

Native Forbs – Selection, Species Interactions, Seedbed Ecology.....



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Revegetation Equipment Catalog

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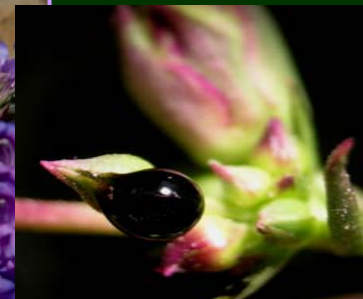
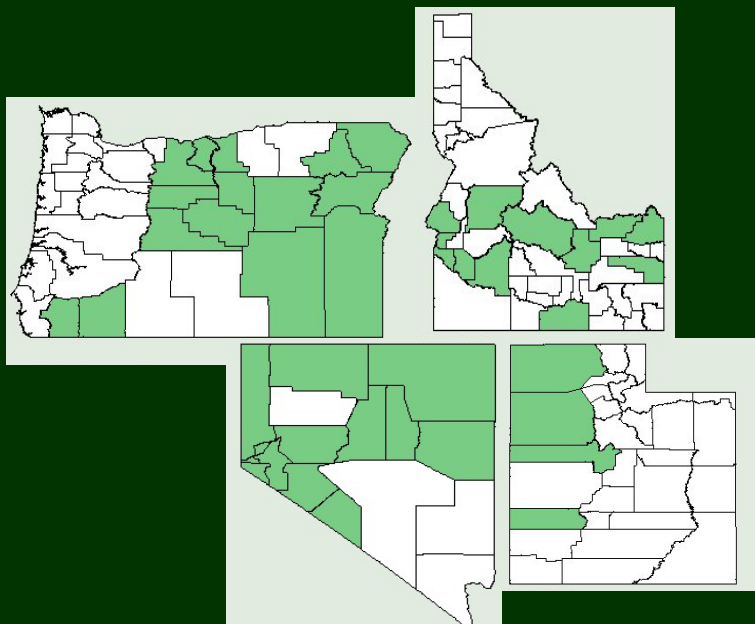
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USDA Forest Service
USDI Bureau of Land Management

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Jim Truax
Truax Company
New Hope, MN

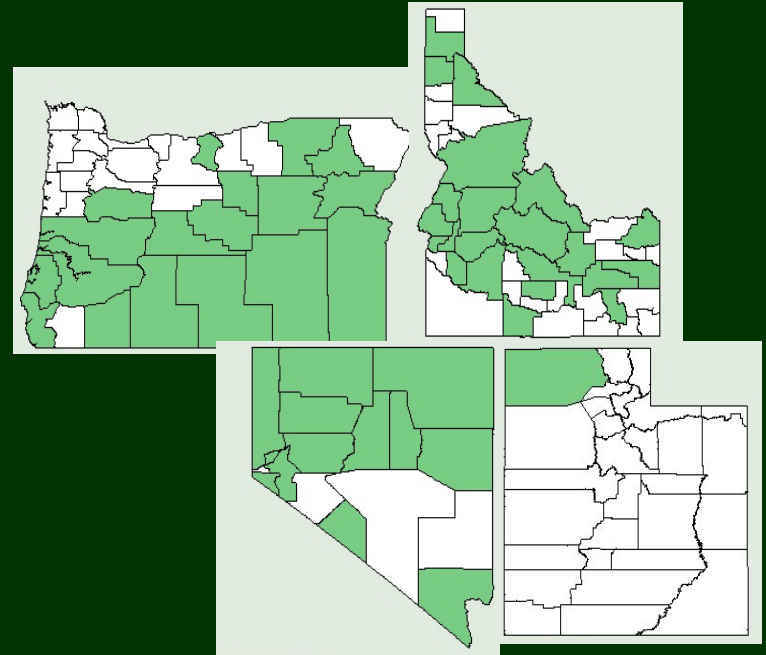
Penstemon speciosus Sagebrush penstemon



- Northern Basin and Range material
- Loamy soils from 2,500-10,800 ft
- Short-lived perennial
- Wide-ranging species
- Seed retention - intermediate (508,000 seeds/lb), yield: 220 lbs/acre

