



Forage & Range Research Laboratory

Logan, UT



Acknowledgements

Great Basin Native Plant Selection and Increase Project



Native Plant Graduate Program



Utah State University

Wildland Resources

Biology

Plants, Soils, & Biometeorology

The Restoration Gene Pool Concept

Restoration Ecology 11:281-290 (2003)

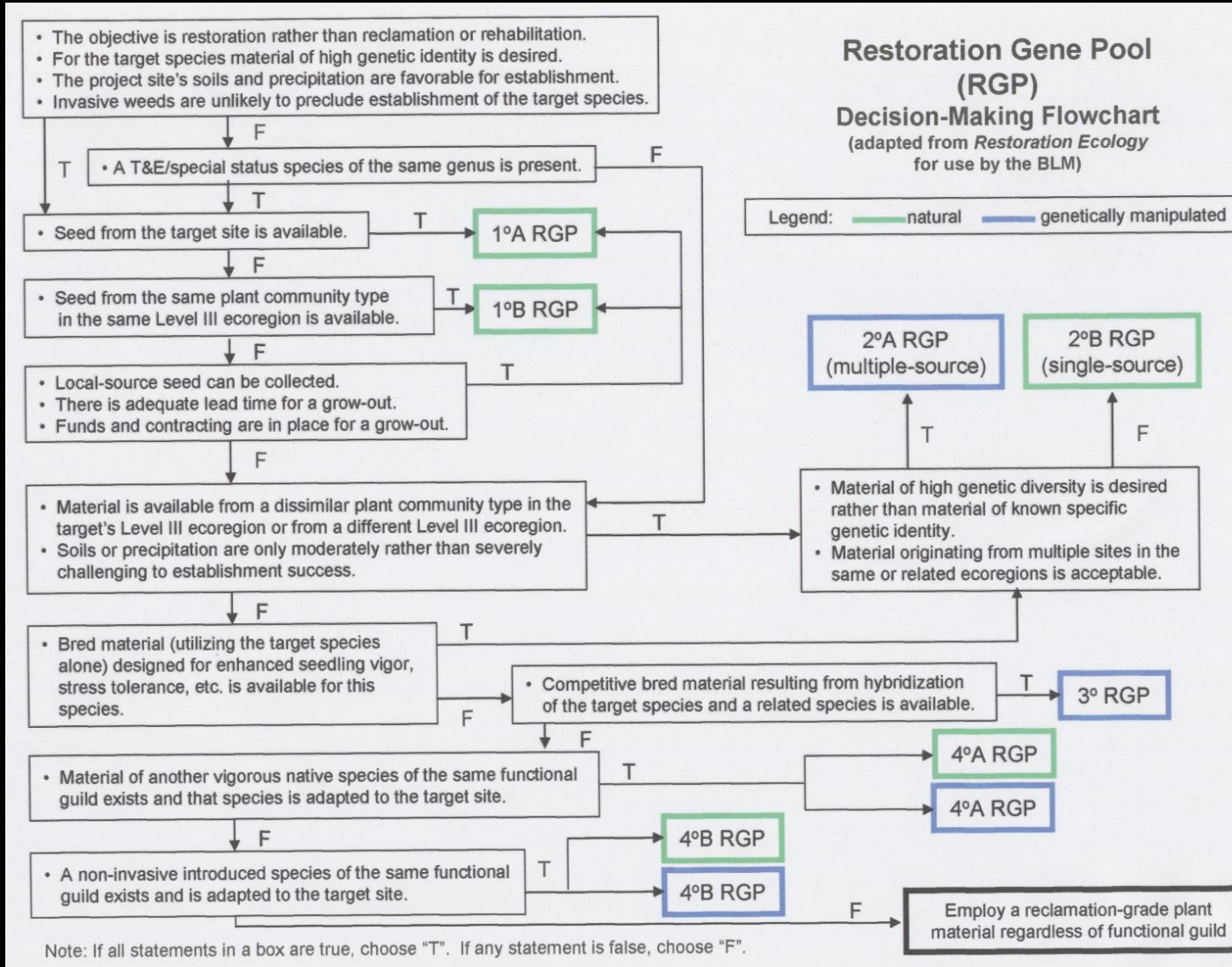
1° RGP: local material

2° RGP: distant material of the
same taxon

3° RGP: material modified by a
related taxon to improve
adaptation

4° RGP: alien taxon with better
adaptation than the local
taxon

