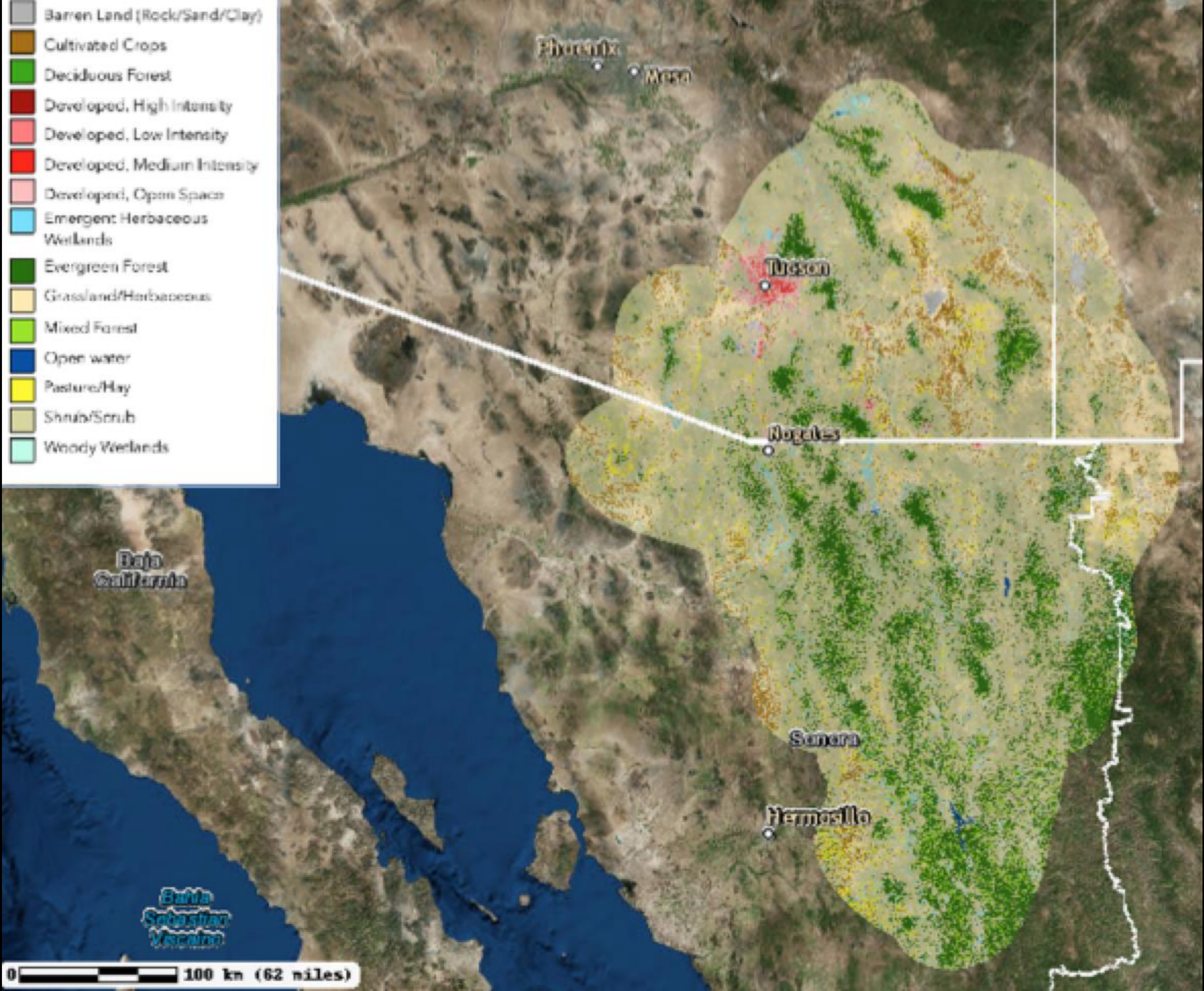


# Madrean Archipelago Plant Propagation (MAPP) Initiative: A Strategy in Regional Plant Material Availability and Resiliency