Penstemon deustus

Hotrock or scabland penstemon



- Northern Basin and Range
- Variable sites and habitats, often rocky areas (2,600-8,400 ft)
- Perennial with woody base, 2 Intermountain varieties
- Capsules remain closed at maturity (2,900,000 seeds/lb)

Hotrock penstemon

Penstemon deustus

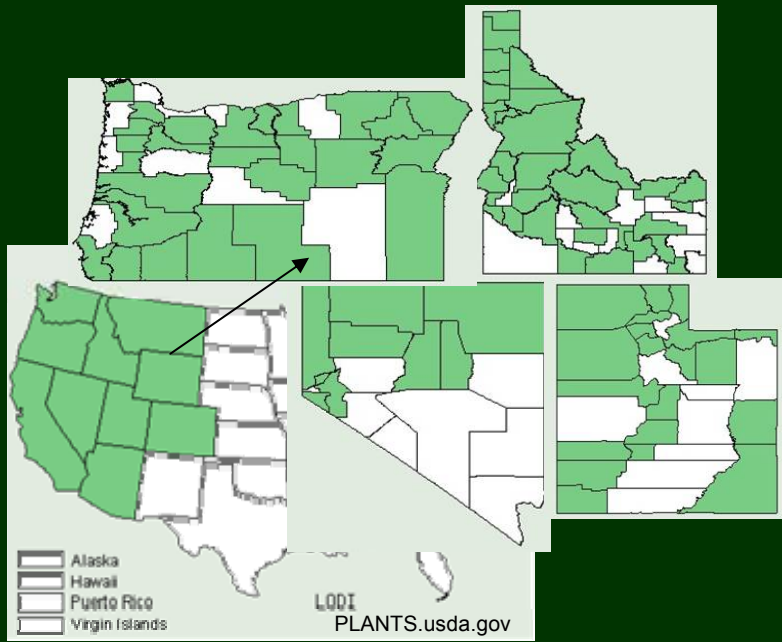


OSU Malheur Experiment Station

yield: 1170 lbs/acre

Lomatium dissectum

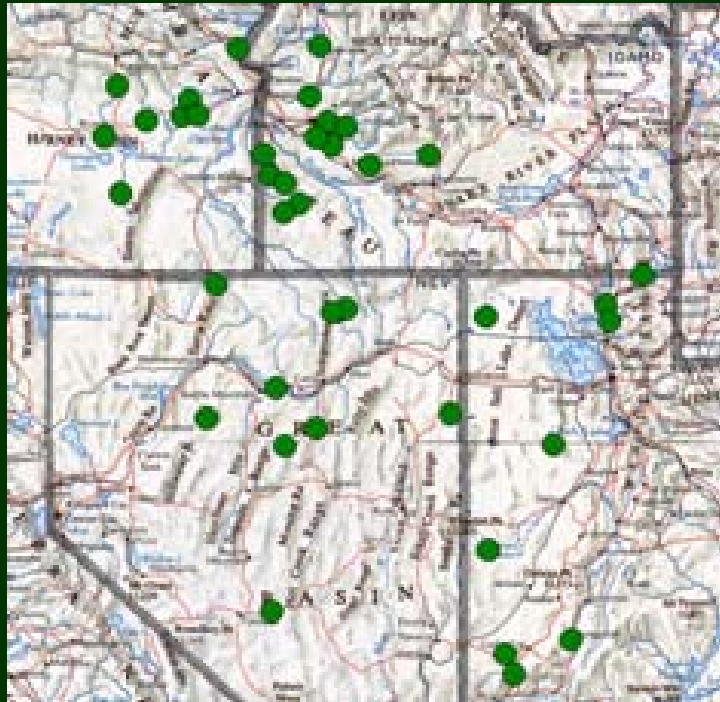
Fernleaf biscuitroot



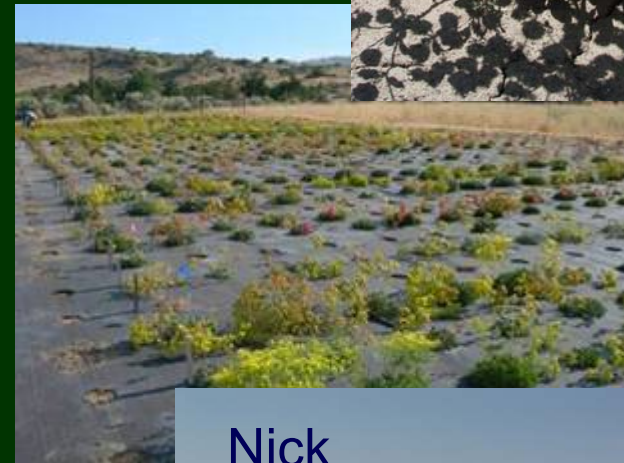