RGP Flowchart

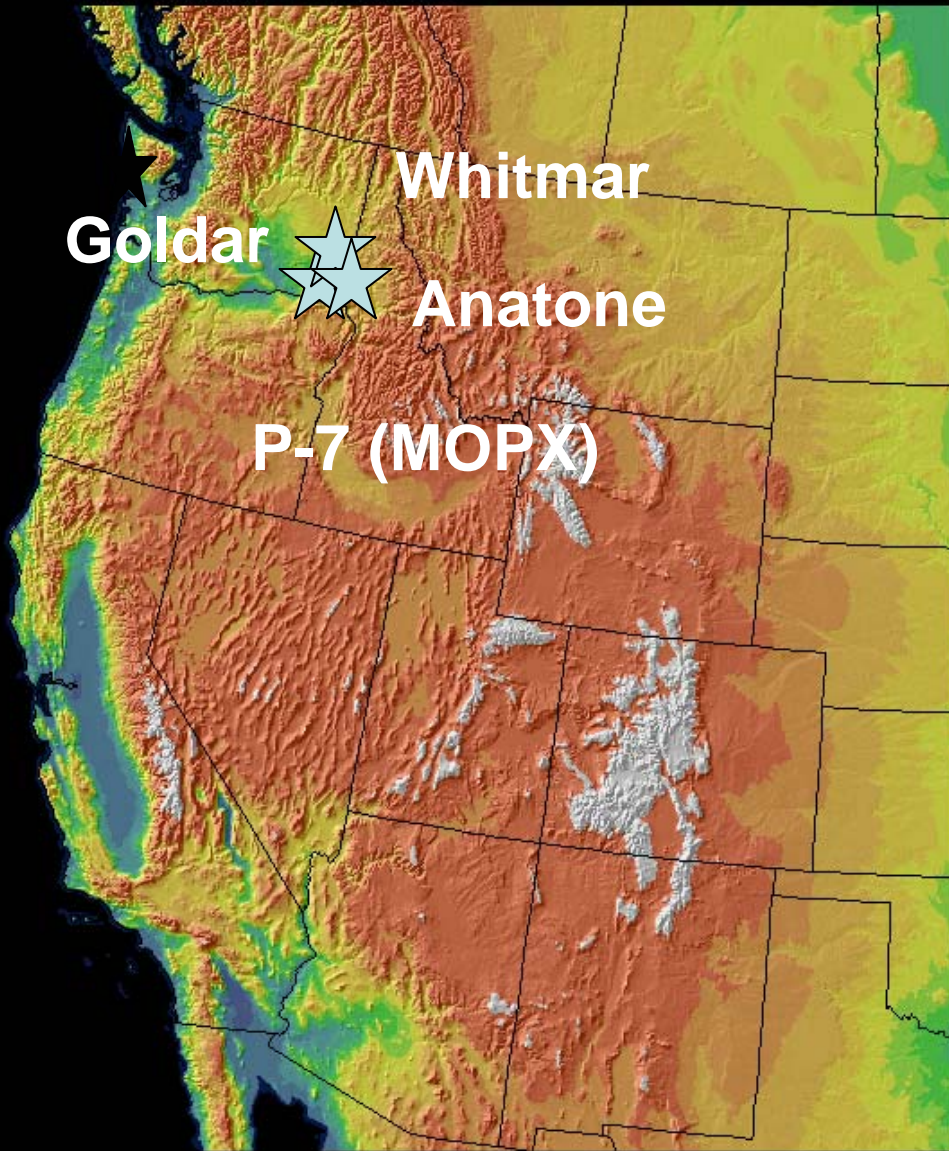


Ecological Restoration 25:12-19

March 2007

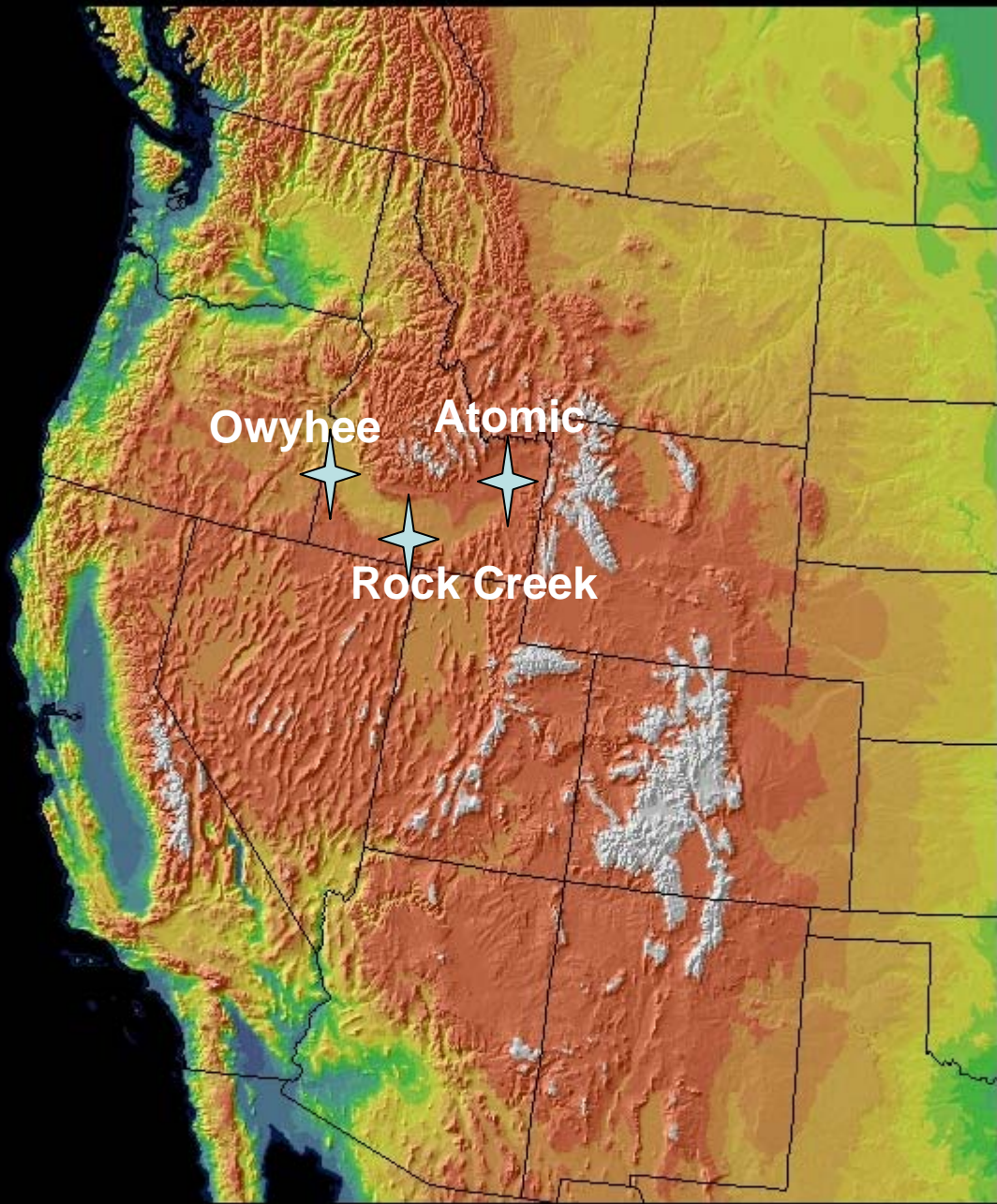


Bluebunch wheatgrass



Bluebunch wheatgrass

2° RGP



Bluebunch wheatgrass

1° RGP



P-7



P-27

51% heavier seeds

Bluebunch wheatgrass

3° RGP

A photograph of a field of bluebunch wheatgrass. The grass is green and clumpy, growing in a dry, brownish soil. Several bright red markers are scattered throughout the field, likely used for research or monitoring. The text is overlaid in white on the center of the image.