Allegra Mount, Seed Lab Manager  
Borderlands Restoration L3C

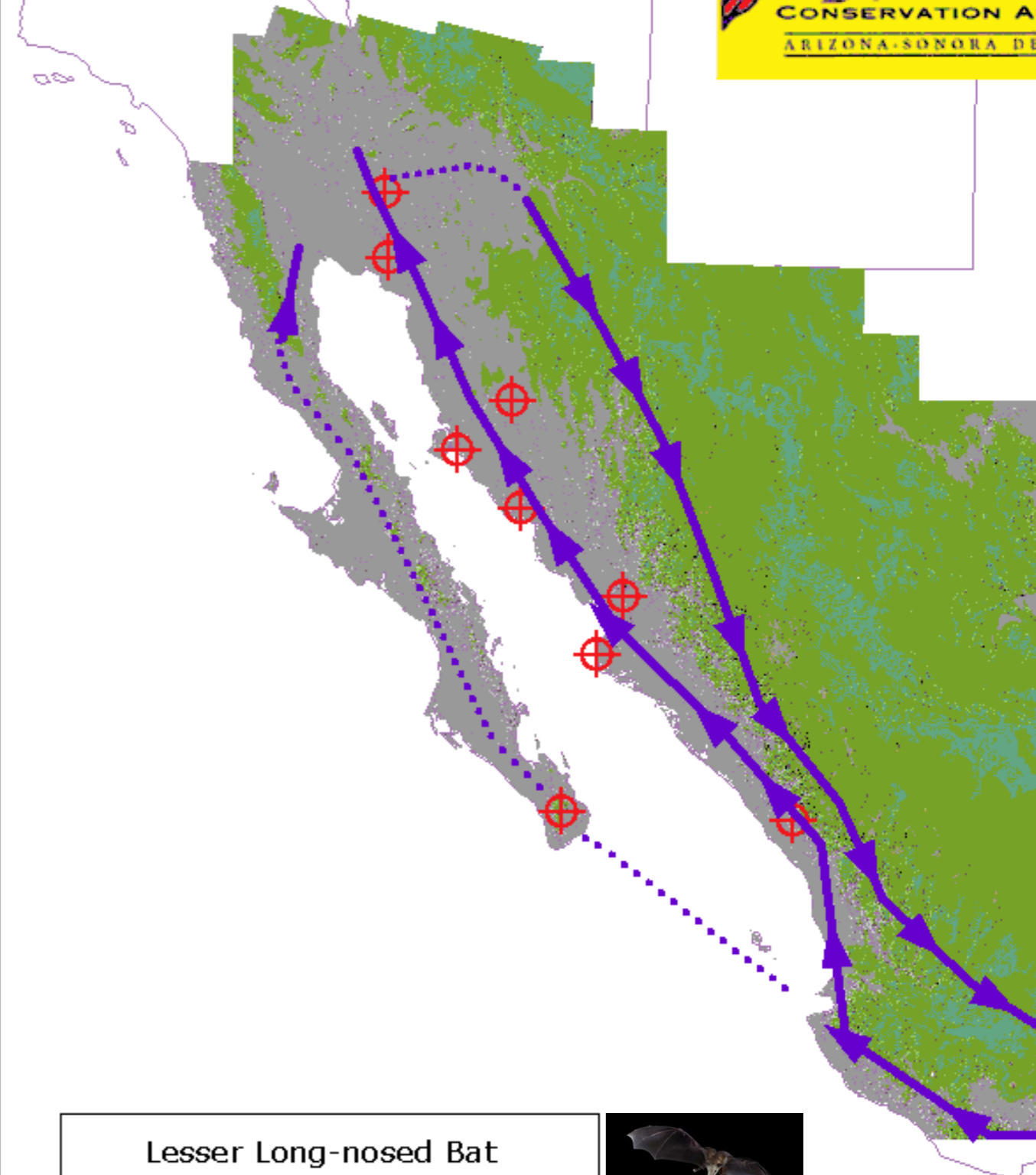
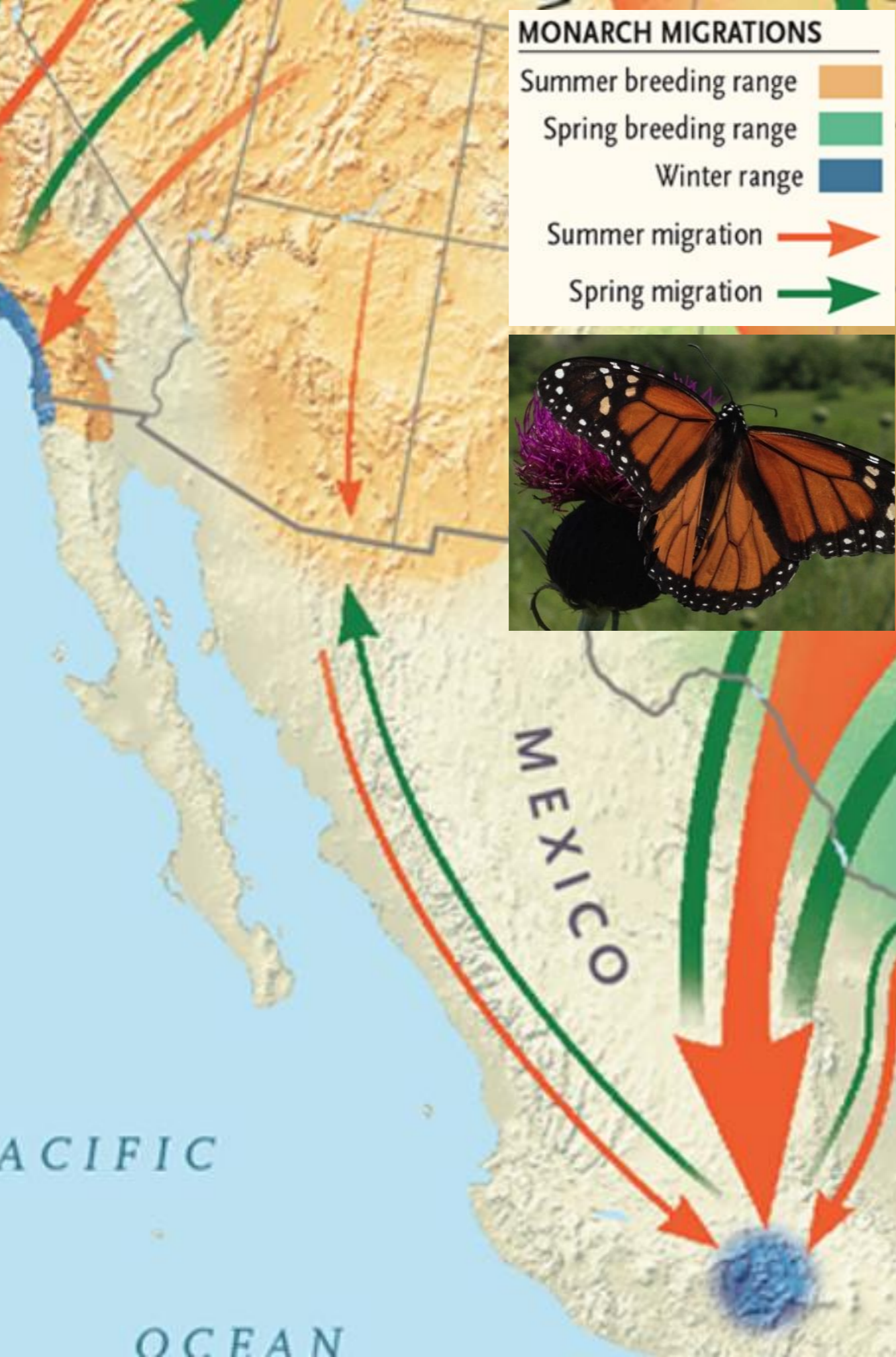


