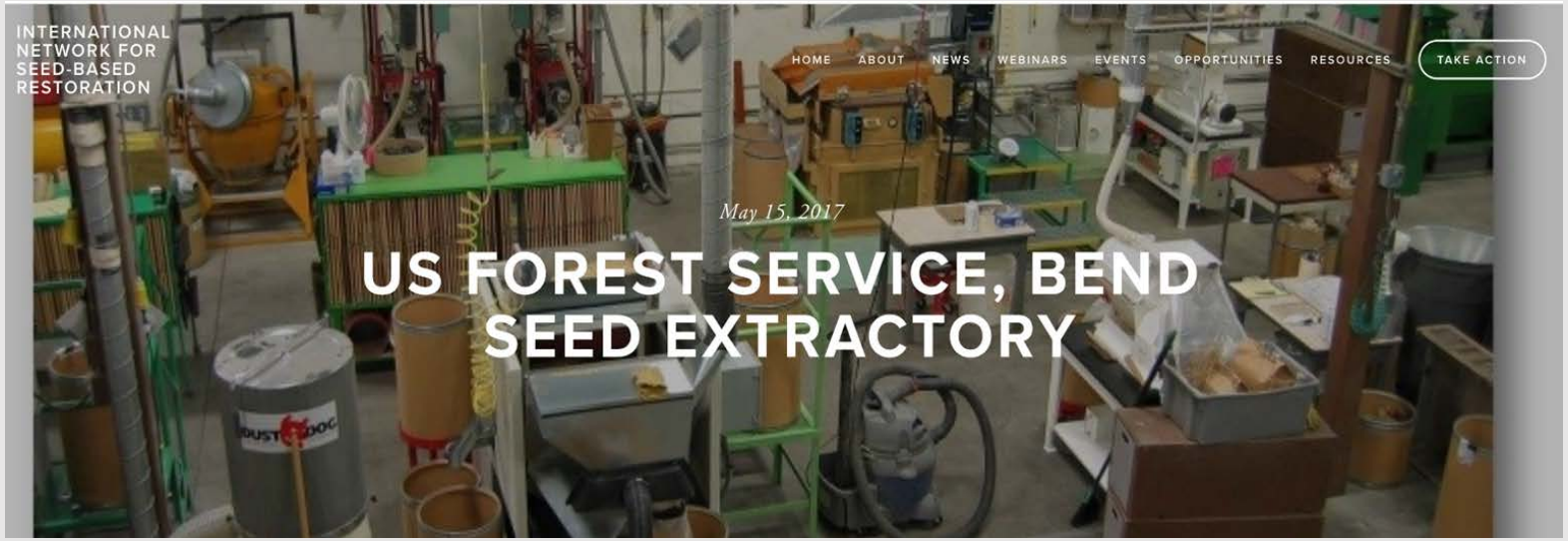
Achnatherum hymenoides
Distichlis spicata
Pleuraphis jamesii

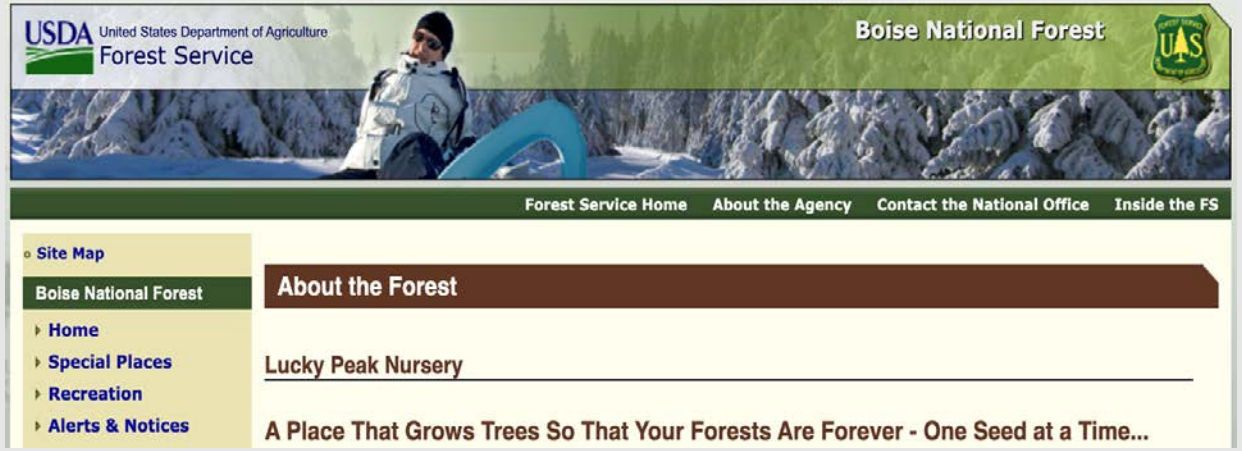
Forbs:

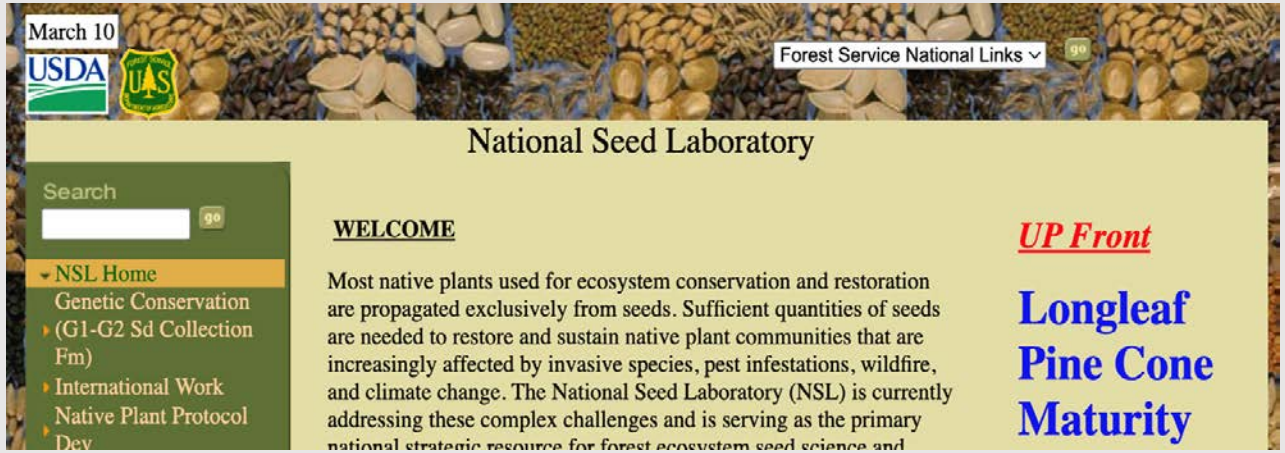
Artemisia cana
Helianthus annus

Dry It!

Now What??







EXTRA SPECIAL THANKS TO THESE FOLKS!!

Steps to Processing Seed

- **Seed conditioning**
  - breaking up plant material
- **Seed cleaning**
  - separating all the plant material from the seed

Seed Conditioning

- We have:
  - Westrup Brush Machine (6 different mantles)

Seed Conditioning

Wintersteiger Thresher

Missoula De-winger

Seed Conditioning

- Sieves!