selection for regrowth from clipping

P-5

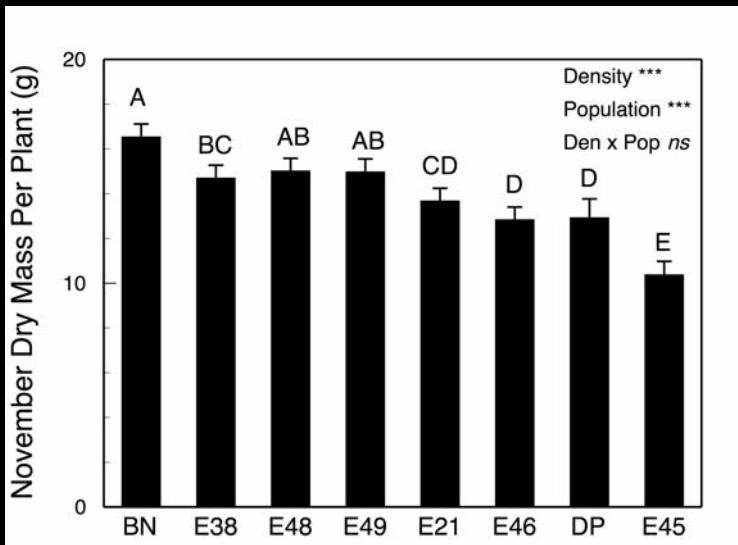
Bluebunch wheatgrass



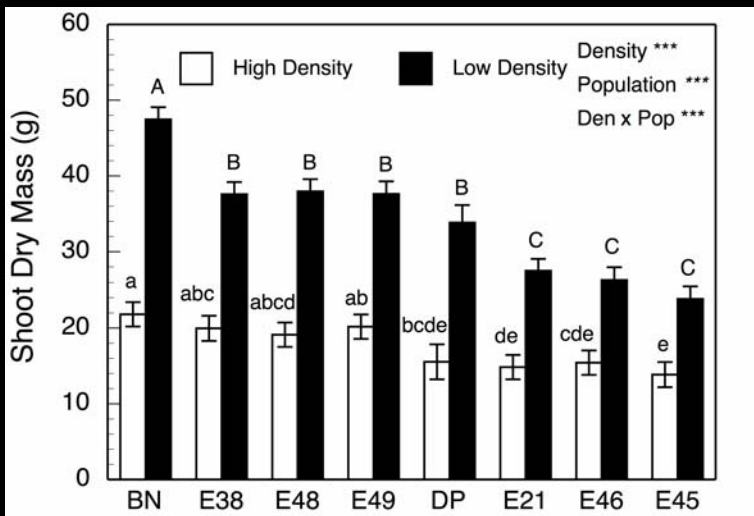
Snake River wheatgrass

4° RGP

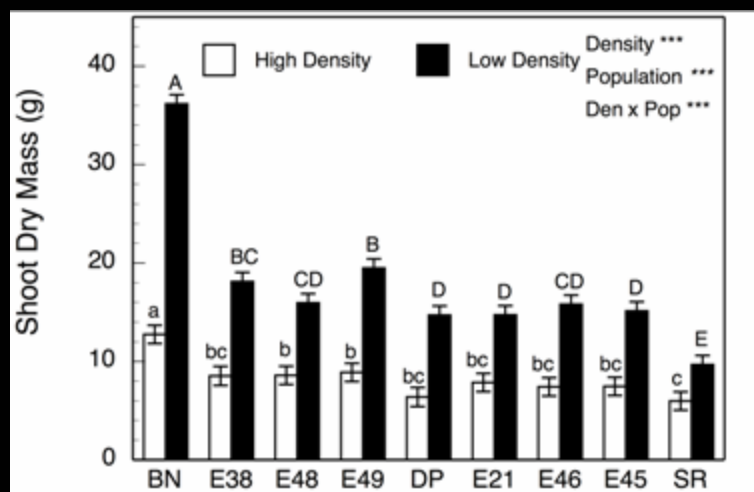
(functionally similar to BBWG)