-  Barren Land (Rock/Sand/Clay)
-  Cultivated Crops
-  Deciduous Forest
-  Developed, High Intensity
-  Developed, Low Intensity
-  Developed, Medium Intensity
-  Developed, Open Space
-  Emergent Herbaceous Wetlands
-  Evergreen Forest
-  Grassland/Herbaceous
-  Mixed Forest
-  Open water
-  Pasture/Hay
-  Shrub/Scrub
-  Woody Wetlands



0 100 km (62 miles)



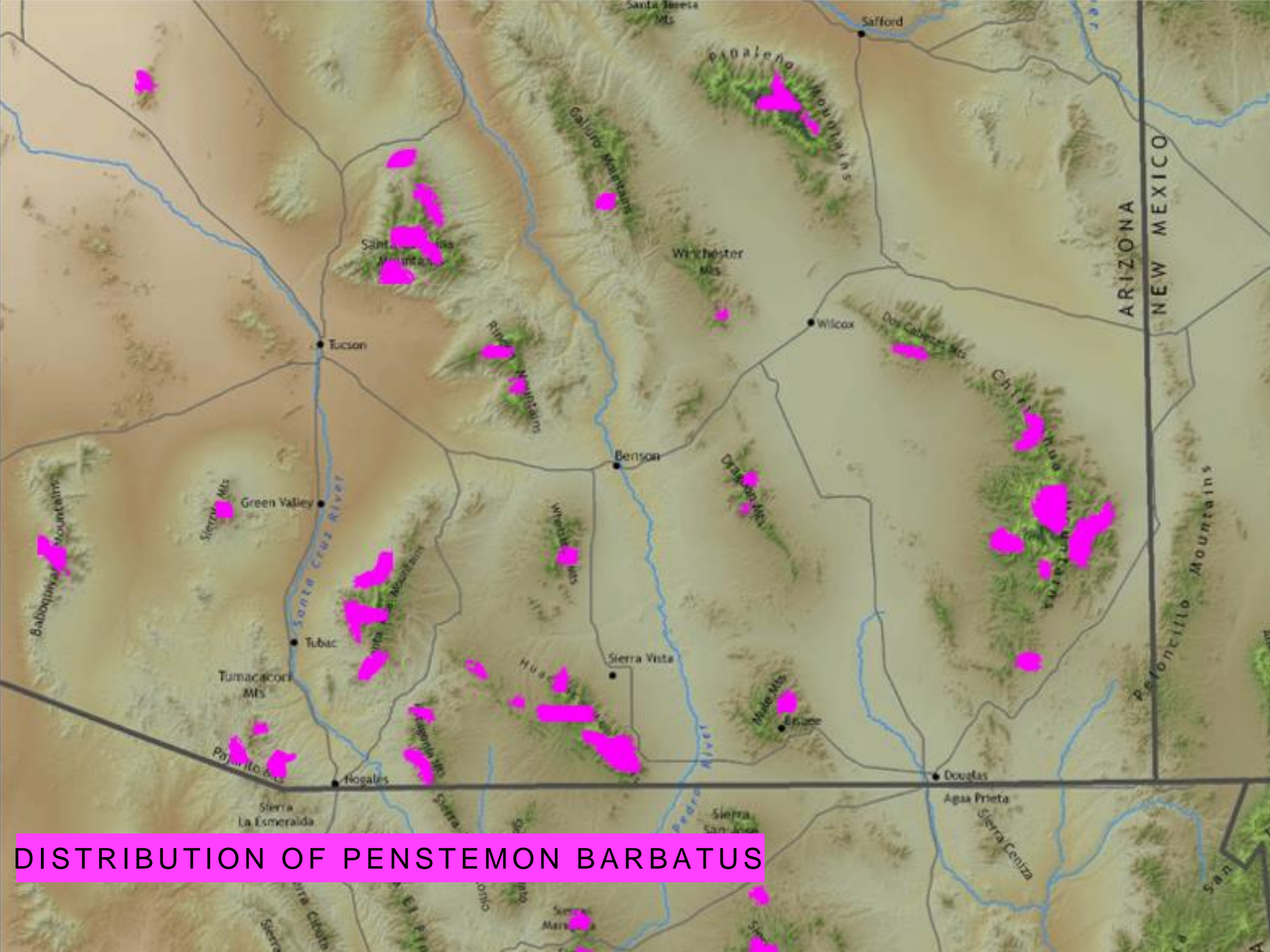


Lesser Long-nosed Bat  
Migratory Routes  
with Digital Elevation Model



Known Maternity Roosts North of Chamela  
Unknown/Estimated Routes  
Lesser Long-nosed Bat Documented Routes





