

Seed Bulking for Mega-fire and Invasive Species Restoration on the San Bernardino National Forest

R5 2008 Accomplishments

This project was designed to reduce sedimentation into Big Bear Lake, a State 303 (d) impaired water body and to increase amounts of native plant material. This material will become available for Burned Area Emergency Response and Suppression Repair activities to restore burned lands and reduce the introduction and spread of noxious weeds. Two species of grass seed (*Bromus carinatus* and *Elymus elymoides*) were collected on the San Bernardino National Forest and planted on ski slopes managed under special use permit and in raised beds located at two USFS Ranger Stations.

In the spring of 2008, partners and volunteers were coordinated to begin the preparation of seed beds and to collect seed. The San Bernardino National Forest Association (SBNFA) hosted several volunteer events to repair, weed, and till the existing seed beds at the Big Bear and Sky Forest Ranger Stations. Extensive weeding and seed collection was performed with over 30 volunteers and county crews contributing over 300 hours of labor. Big Bear Mountain Ski Resort contributed additional labor in locating sites to be seeded, developing irrigation systems and providing straw mulch.

A Participating Agreement with the Rancho Santa Ana Botanical Garden (RSABG) was completed to train USFS, Children's Forest staff and volunteers in the seed collection protocol. This included a hands on demonstration out in the Forest to collect, voucher, map and clean seed. The Agreement also included collection, cleaning and storage of cleaned, viable *Bromus carinatus* and *Elymus glaucus* seed for two years. For the ski areas and seed beds, *Bromus carinatus* seed was collected from 4 locations ranging from 7,560-7,800 feet. *Elymus elymoides* seed was collected from two locations ranging from 7,560-7,800 feet. For the RSABG seed storage portion of this project, *Bromus carinatus* seed was collected from six locations between 5,600-8,000 feet. *Elymus glaucus* seed was collected from 6 locations between 5,700- 8,000 feet. A seed collection form, herbarium voucher and a GPS map location was completed for all collection sites.

In September of 2008, *Elymus elymoides* and *Bromus carinatus* was seeded in a 4 acre plot on the ski resort slopes at 7,600 feet elevation. *Elymus elymoides* seed was buried in two inch deep trenches (30 feet long) and 12 inches apart over 2 acres. *Bromus carinatus* was hand broadcast over a 2 acre parcel. Both parcels were then mulched by hand with 3 inches of straw. Irrigation immediately followed and will continue daily until winter moisture occurs. Additional seed is being planted at the Sky Forest and Big Bear Ranger Station seed beds. Monitoring, care and maintenance of plantings will occur, seed collection is expected in years 1-3. In addition, restoration biologists assisted with the installation of forest reforestation refrigeration units; these units will be utilized for storing bare root trees and bulked seed.



Figure 1. Children's Forest youth maintaining and prepping the raised beds at Sky Forest Ranger Station.

Year Awarded: Initial award in March 2008

Project completion: Fall of 2008

Report number: 2

Expenditures (through 9/30/2008):

Total funding \$30,500;

Total expenditures \$30,500;

\$0 remaining

Partners/Contractors/Coop: San Bernardino National Forest Association Children's Forest, Rancho Santa Ana Botanical Garden and the Big Bear Mountain Ski Resort

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