- Northern Basin and Range
- Large perennial (to 5 ft) with large, thickened woody taproot
- Widespread on variable medium- to coarse-textured soils
- Grows at elevations from 60-2,600 m
- Early phenology, dries back in late spring - early summer
- Used by wildlife, sage-grouse, livestock

Sulfur-flower buckwheat

Eriogonum umbellatum



Collection sites



Bluebunch wheatgrass



Additional collections distributed

Native Seedings



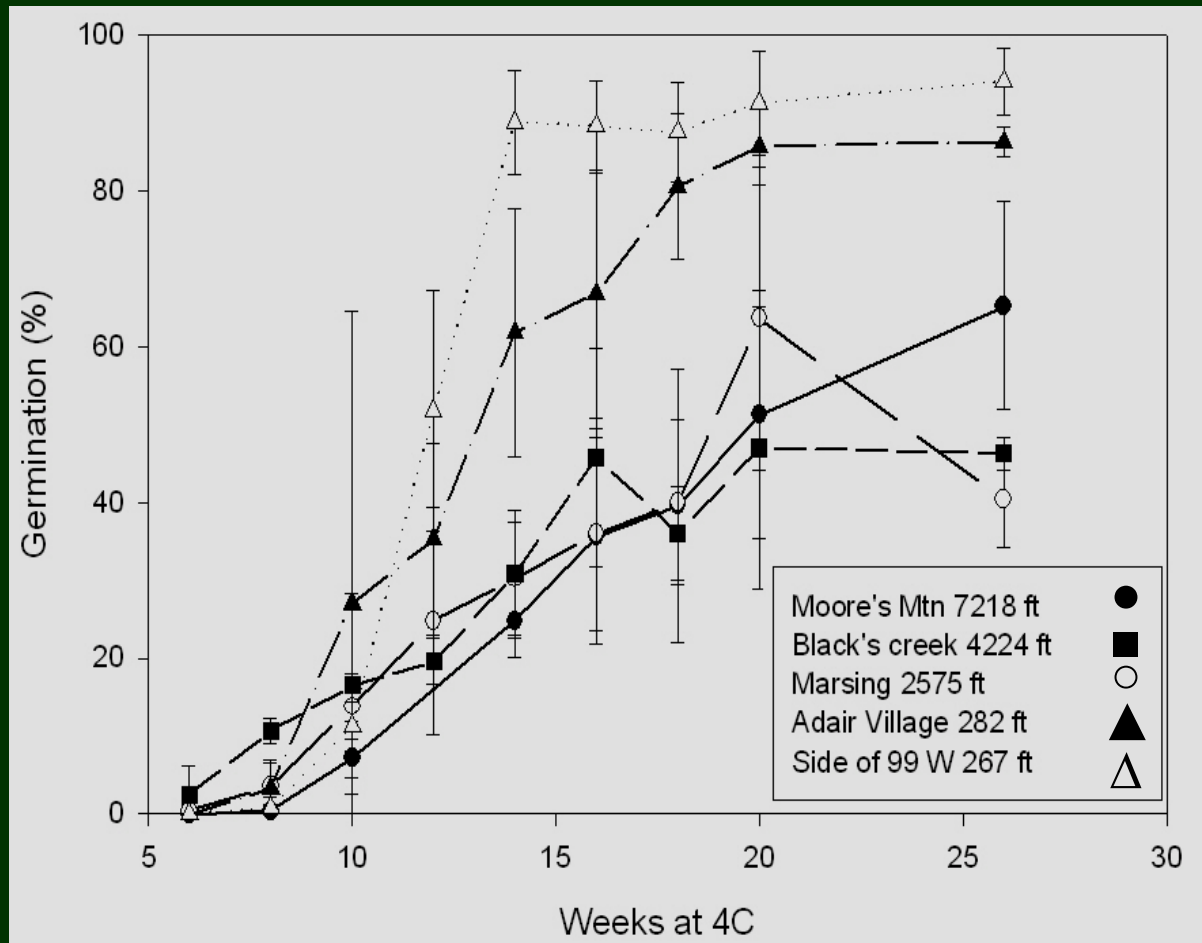
Environmental Regulation of Dormancy Loss in *Lomatium dissectum*

