



USDA-ARS Plant Materials

Introduced grasses:

Crested wheatgrass: *'Hycrest'* (1985), *'Douglas'* (1995), *'CD-II'* (1996), *'RoadCrest'* (1998), *'Hycrest-II'* (2008)



'Bozoisky-II'

Russian wildrye: *'Bozoisky-Select'* (1985), *'Bozoisky-II'* (2005)

Siberian wheatgrass: *'Vavilov'* (1995), *'Vavilov-II'* (2008)

Native grasses:

Basin wildrye: *'Continental'* (2008)

Bluebunch wheatgrass: *P-7* (2001)

Green needlegrass: *Cucharas* (2002), *Fowler* (2006)

Indian ricegrass: *'Rimrock'* (1996), *Star Lake* (2004), *White River* (2006)

Sandberg bluegrass: *Reliable* (2005)

Slender wheatgrass: *'FirstStrike'* (2006)

Snake River wheatgrass: *'Discovery'* (2007)

Squirreltail: *Sand Hollow* (1996), *Toe Jam Creek* (2003), *Fish Creek* (2003), *Rattlesnake* (2007)



'FirstStrike'



'San Luis' (left) and 'FirstStrike' (right) slender wheatgrass



'Trailhead' (left) and 'Continental' (right) basin wildrye

Legumes and Forbs:

Basalt milkvetch: *NBR-1* (2008)

Falcata alfalfa: *'Don'* (2008)

Western yarrow: *Yakima* (2005)

Note: Quotation marks indicate cultivar; no quotation marks indicate pre-variety germplasm.

¹USDA-NRCS, lead agency in cultivar development.

Seed available from the Utah Crop Improvement Association
1-435-797-2082

ARS Mission

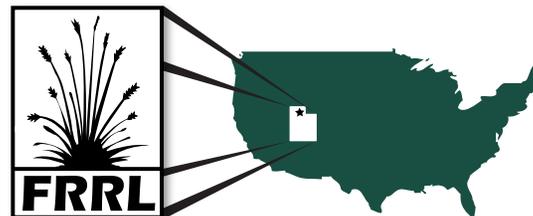
The Agricultural Research Service conducts research to develop and transfer solutions to agricultural problems of high national priority and provides information access and dissemination to:

- ensure high-quality, safe food and other agricultural products
- assess the nutritional needs of Americans
- sustain a competitive agricultural economy
- enhance the natural resource base and the environment, and
- provide economic opportunities for rural citizens, communities, and society as a whole.



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PLANTS FOR THE WEST

Forage and Range Research Laboratory
USDA-Agricultural Research Service
696 North 1100 East - Logan UT 84322
www.ars.usda.gov/npa/logan
1-435-797-3066

Tom Jones (group leader)
Thomas.Jones@ars.usda.gov
1-435-797-3082



RANGELAND ECOLOGY AND PLANT IMPROVEMENT

VISION

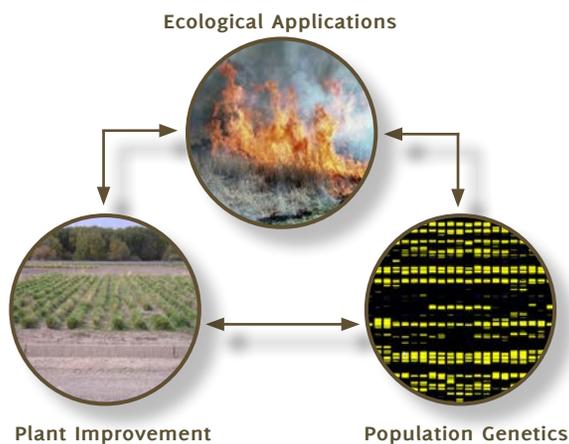
To develop plant materials and ecological applications to improve weed- and fire-resistance of rangelands.

RESEARCH OBJECTIVES

1. Identify and characterize ecologically and economically important functional plant traits (e.g., seedling establishment, growth rate, competitive ability, stress tolerance, and seed production).
2. Develop germplasms and cultivars improved for these traits for diverse plant communities.
3. Demonstrate the ecological significance of these traits for rangeland applications.



INTERDISCIPLINARY APPROACH



Provide novel rangeland plant materials for the Intermountain West through an interdisciplinary and interactive scientific effort encompassing *genetic analysis* of plant populations, the development of better performing *plant materials*, and on-the-ground *ecological applications* of these plant materials.

PRIMARY RESEARCH GOALS

Rangeland Ecology

- Elucidate the interaction of soil characteristics and the growth of invasive and desirable plants.
- Identify combinations of plant materials and management practices that enhance rangeland health and productivity.



Germplasm Development

Introduced Grasses:

- Siberian wheatgrass with improved drought tolerance, persistence, and seedling establishment.
- Crested wheatgrass with improved seedling establishment, persistence, and enhanced forage quality.
- Russian wildrye with improved forage quality and stand establishment.

Native Grasses and Legumes:

- Bluebunch wheatgrass with increased yield and seed production.
- Determine the genetic and evolutionary relationships among bluebunch wheatgrass and *Elymus* species.
- Identify genes for economically important traits to improve thickspike and Snake River wheatgrass.
- Western wheatgrass with improved seedling establishment and seed yield.
- Improve the germination, seedling establishment, seed yield, and shattering resistance of native grasses.
- Develop basalt milkvetch and prairie clover with enhanced seed production, germination, and seedling establishment.

RESEARCH APPROACH

