

# Mojave Desert Native Plant Program Annual Report FY2018



## **Introduction**

The Mojave Desert Native Plant Program (MDNPP) continued to develop and expand its reach during FY18. Development of empiric seed transfer zones for *Plantago ovata* is nearing completion, and genetics work for *Chylismia brevipes* seed transfer zones is well underway. Tissue collection for *Ambrosia dumosa* seed transfer zone development is also nearing completion. The new Climate Distance Mapper Tool is now available, and provides a user-friendly way to locate appropriate seed source locations for restoration projects.

Despite a very dry year, a respectable number of SOS and operational seed collections were made, providing seed for upcoming seed increase projects through agreements and contracts. One of these is a new agreement through BIA with the Colorado River Indian Tribes, pending Tribal Council approval.

The MDNPP Symposium in November 2017 shared a broad range of information with an enthusiastic audience. Several other presentations at conferences spread information about the MDNPP and its support of native plant materials development and restoration.

## **SOS Conservation Seed Collections**

- Total of 53 collections made from 43 taxa

## **Operational Seed Collections**

- Total of 17 collections made from 14 taxa

## **Tissue Collections for Genetic/STZ Research**

- Total of 9 populations of *Chylismia brevipes* sampled
- Total of 10 population of *Ambrosia dumosa* sampled, plus 1 sample each from *Ambrosia x platyspina* and *Ambrosia salsola*

## **Native Plant Materials Produced**

A total of 2,247 container plants of 24 species were produced, using operational seed collections, as follows:

- 17 *Acmispon glaber*
- 64 *Bahiopsis parishii*
- 40 *Bebbia juncea*
- 688 *Chilopsis linearis*
- 32 *Dudleya saxosa*
- 54 *Encelia actoni*
- 49 *Ericameria linearifolia*
- 63 *Ericameria teretifolia*
- 46 *Eriogonum elongatum*
- 104 *Eriogonum fasciculatum*
- 63 *Eriogonum inflatum*
- 18 *Eriogonum plumatella*
- 50 *Grayia spinosa*
- 100 *Krascheninnikovia lanata*
- 100 *Larrea tridentata*

- 61 *Lythrum californicum*
- 7 *Peritoma arborea*
- 9 *Pluchea sericea*
- 91 *Prosopis pubescens*
- 416 *Prosopis glandulosa*
- 30 *Salvia vaseyi*
- 43 *Senecio flaccidus*
- 100 *Sphaeralcea ambigua*
- 2 *Thamnosma montana*

### Tools for Managers Developed

- **Climate Distance Mapper Tool**, developed by USGS, Henderson Field Station, is now available to BLM managers and field office staff, and to the public, at: [https://usgs-werc-shinytools.shinyapps.io/Climate\\_Distance\\_Mapper/](https://usgs-werc-shinytools.shinyapps.io/Climate_Distance_Mapper/).

### Agreements

#### 1. Interagency Continuing

- **USGS, Henderson Field Station** - \$383,615 added to existing agreement to fully fund common garden research with priority desert tortoise habitat restoration species through FY21. They have also prepared a draft article for publication on priority Mojave native plant species for restoration, which will support the seed menus they are developing for restoration seed mixes. Three new weather stations were purchased, and all 10 common garden research sites now have weather stations.

#### 2. Interagency New

- **BIA and the Colorado River Indian Tribes** - \$35,000 for seed increase grow-outs of priority Mojave native plant species. Implementation is pending Tribal Council approval, which is in progress. Operational seed collections for *Sphaeralcea ambigua*, *Eriogonum fasciculatum*, *Nicotiana attenuata*, and *Nicotiana obtusifolia* made in 2018 will provide starter seed.

#### 3. Financial Assistance Continuing

- **Rancho Santa Ana Botanic Gardens** – No Cost Extension awarded on existing agreement to continue SOS seed collections and genetics research tissue collections, and to finish genetics work on *Plantago ovata*. Ongoing genetics work for *Chylismia brevipes* and *Ambrosia dumosa* with continue under this agreement until funding runs out, then will be funded through the Sole Source contract awarded in FY18.
- **Victor Valley College** – Modified with an additional \$25,000 in FY18. Through three student Capstone research projects a total of 91 screwbean mesquite, 416 honey mesquite, and 688 desert willow plants were produced for 2018 BLM restoration projects at Dos Palmas Preserve and Afton Canyon NCA. An additional approximately 450 plants total for Indian ricegrass, desert globemallow, spiny hopsage, creosote, California buckwheat, winterfat, and

narrowleaf goldenbush are being retained in the nursery for an additional year's growth prior to restoration planting in the Ridgecrest Field Office. Students presented posters of their Capstone projects at the 2018 California Society for Restoration conference.