DISTRIBUTION OF PENSTEMON BARBATUS



# BORDERLANDS RESTORATION

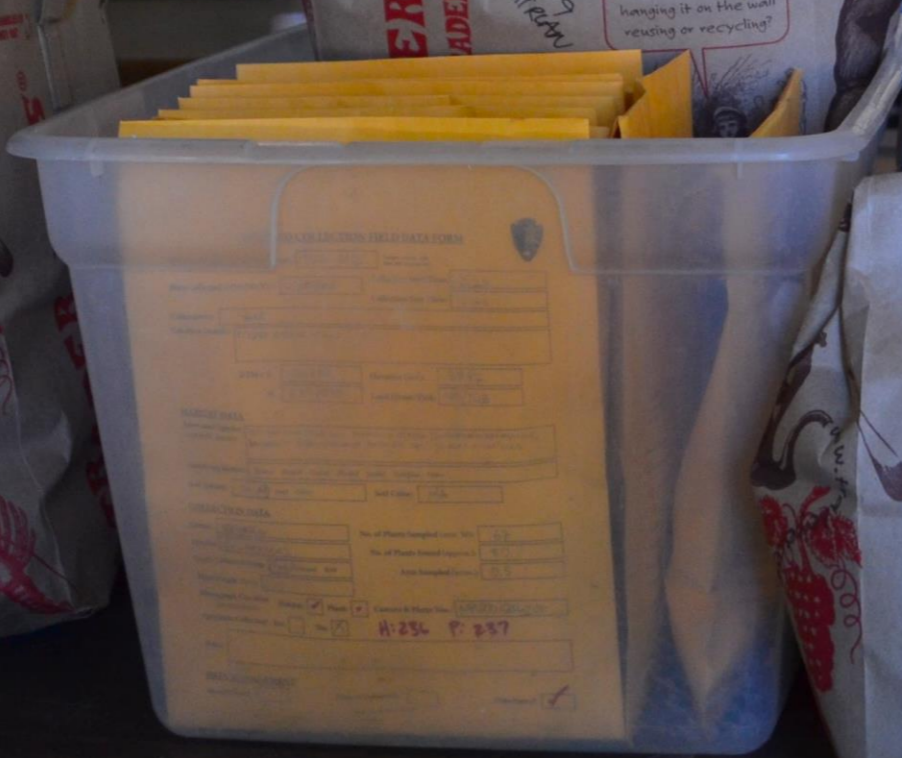








EXIT



**NPS SEED COLLECTION FIELD DATA FORM**

SNIS Seed Collection Ref. Number: 11021-003

Date Collected (MM/DD/YYYY): 11/02/2014 Collection Start Time: 12:45

Collector(s): AGS, JTD, TSW Collection Stop Time: 12:45

Location Details: 11021-003-001

UTM+ E: 406284 Elevation (m): 2942  
 N: 5848554 Land Owner/Park: NPS/11021

**HABITAT DATA**  
 Associated Species (Scientific Name): ...

**COLLECTION DATA**  
 Genus: ... No. of Plants Sampled (incl. SN): ...  
 Species: ... No. of Plants Found (approx.): ...  
 Seeds Collected From: ... Area Sampled (m<sup>2</sup>): ...  
 Plant Height (m): ...  
 Photograph Checklist:  Habit  Plant  Camera & Photo No.: ...  
 Specimens Collected?  Yes  No ...

**DATA MANAGEMENT**  
 Seed Entered?  Photos Uploaded?  Data Entry?

**NPS SEED COLLECTION FIELD DATA FORM**

SNIS Seed Collection Ref. Number: 11021-010

Date Collected (MM/DD/YYYY): 11/02/2014 Collection Start Time: 12:45

Collector(s): AGS, JTD, TSW Collection Stop Time: 12:45

Location Details: 11021-010

UTM+ E: ... Elevation (m): ...  
 N: ... Land Owner/Park: ...

**HABITAT DATA**  
 Associated Species (Scientific Name): ...

**COLLECTION DATA**  
 Genus: ... No. of Plants Sampled (incl. SN): ...  
 Species: ... No. of Plants Found (approx.): ...  
 Seeds Collected From: ... Area Sampled (m<sup>2</sup>): ...  
 Plant Height (m): ...  
 Photograph Checklist:  Habit  Plant  Camera & Photo No.: ...  
 Specimens Collected?  Yes  No ...

