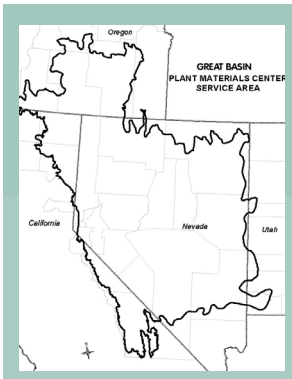

Great Basin Plant Materials Center

USDA Natural Resources Conservation Service *January 2008*

New Study Underway to Enhance Post-wildfire Restoration

Equipment and Strategies to Enhance Post-wildfire Establishment and Persistence of Great Basin Native Plants

Many native plant communities in the Great Basin have been altered by the encroachment of annual weeds, particularly cheatgrass, and an accompanying increase in fire frequency. The Great Basin PMC is part of a collaborative project led by the US Forest Service's Rocky Mountain Research Station investigating revegetation technology to restore native plant communities following fire.

The stated objectives of the study include, 1) Examine seeding techniques for Wyoming big sagebrush, 2) Test seeding technology for native species, 3) Compare modified rangeland drill and experimental no-till drill, 4) Examine use of US Geological Survey proposed emergency stabilization and rehabilitation monitoring protocols for gauging seeding success, and 5) Examine livestock grazing effects on diversity in native plant seedings.

In the fall of 2007, study plots were established near Mountain Home, ID, and Burns, OR. Other collaborators include the USDI Bureau of Land Management, USGS Biological Research Division, and NRCS Aberdeen Plant Materials Center.

FUEL BREAK STUDY

In northern Nevada and much of the Great Basin region, fire frequency has increased due to the establishment of annual weed species such as cheatgrass. The increase in fire frequency represents an economic risk to landowners and an environmental risk to native plant communities that may be converted to weed-dominated communities following fire.

In the fall of 2007, a study was established near the town of Orovada, Nev., to study species and seeding technology that could be used to establish vegetation fuel breaks to inhibit the spread of wildfires. Collaborators on the project include the Wildlife Support Group, Nevada Fire Safe Council, and Resource Concepts, Inc.

Streambank Stabilization Project

In December 2006, a project was initiated to evaluate herbaceous species that could be used for streambank stabilization. Erosion control netting was placed over half of the plots to determine whether it would enhance species establishment (*below*). Plots were evaluated in fall of 2007. The most successful species, as determined by percent cover, was 'Pryor' slender

(cont. next page)

Great Basin Plant Materials Center

Mission Statement:
Specialize in the collection, testing, and selection of native and adapted plant materials, cultural practices, and restoration and rehabilitation methods for resource concerns of the Great Basin.

The Great Basin PMC is the newest plant materials center, bringing the number of PMC's nationwide to 27.

The Great Basin PMC service area covers approximately 139,000 square miles, almost 89 million acres, in four states: Nevada, Oregon, California, and Utah.

More information can be found at:
www.nv.nrcs.usda.gov
Plant-Materials.nrcs.usda.gov

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Helping People Help the Land

wheatgrass with an average of about 8.5% cover. 'Sodar' Streambank Wheatgrass was second with approximately 3.5% cover. 'Arriba' Western Wheatgrass, 'Magnar' Basin Wildrye, and 'Rio' Beardless Wildrye all averaged less than 1% cover. With the exception of 'Sodar' Streambank Wheatgrass, all species exhibited greater establishment where erosion control netting had been applied. Overall establishment was probably below average due to extremely low rainfall during the growing season.

This project is being conducted in collaboration with the Mason Valley Conservation District.

Foxtail Barley Control and Revegetation Project

Foxtail barley is an invasive species that has spread into agricultural areas and native plant communities in the Great Basin. The awns of mature foxtail barley can cause serious injury to the eyes, nose, throat, and ears of livestock and wildlife, particularly deer and pronghorn.

In the fall of 2007, a project was established near Fallon, Nev., with the following objectives: 1) Evaluate control of foxtail barley with 6 herbicides, 2) Evaluate species that can compete with and suppress foxtail barley, 3) Evaluate herbicide effects on 8 plant species used to revegetate foxtail barley communities

Collaborators on this project include the Greenhead Hunting Club, University of Nevada Cooperative Extension, and University of Utah.