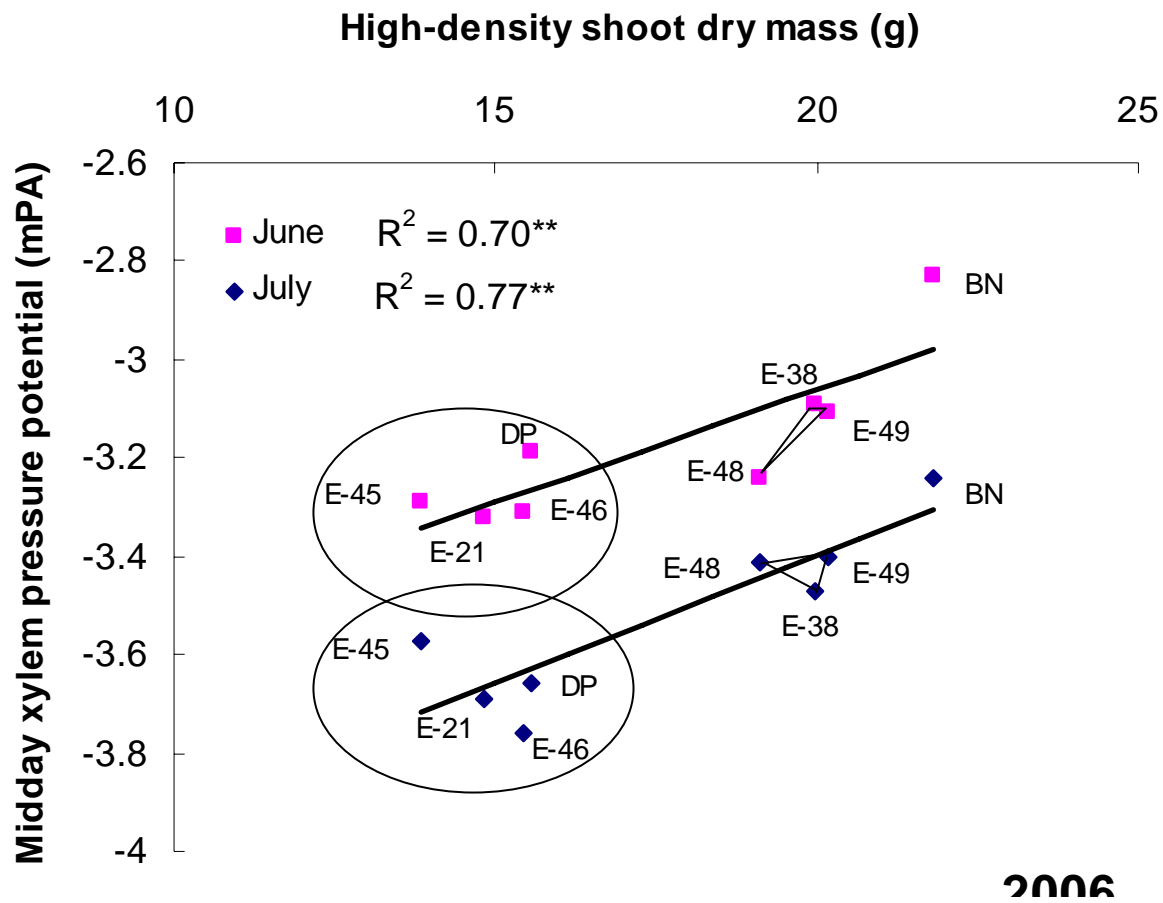
Fall 2005
est. 2005



Summer 2006
est. 2005



Fall 2006
est. 2006

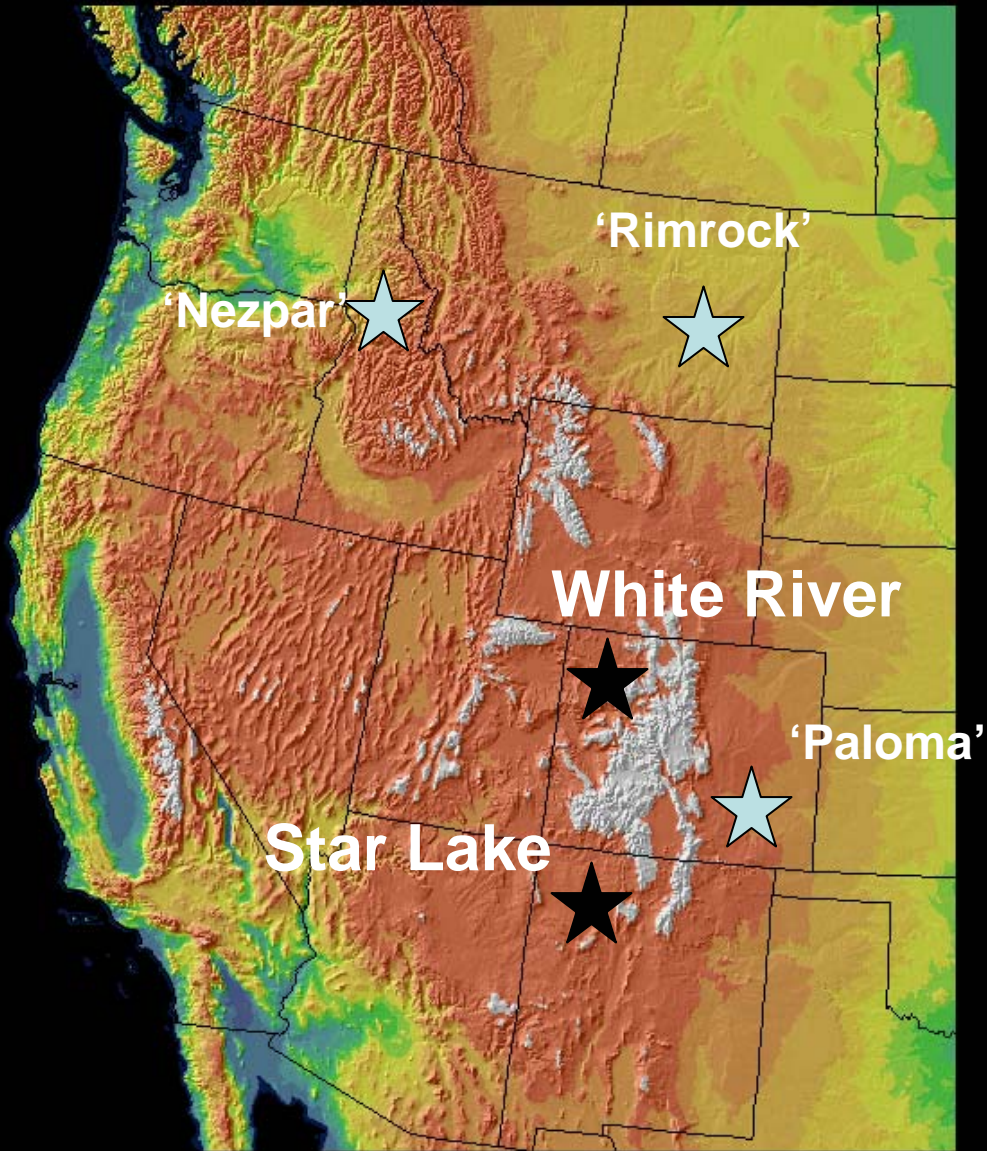


Summer 2006

est. 2005



Indian ricegrass



Indian ricegrass

2° RGP

Jumbo

Globose

Elongate
(Star Lake)