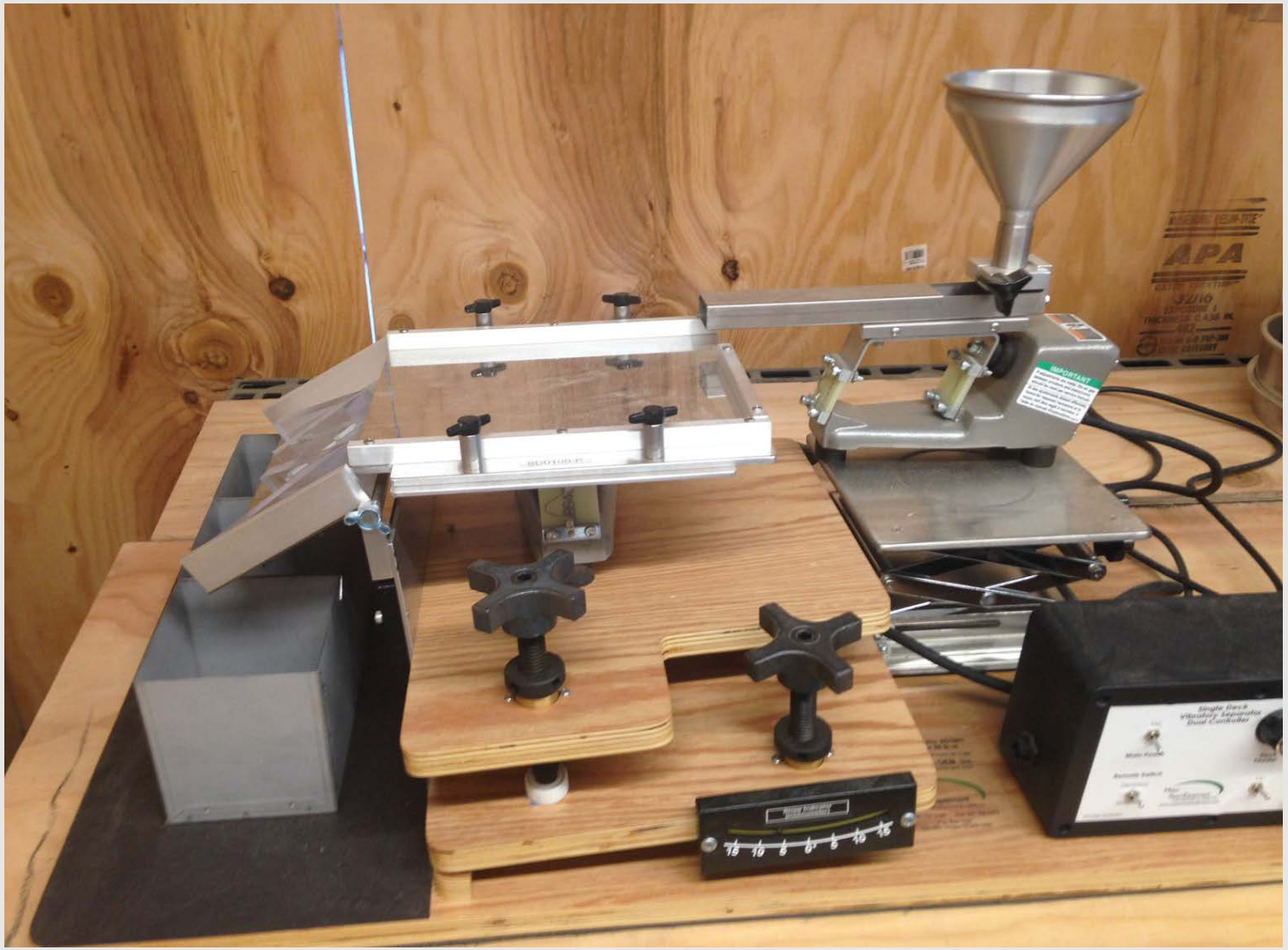
Time to Clean!

- We have 3 pieces of cleaning equipment
  - Office Clipper
  - Vibratory Separator
  - Continuous Seed Blower