Preliminary Results in on Swingle Bench Project

In the fall of 2003, a study was established at Swingle Bench near Fallon, Nev., to evaluate species that could be used to revegetate abandoned cropland. In half of the plots, a cover crop, either rye or wheat, was established before planting the revegetation species. During the 2004 and 2005 growing seasons, irrigation water was applied to the plots. Plots were evaluated in October 2007 after 2 years without irrigation treatments. Results indicate that revegetation species were not able to get established in areas where a cover crop had been planted.

In plots where a cover crop was not planted, the most successful species, as determined by percent cover, were 'Vavilov' Siberian Wheatgrass and 'Pryor' Slender Wheatgrass which both had 17% cover in plots where they were planted. Other species that were relatively successful include 'Bozoisky' Russian Wildrye (8% cover), 'Magnar' Basin Wildrye (7% cover), and 'Nezpar' Indian Ricegrass (5% cover). All of these species effectively suppressed the growth of weedy species, particularly mustard.

Collaborators on this project include the Lahontan Valley Conservation District and University of Nevada Cooperative Extension.

New Buildings Planned for Construction in 2008

Construction on a new shop, equipment cleaning pad, fueling station, chemical storage building, and equipment storage shed is set to begin in the spring of 2008. An historic barn (*shown right*) is currently being used to store equipment.

A cultural resources inventory contract has also been awarded to document structures that will be impacted by building construction. A cultural resources inventory is scheduled for completion in early February, after which construction on the new buildings will begin.

Essential Farm Equipment Acquired

The last piece of farm equipment deemed a necessity for the Great Basin PMC, a small plot combine, was delivered in January 2008.

The Great Basin PMC now has all of the necessary equipment required to maintain the farm and establish study plots at the PMC and off-center.

Equipment at the PMC includes tractors, trailers, trucks, disc, box scraper, cultivators, vegetable drill, no-till drill, border disc, seedling transplanter, flail-vac, sprayers, plow, hay rake, baler, rotary disc mower, and combine.

Revegetating Abandoned Cropland

To improve irrigation water efficiency, many farmers are converting to pivot irrigation systems. When pivots are installed on agricultural fields, there are frequently corner areas that cannot be irrigated by the sprinkler and which are, therefore, abandoned. These areas then become susceptible to wind erosion and weed establishment.

In the fall of 2007, a project was established to study revegetation of abandoned cropland in Fish Lake Valley, Nev. The objective is to study species and technology that can be used to revegetate the abandoned cropland areas and thereby reduce wind erosion and encroachment of weedy species.

Collaborators on this project include the Esmeralda Conservation District, Hillside Hay Company, and NRCS Yerington Field Office.

Poplars Raised for Biofuel

In June 2006, 58 poplar varieties were planted to study their potential as a biofuel source. Due to high mortality in 2006, the poplars were re-planted in May 2007. Mortality rates were high again in 2007, and it appears that soil salinity at the planting site may exceed the tolerance of many of the poplar varieties.

However, some of the poplar varieties were selected specifically for salt tolerance, so maintenance and monitoring of the planting will continue to determine the performance of the salt tolerant varieties.

Collaborators on this project include the University of Nevada Cooperative Extension and GreenWood Resources.

Herbig Park Demonstration Planting Update

In the fall of 2006, a demonstration planting was put in at Herbig Park in Gardnerville, Nev. The objective of the project was to create a site where the public could observe and learn about plant species that could be used to address conservation concerns.

Due to low precipitation during the growing season, there was very little plant establishment. The most successful species, as determined by the number of individuals in a plot (1100 square feet), were 'Nezpar' Indian Ricegrass (approximately 80 individuals), 'CD II' Crested Wheatgrass (approximately 70 individuals), and 'Vavilov' Siberian Wheatgrass (approximately 50 individuals). 'Vavilov' Siberian Wheatgrass had the greatest seed production with approximately 50% of the individuals producing seed. All other species had less than 10% of individuals producing seed.

Collaborators on this project include the University of Nevada Cooperative Extension, Carson Valley Conservation District, and Douglas County Parks and Recreation Department.