Seed Mass

8.62 mg

3.37 mg

2.33 mg

Germination

negligible

20%

66%

Lemma Thickness

180 μ m

93 μ m

52 μ m

2006 Release

**White River Germplasm
Indian ricegrass**

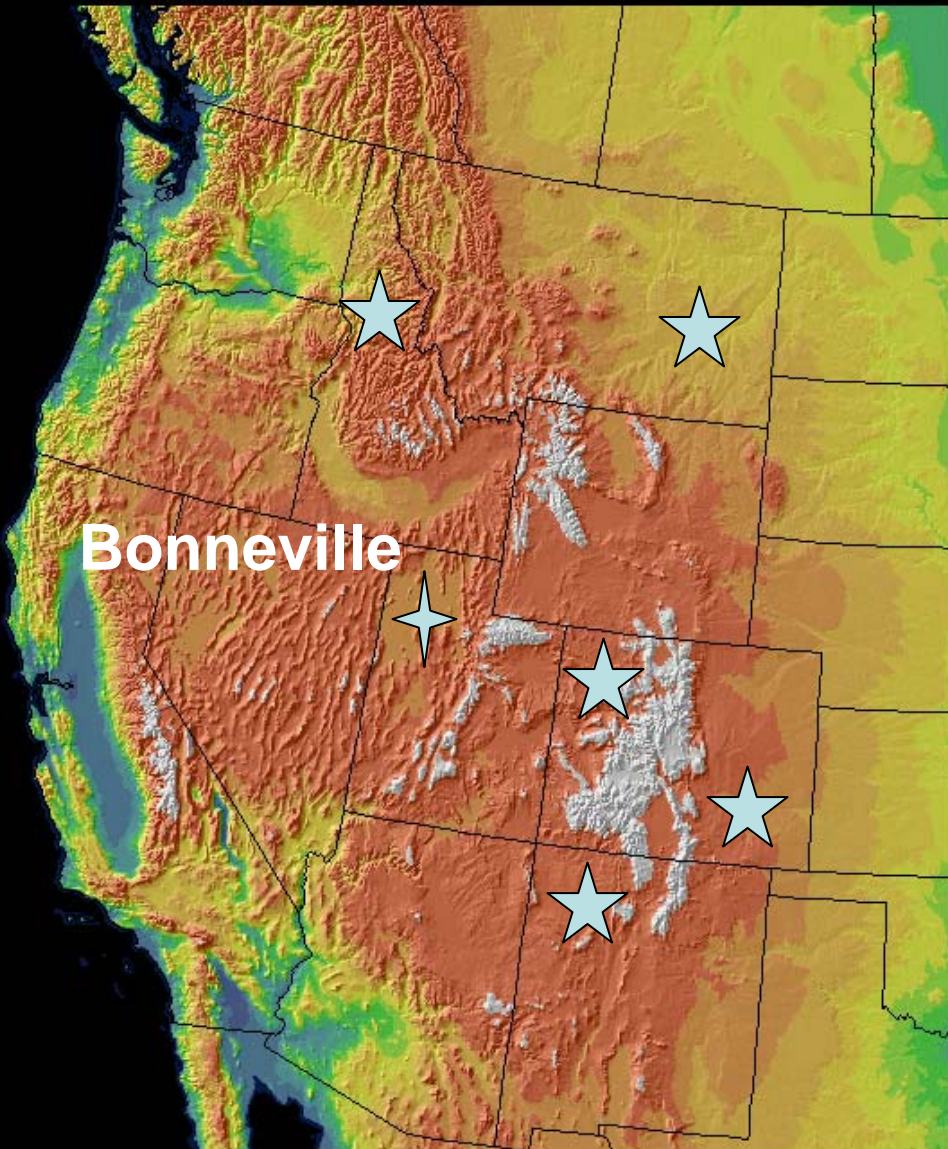
NRCS Trial at Pinedale, WY

**stand superior to Nezpar (4 of 6 years)
and Rimrock (3 of 6 years)**

