

Evaluation and Development of Plant Materials for Rehabilitation of the Mojave Desert

The recent increase in the prevalence of invasive annual grasses and wildfires has radically altered the structure and composition of shrubland communities unique to the Mojave Desert. Invasive species such as red brome (*Bromus madritensis* ssp. *rubens*), cheatgrass (*Bromus tectorum*), and Mediterranean grass (*Schismus* spp.) respond rapidly to soil nutrients that are released by wildfire thus allowing them to quickly invade and have no known native plant competitors to suppress them in burned habitats. Fires also alter the abundance and composition of seed reserves stored in surface soils that are important to native plant re-establishment following disturbance. The resulting dominance of invasive species – reinforced by reburning and reinvasion – completes the conversion from shrubland to annual grassland, into which native species are unlikely to naturally re-establish. Such wholesale land conversion poses novel challenges to native species that are adjusting to their post-fire habitats.

Therefore, a project was initiated (7/15/2011) by the Forage and Range Research Laboratory, the Utah Trust Lands Administration, and the Southern Utah State University to:

1. Evaluation potential of forage kochia to revegetate burned areas and as a greenstrip to protect native habitat.
2. Collect and evaluate native plants for their ability to establish and persist following disturbance of the Mojave Desert.
3. Evaluate and compare genetic diversity among collected and cultivated ecotypes of native grasses.
4. Determine whether native plants have breeding potential for plant improvement and, if so, develop appropriate breeding strategies and plant populations.



Mohave Project initiation on July 15, 2011 Left to right: Blair Waldron (FRRL), Jim Bounds (SUSU), Chad Reid (SUSU), Ron Torgerson (Utah Trust Lands), and Rob Smith (FRRL).



Site of the project which is burned blackbrush-Joshua tree habitat on the Beaver Dam Slope in extreme southwestern Utah.