

Project 08S239
Annual Report – December 2005
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BRYCE CANYON NATIONAL PARK
COOPERATIVE AGREEMENT

**Project 08S239
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INTRODUCTION - Upper Colorado Environmental Plant Center (UCEPC) signed an Interagency Agreement with Bryce Canyon National Park, USDA Natural Resources Conservation Service, and NPS Denver Service Center in January 2004. The agreement called for the production of two materials in 2004; nodding brome, *Bromus anomalus*, and slender wheatgrass, *Elymus trachycaulus*. Only slender wheatgrass was produced in 2005, as altered with Amendment 1. It will be produced again in 2006. A second amendment, also signed in 2005, calls for the production of 7,000 grass seedlings and 100 shrub seedlings for additional revegetation needs.

OBJECTIVE - The intent of the amendments to the agreement is for UCEPC to produce seed and plants of native, indigenous species for revegetation purposes on disturbances within Bryce Canyon National Park through 2007.

ACTIVITIES – For the first time in six years, our area experienced average or above average precipitation. Bryce slender wheatgrass produced a significant amount of seed in 2005. We estimated 700 pounds of harvested product. However, for reasons unknown, a substantial amount of water was found in one of the two bins in which the seed was stored. One bin was nearly a total loss. The second bin was fine, producing 189 pounds of clean seed from the 0.5 acre planted August 12, 1998, 0.8 of an acre that was planted September 5, 2000, and 1.2 acres that were planted August 13, 2004. After harvest, the 0.5 acre planting from 1998 was removed. Also removed was the 0.5 acre nodding brome field. Russ Haas, National Plant Materials Technical Liaison, viewed the fields in early July and concurred with UCEPC that the nodding brome field should be removed prior to harvest. The one half-acre nodding brome field was planted August 29, 2001, and produced one year longer than was expected.

One seed shipment, 103 bulk pounds (60 PLS) of slender wheatgrass, was sent to Bryce Canyon on August 4, 2005. The new 1.2 acres of slender wheatgrass and the 0.8 acre planted in 2000 will be in production for 2006. In addition, 7,000 grass plugs and 100 native shrubs will be produced in 2006.

PLANT PRODUCTION – Seed of seven species was received by UCEPC for cleaning and propagation as called for in Amendment 2. The table below identifies the amount of seed received and cleaned seed quantities by species.

Species	Collected Weight	Clean Weight
Antelope Bitterbrush	34.4 g	19 g
Black Sagebrush	104.0 g	7 g
Indian Ricegrass	169.7 g	54 g
Long Flowered Rabbitbrush	1.1 g	Too small of quantity to clean
Needle and Thread	576.9 g	238 g
Parry's Rabbitbrush	4.4 g	< 1 g
Yellow Rabbitbrush	0.9 g	Too small of quantity to clean

**Project 08S239
Annual Report 2005**

clean

The targeted production quantities for the above species were identified by the amendment. Slender wheatgrass, which is being field produced, will constitute the largest production effort at 3,500 plugs. Needle and thread as well as Indian ricegrass will each be produced at half the amount of slender wheatgrass at 1,750 each for a total of 7,000 grass plugs. Approximately 40 black sage, 40 antelope bitterbrush, and 20 rabbitbrush plants were identified for large container production. The shrub production may be altered depending on germination of the three separate rabbitbrush species.

SEED PRODUCTION -The following quantities of seed have been produced for Bryce Canyon:

Species	Scientific Name	Seed Production		Fiscal Year
Nodding brome	Bromus anomalus	185 lb	49 PLS	1999
		34 lb	9 PLS	2000
		Field plowed		2001
		2.4 lb	1 PLS	2002
		50 lb	33 PLS	2003
		138 lb	83 PLS	2004
		Field plowed		2005
Slender wheatgrass	Elymus trachycaulus	30.5 lb	28 PLS	1999
		103 lb	78 PLS	2000
		246 lb	211 PLS	2001
		149 lb	120 PLS	2002
		240 lb	213 PLS	2003
		398 lb	232 PLS	2004
		189 lb	Not available	2005

Total Seed Inventory

96 bulk pounds of nodding brome	2004 seed lot
74 bulk pounds of slender wheatgrass	2004 seed lot
189 bulk pounds of slender wheatgrass	2005 seed lot

DISCUSSION – Two amendments between UCEPC and Bryce Canyon are directing activities for field production of slender wheatgrass through 2006 and containerized production of three grass species, and a minimum of three shrub species for park uses. The grass plugs will be delivered in 2006 with the shrub containers targeted for delivery in 2007.