- **The Living Desert** – A total of 630 plants, from 17 different species, were grown for planting in a pollinator garden at the BLM Big Morongo Canyon Preserve, exceeding the expectation of 500 plants. The Friends of Big Morongo Canyon continued seed collection through 2018 and provided additional seed to the Living Desert. Additional plants are now in production for planting in 2019.
- **The Arboretum at Flagstaff** – An additional \$50,000 of MDNPP funds added to this CPNPP agreement for Mojave Desert SOS and research tissue collections in the AZ and UT portions of the Mojave Ecoregion.

### **New Contracts**

- **Genetics Research** – Sole Source for \$209,818.99 awarded to Rancho Santa Ana Botanic Gardens to complete genetics research with *Chylismia brevipes* and *Ambrosia dumosa* for development of seed transfer zones for these high priority restoration species. This work will continue under the existing FAA until agreement funding runs out, then will switch over to contract funding.
- **Seed Technicians** – Task order under the new National Seed Technician IDIQ contract, administered through the NOC, for a 2-year seed collection crew in the California portion of the Mojave Desert. Contract awarded to Rancho Santa Ana Botanic Gardens. Funding primarily through the WO, but \$75,000 contributed by MDNPP.
- **Pilot Annual Seed Increase Project** – A purchase request of \$75,000 was submitted for a pilot native annual seed increase project to grow forage species for desert tortoise. Contracting personnel failed to award a contract in FY17, but an award is anticipated in FY18.

### **National Park Service Research Permits**

Research permits for seed and tissue collections supporting seed transfer zone research were continued or initiated for these National Park Service units:

- Mojave National Preserve – continuing
- Death Valley National Park – continuing
- Lake Mead National Recreation Area – new
- Joshua Tree National Park - new

### **Meeting Presentations**

- Natural Areas Conference – October 10-12, 2017, Fort Collins, CO

- California Native Plant Society-Mojave Section – October 29, 2018, Yucca Valley, CA
- California Invasive Plant Council – October 24-26, 2017, Palm Springs, CO
- Society for Ecological Restoration-Southwest – December 6-8, 2017, Albuquerque, NM
- California Native Plant Society, February 1-2, 2018, Los Angeles, CA
- Pre-Fire Season Meeting, California Desert District – April 4, 2018, Barstow, CA

### **Symposium**

- Mojave Desert Native Plant Symposium - November 14-16, 2017 in Barstow, CA. Over 160 attendees, including botanists, wildlife biologists, research scientists, land managers, Resource Conservation District members, nursery managers, seed producers, non-profit organizations, and students. Presentation topics included desert tortoise habitat restoration needs, common garden and genetic research for developing seed transfer zones, restoration tools for managers and restoration research, drivers of fire in the desert, nursery production of Mojave restoration plants, adaptation of commercial seed production and wildland collection to meet seed transfer zone guidance restoration needs, and restoration projects from the field. A break-out group session generated many ideas for needs and potential opportunities as the Mojave Desert Native Plant Program moves forward to meet restoration and native plant material needs. Field trips to the Afton Canyon ACEC and Camp Cady State Wildlife Area gave participants an opportunity to see examples of restoration projects along the Mojave River corridor.

### **Site Visits/Meetings**

- Zzyzx Research Station, California State University-Fullerton – potential base for training (e.g. SOS) and/or Mojave Desert research
- Chemehuevi Tribe cultural director and farm director meeting – potential native seed production
- Colorado River Indian Tribes/Ahakhav Preserve Nursery – potential native seed and container plant production
- University of Arizona Cooperative Extension, Parker, AZ – potential demonstration garden for native seed increase
- Meeting with Oli Bachie, University of California Division of Agriculture and Natural Resources – contact for potential growers in the Imperial Valley

### **Support to Other Programs**

- USFWS Desert Tortoise Recovery Implementation Teams (RITs) – participation in RIT meetings to share information on Mojave Desert native plant materials for desert tortoise habitat restoration
- BLM Desert Tortoise Working Group – participation in meetings and conference calls
- East Mojave Landscape Conservation Design Project – participation on the Coordinating Team, and in Biodiversity and Connectivity subgroups