Cooperators: Melissa Scholten, RMRS, Boise State University,
ARS Pullman
Marcelo Serpe, Boise State University

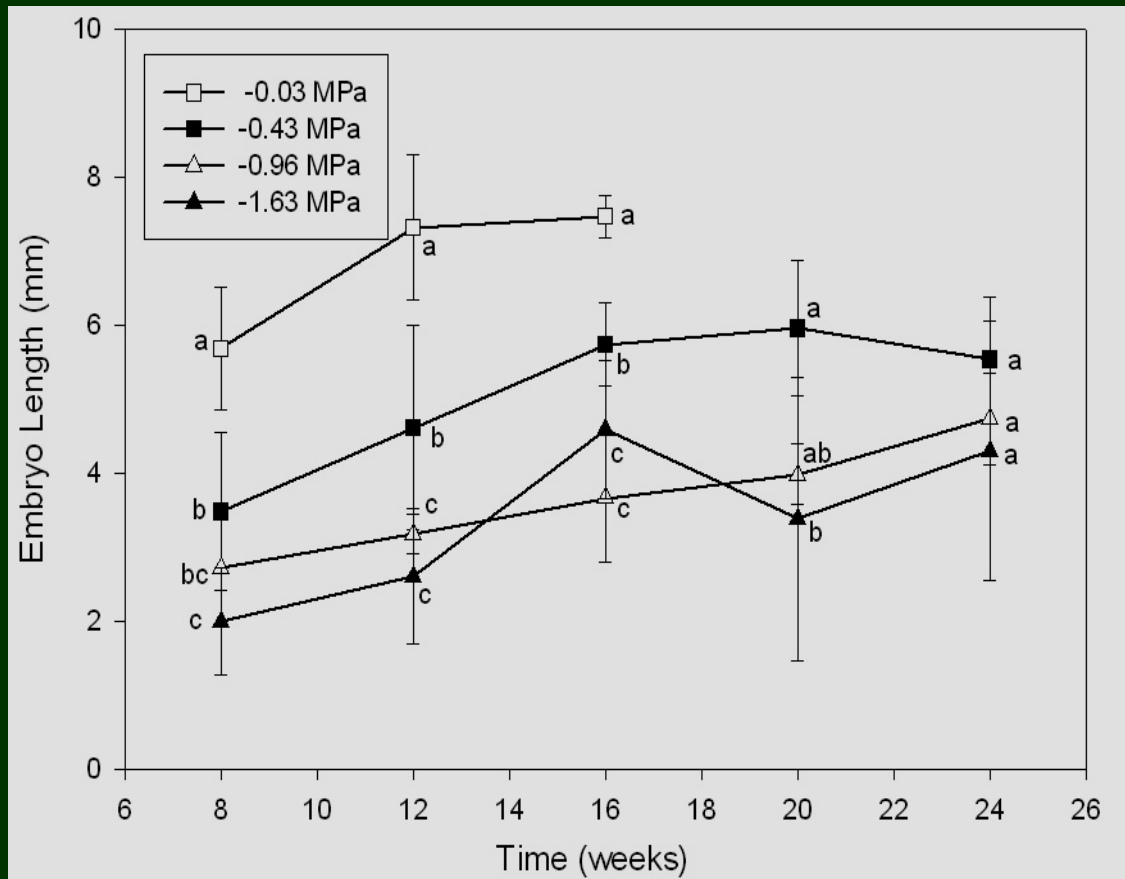
- Embryo development
- Germination and affecting factors
- Field germination and emergence
- Influence of seed origin on cold stratification requirement
- Effect of water potential on embryo development
- Hormonal control of germination



