



BLM Colorado State Office SOS team searches their collection records in the field to target and prioritize species for collection.

# SEEDS of SUCCESS

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## *Using Technology to Help Build a National Collection of Native Seed*

The first Seeds of Success collection was made on the sandy foothills of sagebrush steppe in the northern Great Basin in 2000. Since that day, Seeds of Success (SOS) has seen a dramatic growth in the number of collections. Currently, the National Collection includes 9,000 collections (of over 2,200 taxa). Specialized software linked to a national data management system has made managing these collections much more efficient and accurate.

In light of climate change, coordinated native seed banking efforts are increasingly important for maintaining and restoring native plant communities that are essential to the ecological services that humans and wildlife depend on. Wildland seed collection programs, such as SOS, are conserving plant diversity in seed banks for native plant materials development,

research, and habitat restoration before it is lost.

SOS is the national native seed collection program, led by the Bureau of Land Management (BLM) under the umbrella of the congressionally mandated Native Plant Materials Development Program (NPMDP). The mission of SOS is to collect wildland native seed for the development of genetically appropriate native plant materials for restoration, as the current market does not supply the diversity and quantity of native plant materials needed. SOS is a partnership of federal government agencies and non-federal organizations working together to collect, conserve, and develop native seed. A high level of coordination and collaboration among partners is necessary for this program to be successful.

### Piloting Electronic Field Notes

The efforts of sixty-five collecting teams across the US, based at numerous BLM offices and participating botanic gardens, are the foundation of SOS. Each collecting team follows the SOS Technical Protocol and uses standardized SOS field data forms. Collectors record and capture detailed collection site information associated with each collection in the SOS National Collection. In 2007, SOS and *BG-BASE*, Inc. developed the SOS Electronic Field Notes Pilot Project to reduce the amount of duplicative data entry occurring. The Project's goal was to evaluate the possibility of SOS collecting teams entering their collection data into their own copy of *BG-BASE* and then electronically transferring the data to the SOS National Coordinating Office for evaluation and incorporation into the national database.

The project began with an evaluation of collection data being captured by SOS collecting teams. From this evaluation *BG-BASE*, Inc. developed specialized SOS Collectors' Software, which allows SOS collecting teams to capture all associated collection data electronically and e-mail it to the SOS National Coordinating Office in Washington, DC.

In early 2007, customized field laptops were loaded with the specialized SOS Collectors' Software developed by *BG-BASE*, Inc. and a training class was held at Desert Botanical Garden. Seven SOS collecting team leaders from across the country learned how to enter collection information into their laptops and export data for transfer to the SOS National Coordinating Office. One of the SOS collecting teams that participated in the pilot training course was the BLM's Colorado State Office in Denver, Colorado.

The BLM Colorado State Office has coordinated over five hundred wildland native seed collections from very diverse habitats, ranging from sub-alpine forests and sand dunes to shale cliffs. A large

amount of data including location, associated species, population size, number of plants sampled, and taxonomic details is recorded for each collection and is then integrated into the SOS National Database. The SOS Collectors' *BG-BASE* technology has greatly reduced the amount of duplicative data entry.

The field laptops give collecting teams flexibility to enter this collection information and carry a comprehensive inventory of past collection records with them in the field. Current research suggests that to develop genetically diverse native plant materials from wildland native seed collections, at least twenty populations from across the range of a species need to be sampled. Having previous collections' data helps teams target the needed number of collections.

The SOS-coordinated multiple population sampling approach has been put to use in the collection of over 3,200 taxa, including Sandberg's bluegrass (*Poa secunda*), which has been a focus of Colorado's collecting efforts on the Uncompahgre Plateau in western

Colorado. As part of NPMDP, a partnership formed between BLM and the Uncompahgre Plateau Project, which resulted in an estimated nine thousand pounds of Sandberg's bluegrass seed that will be available for purchase in late 2009. The source seed for this project was collected on the Uncompahgre Plateau by the SOS collecting team and will supply agencies with genetically appropriate seed for use in restoration.

As the 2009 collecting season comes to a close, SOS is gearing up for even more activity in 2010. Next up: ten thousand collections and a new mapping system!

**For more information about Seeds of Success contact:**

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## Need for Seed

In Colorado the need for native plant materials was highlighted by the results of a survey run by the Uncompahgre Plateau Project: 75 percent of those surveyed cited availability as the main limiting factor to purchasing native seed for landscape restoration projects.