**vigor superior to Nezpar (3 of 6 years)
and Rimrock (2 of 6 years)**

**vigor inferior to Nezpar and Rimrock
(1 of 6 years)**

**biomass superior to Nezpar and
Rimrock (1 of 3 years)**



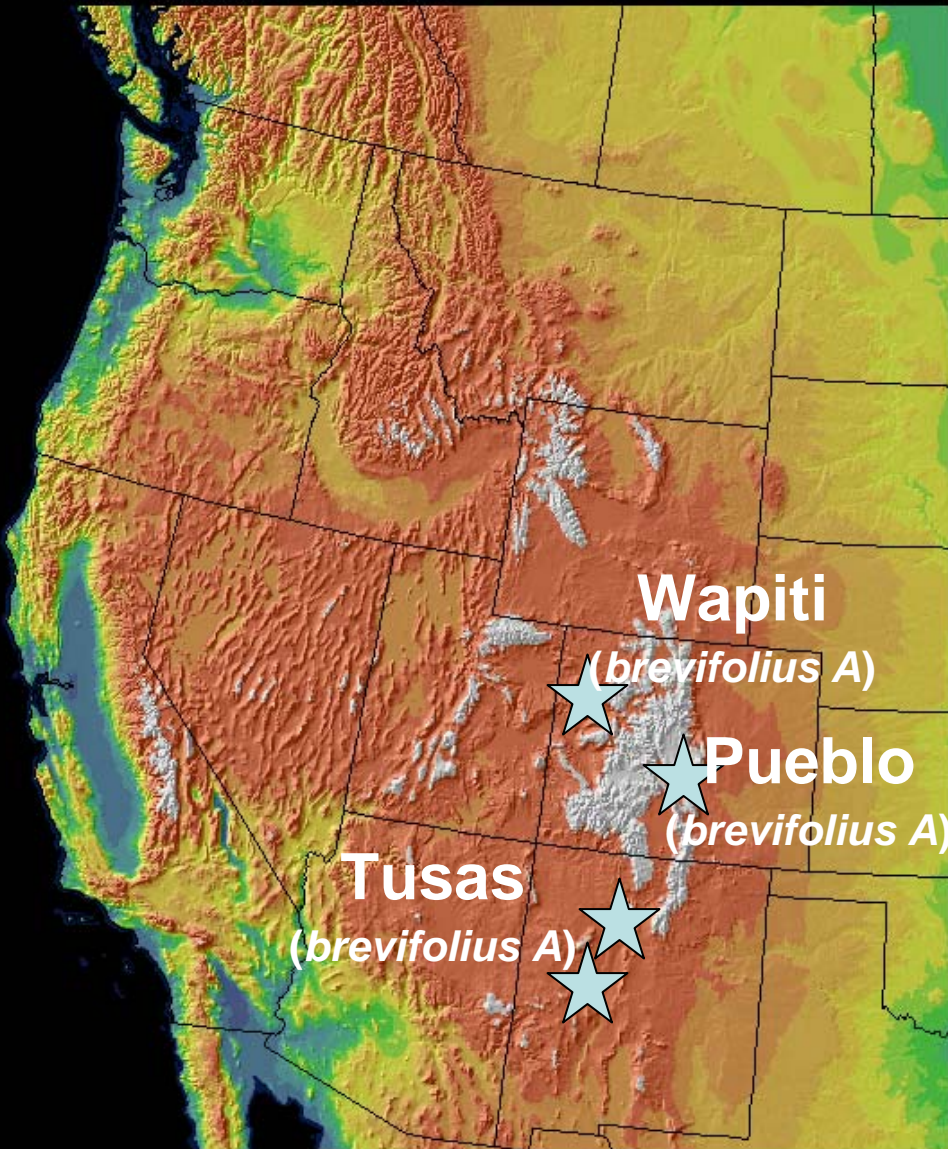
Bonneville

Indian ricegrass

1° RGP

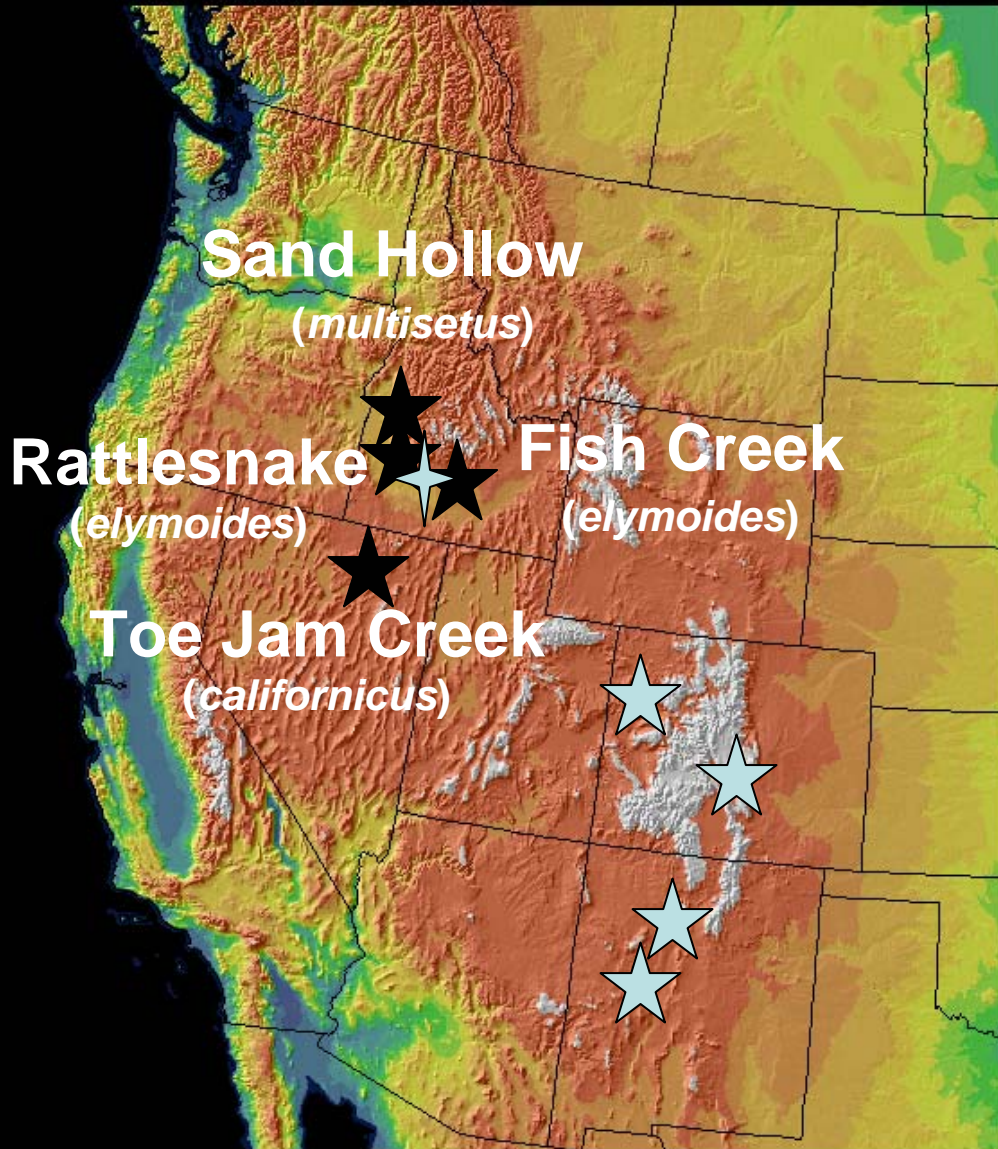