Effects of Stratification on Germination of *L. dissectum* Seeds Collected over an Elevation Gradient



Effect of Water Potential on Embryo Elongation



Assessing the Effects of Grass Competition on Great Basin Forbs

Cooperators:

Hilary Parkinson, RMRS and Montana State University

Catherine Zabinski, Montana State University, Bozeman

Objectives:

Measure the response of four native forbs to *Bromus tectorum* density.

Forb species:

Achillea millefolium

Eriogonum umbellatum

Lomatium grayi

Penstemon speciosus

BRTE density (m²):

0

1-50

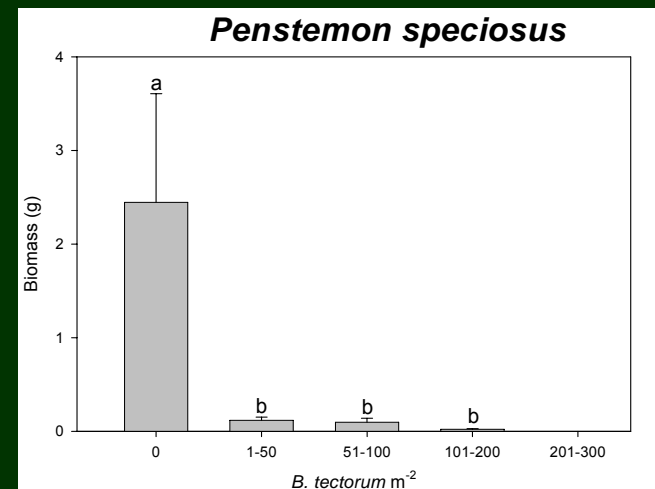
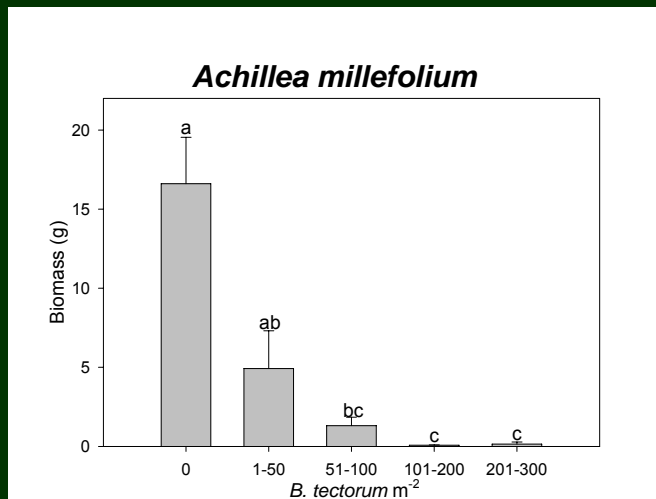
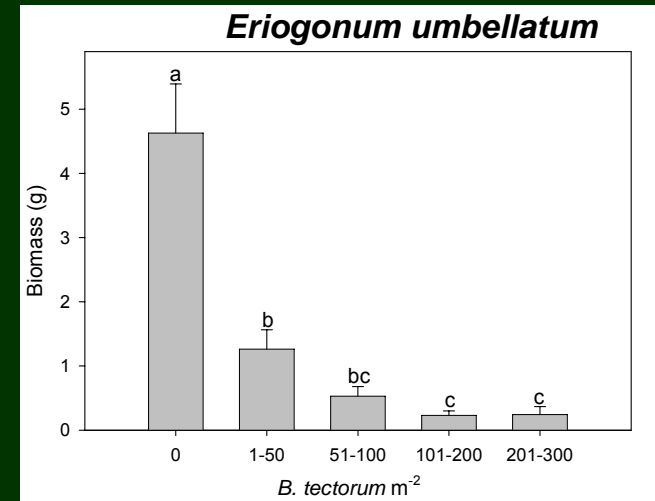
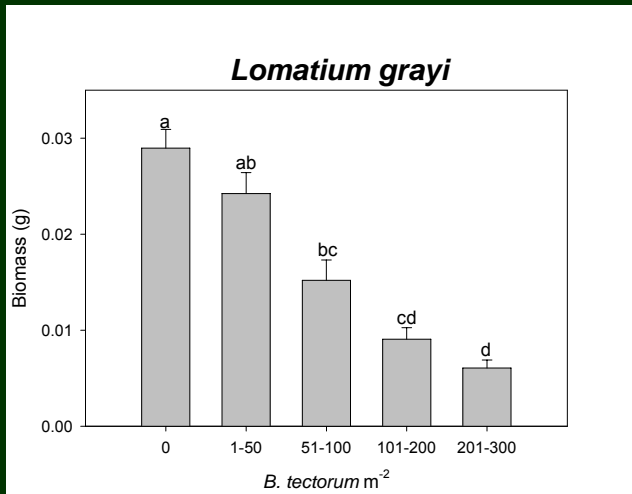
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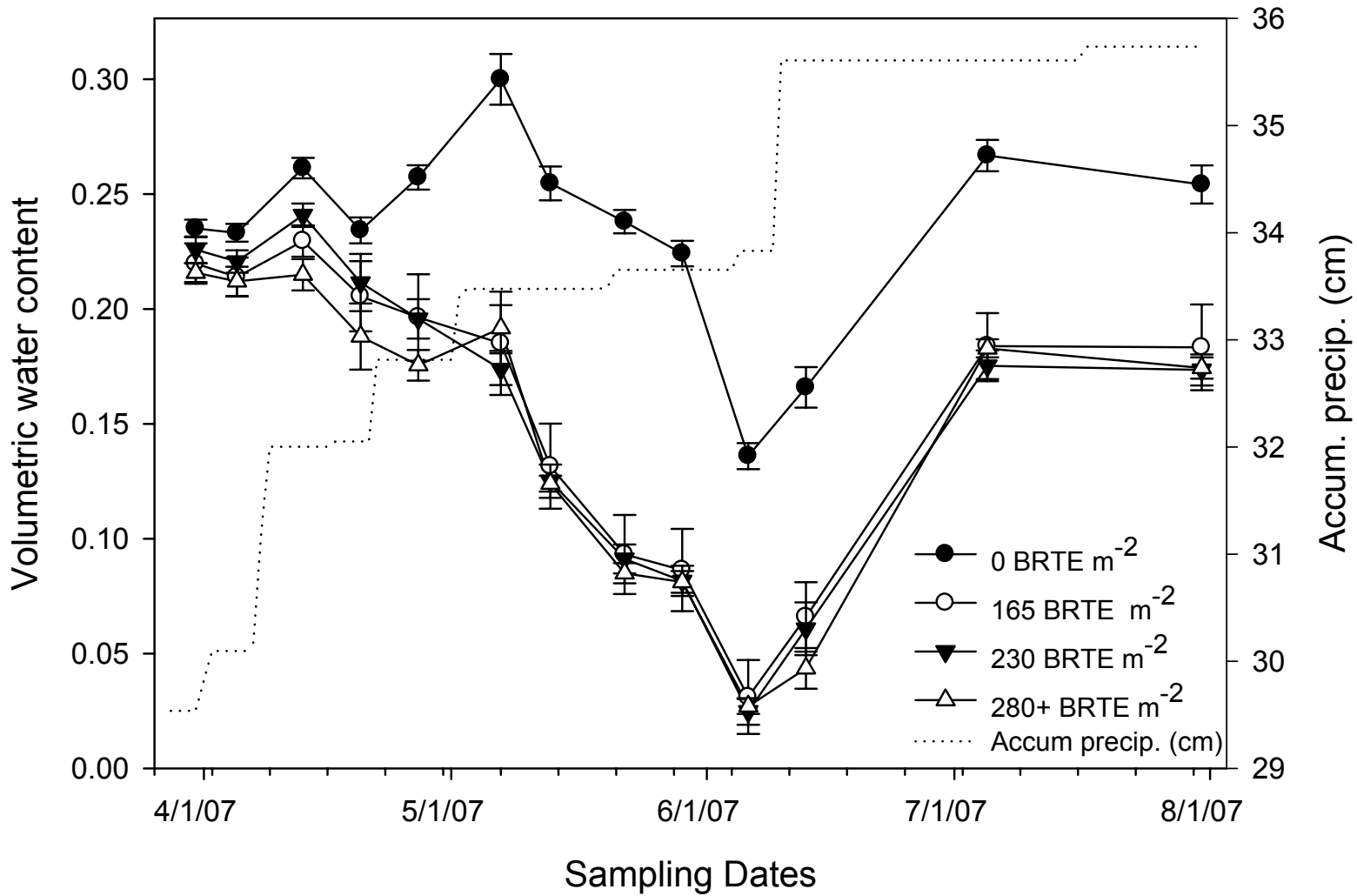
201-300