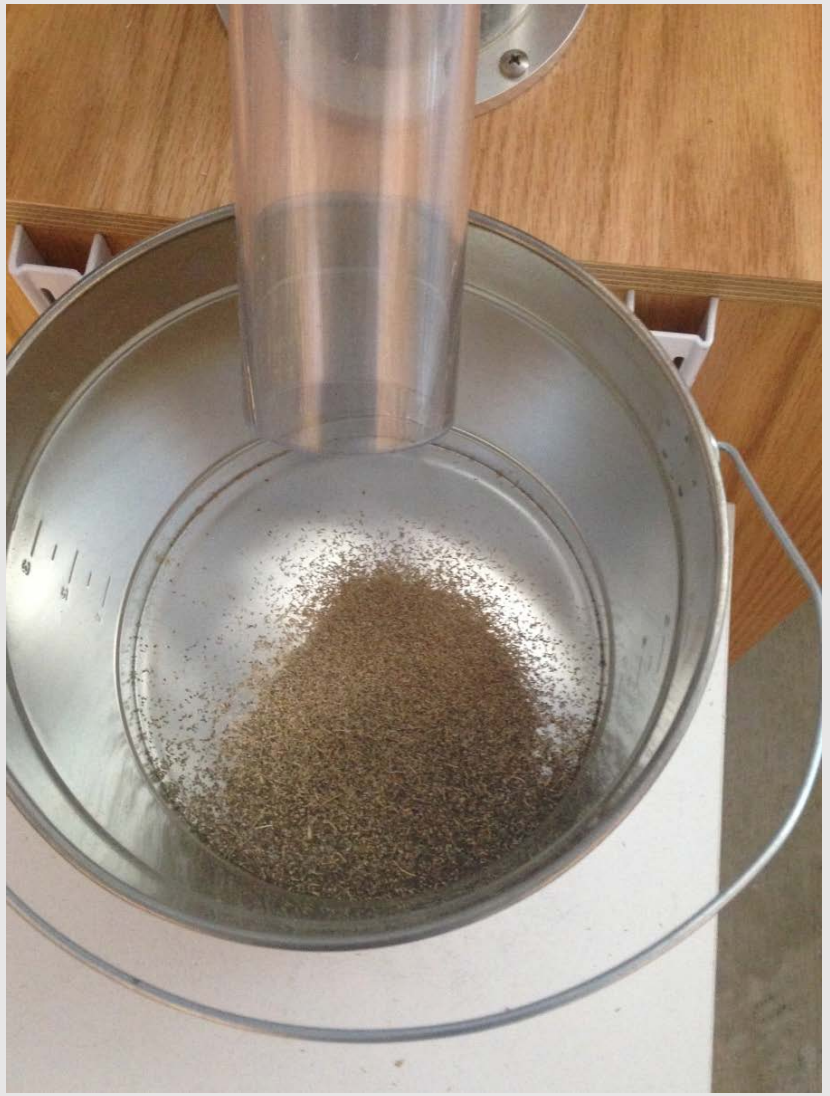
Seed Cleaning: Office Clipper

We have over 100 different screen sizes!

Seed Cleaning: Vibratory Separator



Seed Cleaning: Continuous Seed Blower



Seed Cleaning: Sieves again!

Busting Common Misconceptions of Seed Cleaning

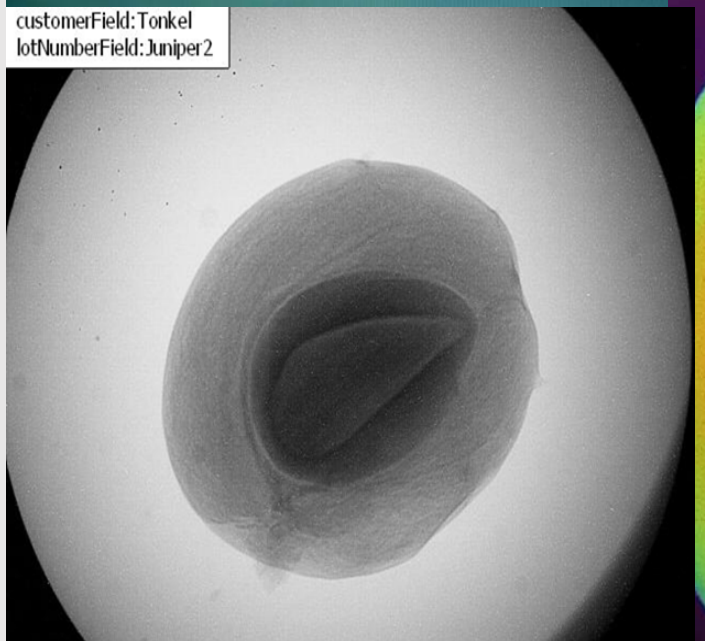
- Undesired seed is **NOT** easy to remove
- Similar shape and size **VERY** difficult
- Costly $$$
- Loss of desired seed
- Risk of spreading noxious or invasive species

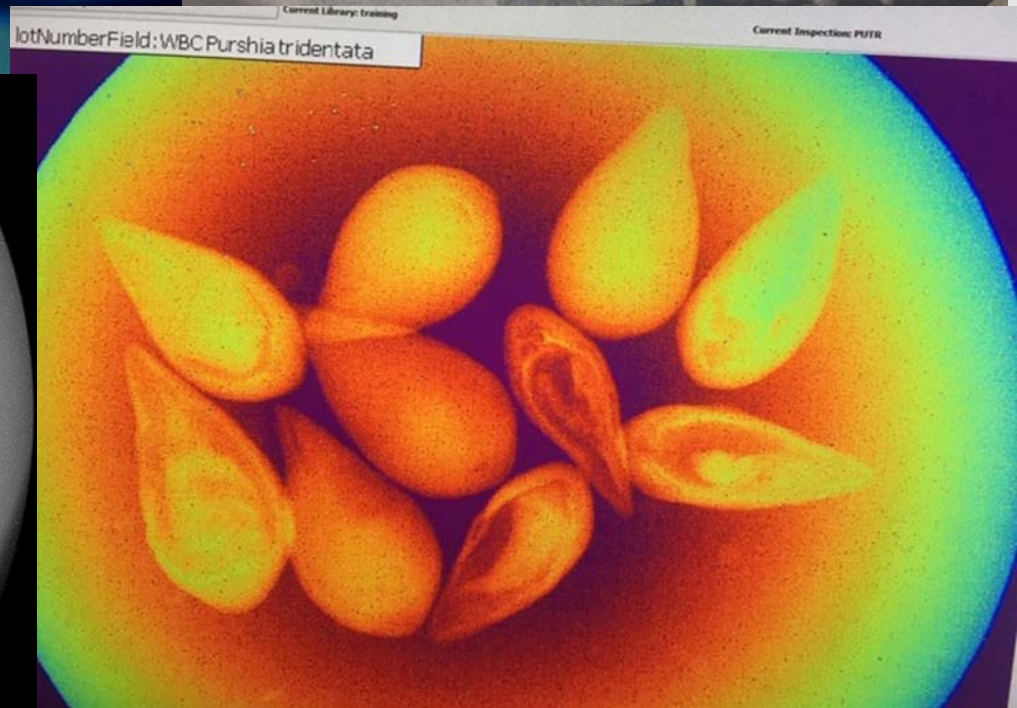
Busting Common Misconceptions of Seed Cleaning