Squirreltail



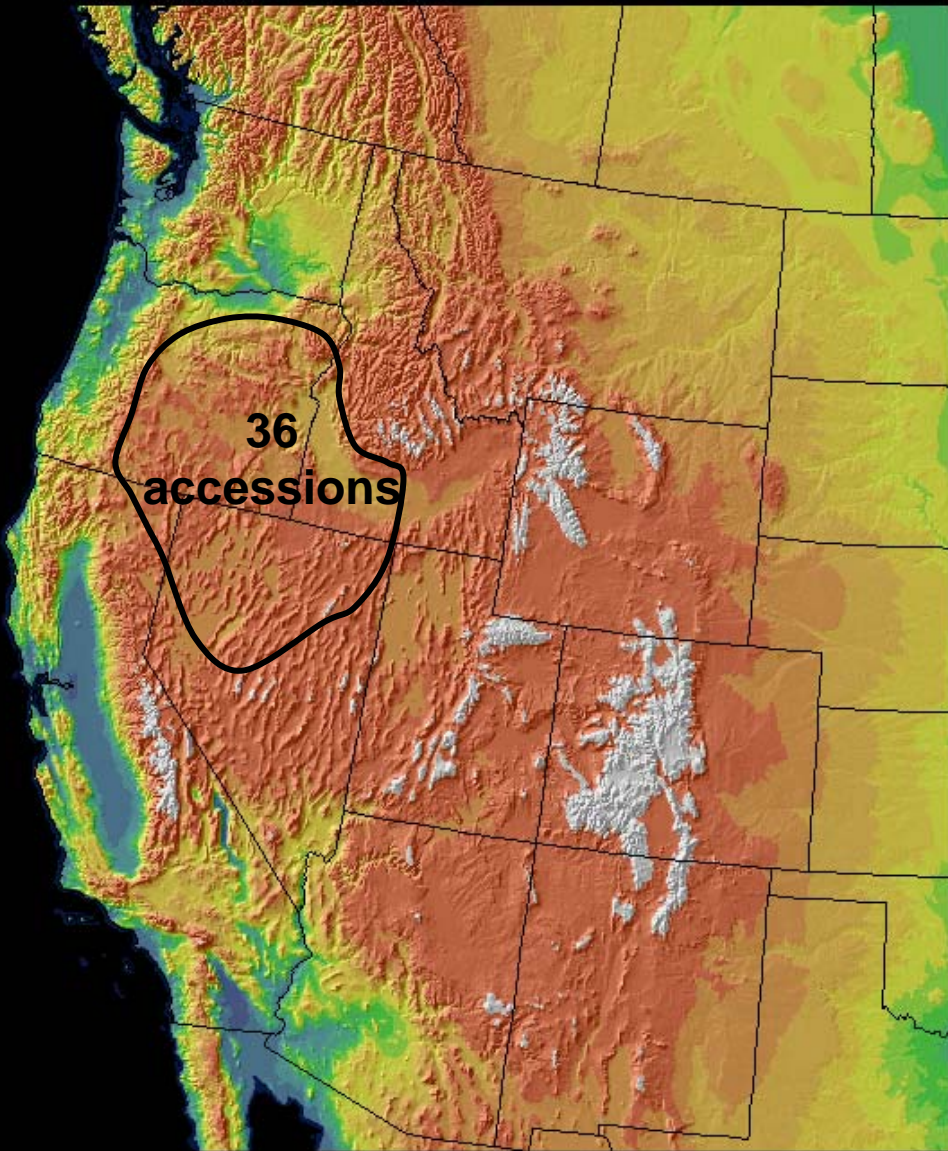
Squirreltail

2° RGP



Squirreltail

1° RGP



***brevifolius* C Squirreltail**

1° RGP



Sand Hollow Germplasm

big squirreltail

(Elymus multisetus)





Toe Jam Creek
(*E. elymoides*
ssp. californicus)

Fish Creek
(*E. elymoides*
ssp. elymoides)