Forb Biomass Reduction by Cheatgrass Density



Volumetric water content (Lucky Peak)
by *B. tectorum* density: 0 - 30 cm depth



Competitive Dynamics Among Siberian Wheatgrass and Native Forbs and Grasses

Cooperators: Jennifer Muscha, M. Haferkamp, and L. Vermeire
USDA-ARS Fort Keogh LARRL, Miles City, MT

Objective: Examine interactions of native seed mixtures with Siberian wheatgrass.

Species:

Exotic grass:

Siberian wheatgrass

Native grasses:

Squirreltail

Sandberg bluegrass

Native forbs:

Western yarrow

Sagebrush penstemon





Conclusions

- ELEL growth > POSE
- ACMI develops more rapidly than PESP, begins developing rhizomes in < 5 mo.
- Although competitive effects appear reciprocal, AGSI control prior to seeding natives is essential.



POSE



ELEL



PESP

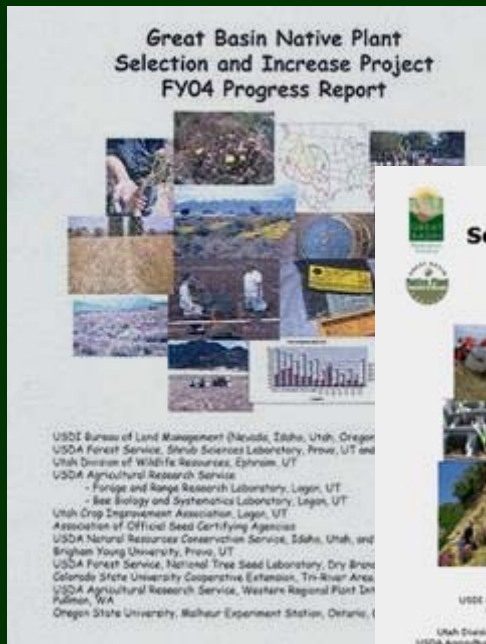


ACMI

Workshops



GBNPSIP Website



Cooperator list and links to their websites
Annual reports 2002 – 2006

Web address on brochure



Acknowledgments:

USDI BLM

Great Basin Restoration Initiative

Nevada Native Plant Development Project

Plant Conservation Alliance

Seeds of Success

Joint Fire Sciences Program

GBNPSIP, NNPD and JFSP Cooperators





Nineleaf
biscuitroot



Bluebunch
wheatgrass



Sagebrush
penstemon



Sand penstemon



Gray's
biscuitroot



Hotrock
penstemon



Western yarrow



Sulfur-flower
buckwheat