- It is **NOT** easy to remove extraneous (chaff) material
- Costly $$$
- Loss of desired seed

Seed Testing

- Cut tests
- Purity test
- Germination test
- X-ray machine





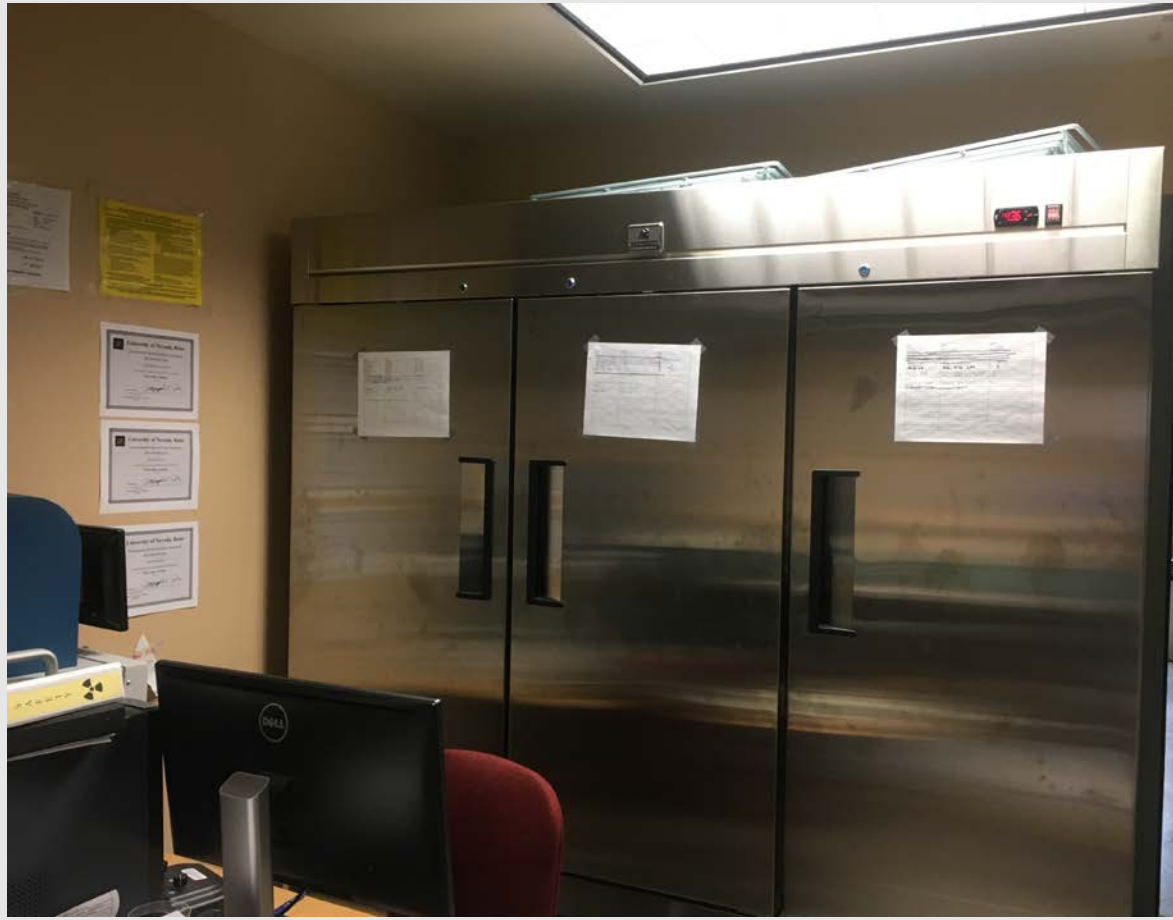
Storage

- Short-term < 18 months

- Long-term > 18 months

Short-term Storage

- Historically, store MOST seed between 33*F and 41*F (Hong and Ellis, 1996)
- 2 Commercial reach-in refrigerators
  - Temps variable, but range is typically 34-45*F



Long-term Storage

Long-term requires an extra step!