**Bottlebrush Squirreltail
germplasms**





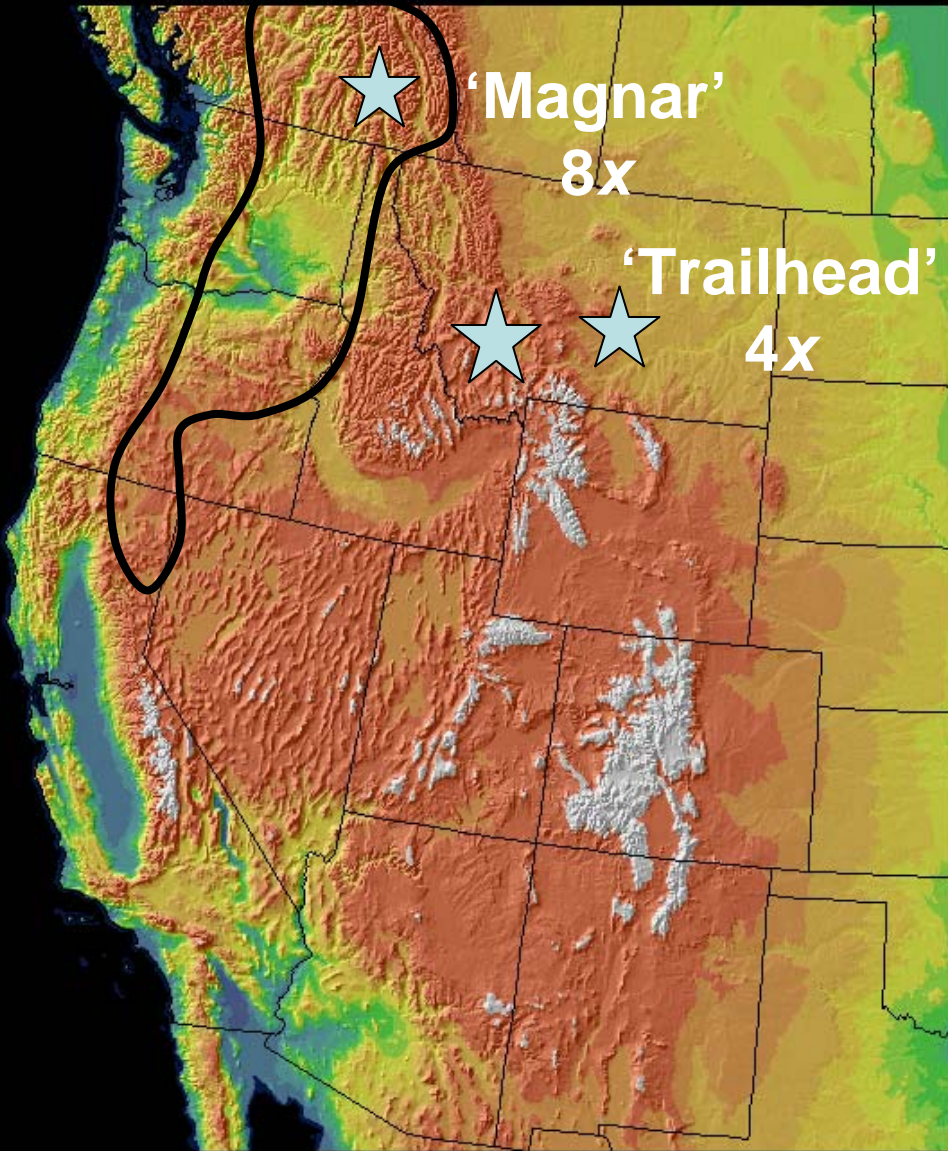
Rattlesnake

Fish Creek

E. elymoides* ssp. *elymoides



Basin wildrye



Basin wildrye

2° RGP



Acc:636

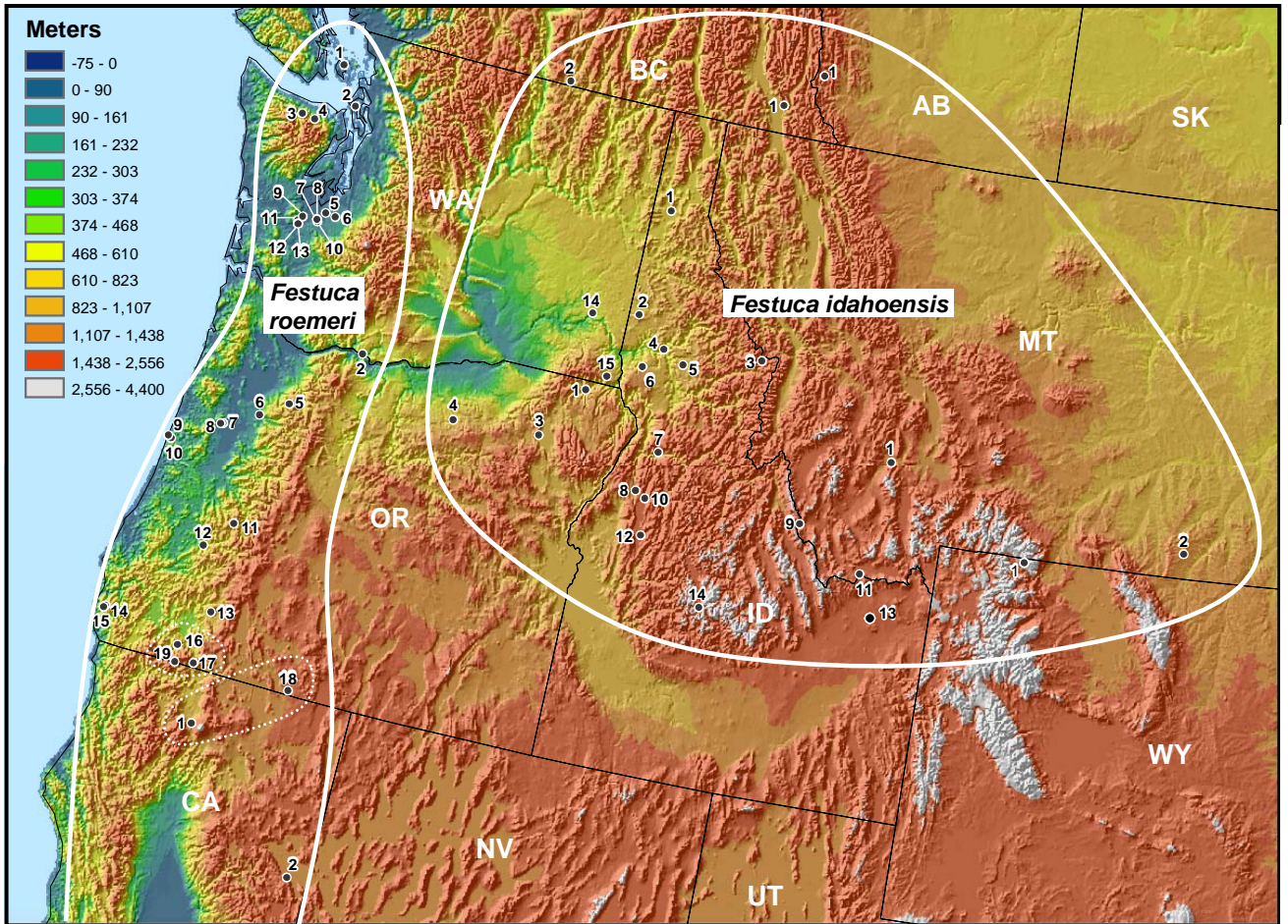


Continental

34% heavier seeds

Basin wildrye

3° RGP



Idaho fescue
Roemer's fescue

Needle-and-thread

(Hesperostipa comata)

Phenotypic evaluation

42 accessions

- southwestern Idaho
- south-central Idaho
- eastern Oregon

AFLP genetic analysis

- above materials
- Nevada and Utah
(UDWR/SSL)
- northwestern Colorado
- western Wyoming

Thurber's needlegrass (*Achnatherum thurberianum*)

Phenotypic evaluation

15 accessions

- southwestern Idaho
- south-central Idaho
- eastern Oregon

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