- RH of seed needs to be 15% or lower
- Temps around 0*F

- Moisture analyzer

New Guidance

RESTORATION ECOLOGY
The Journal of the Society for Ecological Restoration
SER SOCIETY FOR ECOLOGICAL RESTORATION

PRACTICAL ARTICLE

International principles and standa in ecological restoration

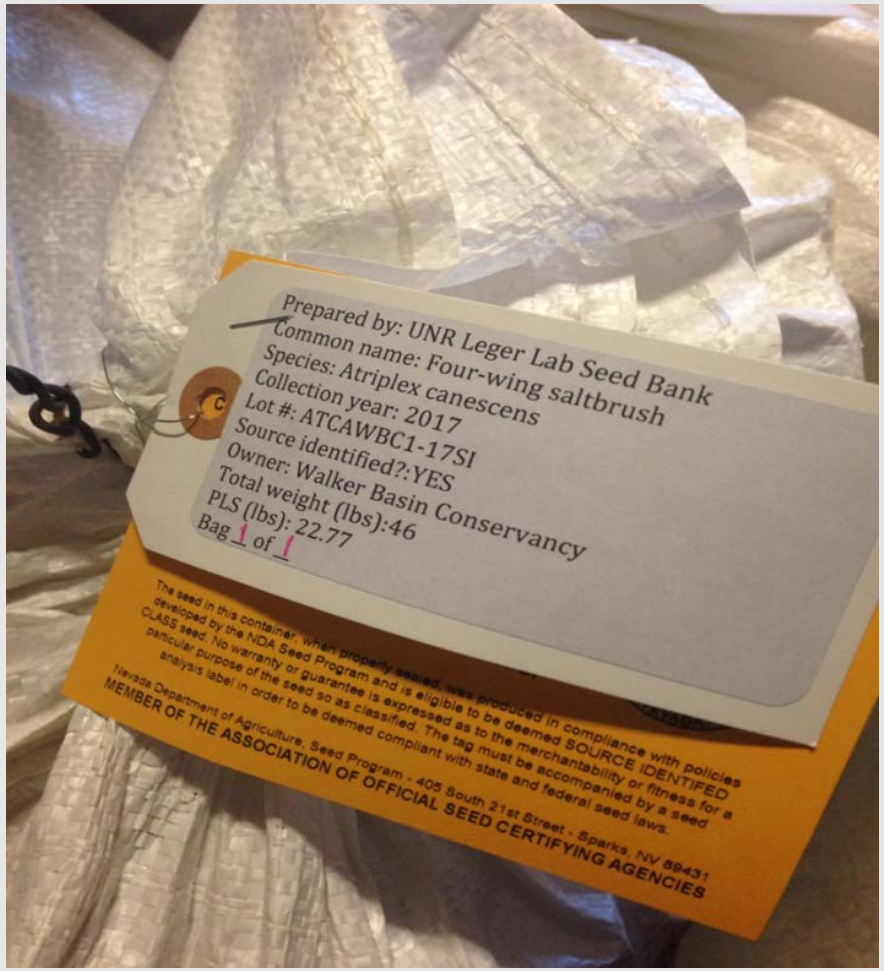
Simone Pedrini[1,2], Kingsley W. Dixon[1]

Recommends:

- 15*C for short-term
- -18*C for long-term

Labels/ inventory

- What species
- **Who owns it**
- When collected
- Seed lot
- Tests performed
- Estimated amount of seed (PLS)



Keep it Clean!

- Pests
  - Rodents
  - Insects
  - Diseases

SOME LESSONS LEARNED

- Cold storage systems need a monitoring system!
- An inventory system indicating who owns the seed is very important!
- When shipping seed always send a tracking number

Species cleaned to-date

- 69 different species
  - Shrubs, grasses, and forbs
- Over 280 different lots!

Special Thanks to….

- FS Bend Seed Extractory
- FS National Seed Lab
- FS Lucky Peak Nursery

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