**DATA MANAGEMENT**  
 Seed Entered?  Photos Uploaded?  Data Entry?



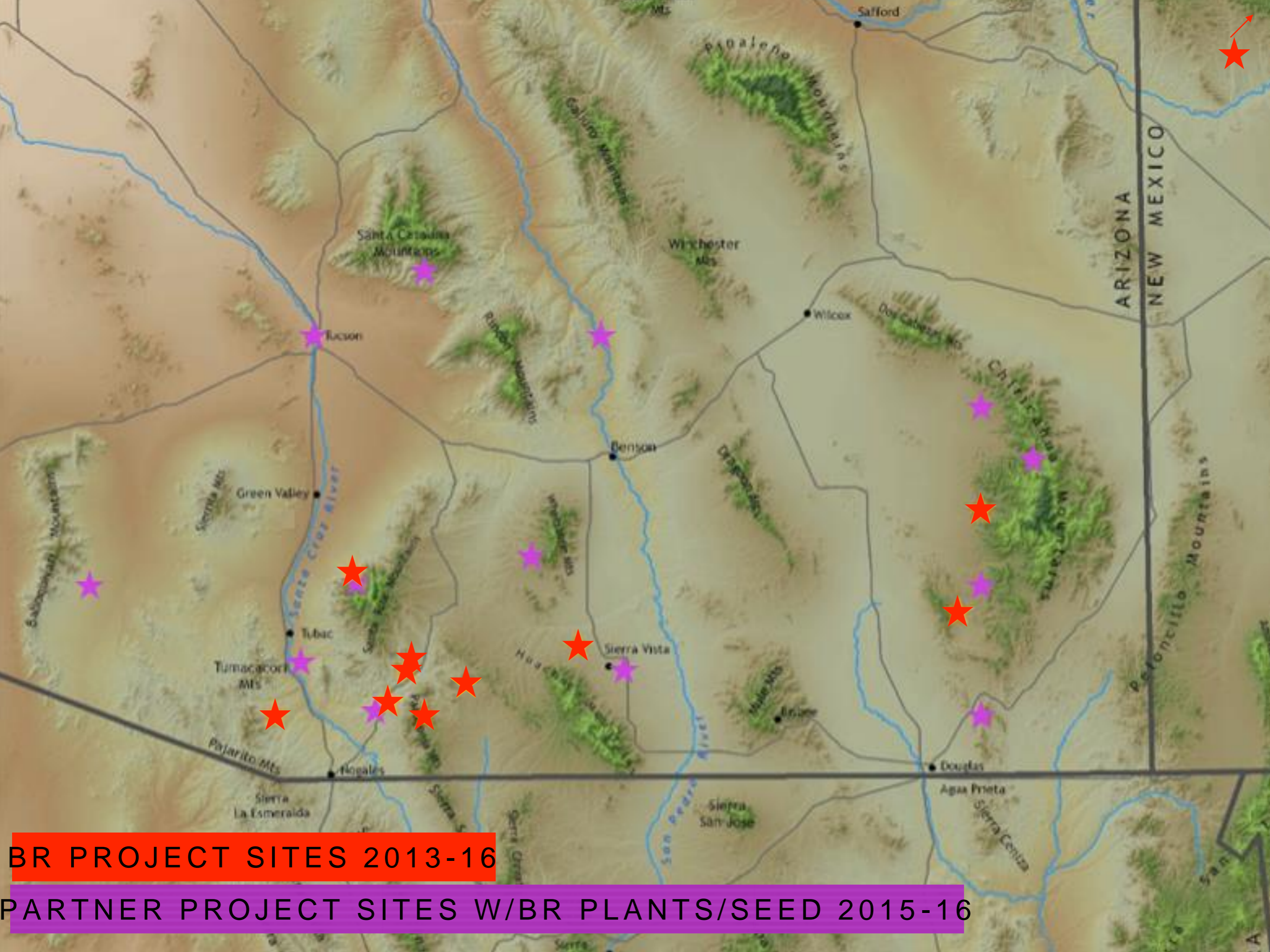


GH-2

Borderlands Restoration

Native  
Plant  
Nursery





BR PROJECT SITES 2013-16

PARTNER PROJECT SITES W/BR PLANTS/SEED 2015-16



**Seed Increase Plot - Source Info**

**Source Material Accession Number** 2014\_0258  
**Scientific Name** Clematis drummondii  
**Associated Project** NPS-BIBE  
**Propagation #(s) Used**

**Plot Identity No.**

**Source Locality** Ft Davis  
**Watershed** Upper Santa Cruz  
**Elevation** 4150  
**# Plants Sampled** 50      **Population Size** 500

**Planting**

**Date Planted** 6/21/16  
**Size of Plot** 650 ft by 1 ft  
**Planting Narrative** (date, # people, and hours)  
 P15\_0042

**Location** BR Nursery Fence Line Parallel to Emily Lane  
**#** 106

**Material Information** (size, container type, age, health, etc.)  
 From 4x10 containers with varying roots. Some were solid while others fell apart (could be varying moisture level). Plants were vining up to 2 feet but

**Ground Preparation** (tillage, cover crop, amendment, etc.)  
 The area was hoed before planting. Irrigation already present, added emitters every 6 ft.

**Mulching** (straw, weed cloth, groundcover, etc.)  
 None.

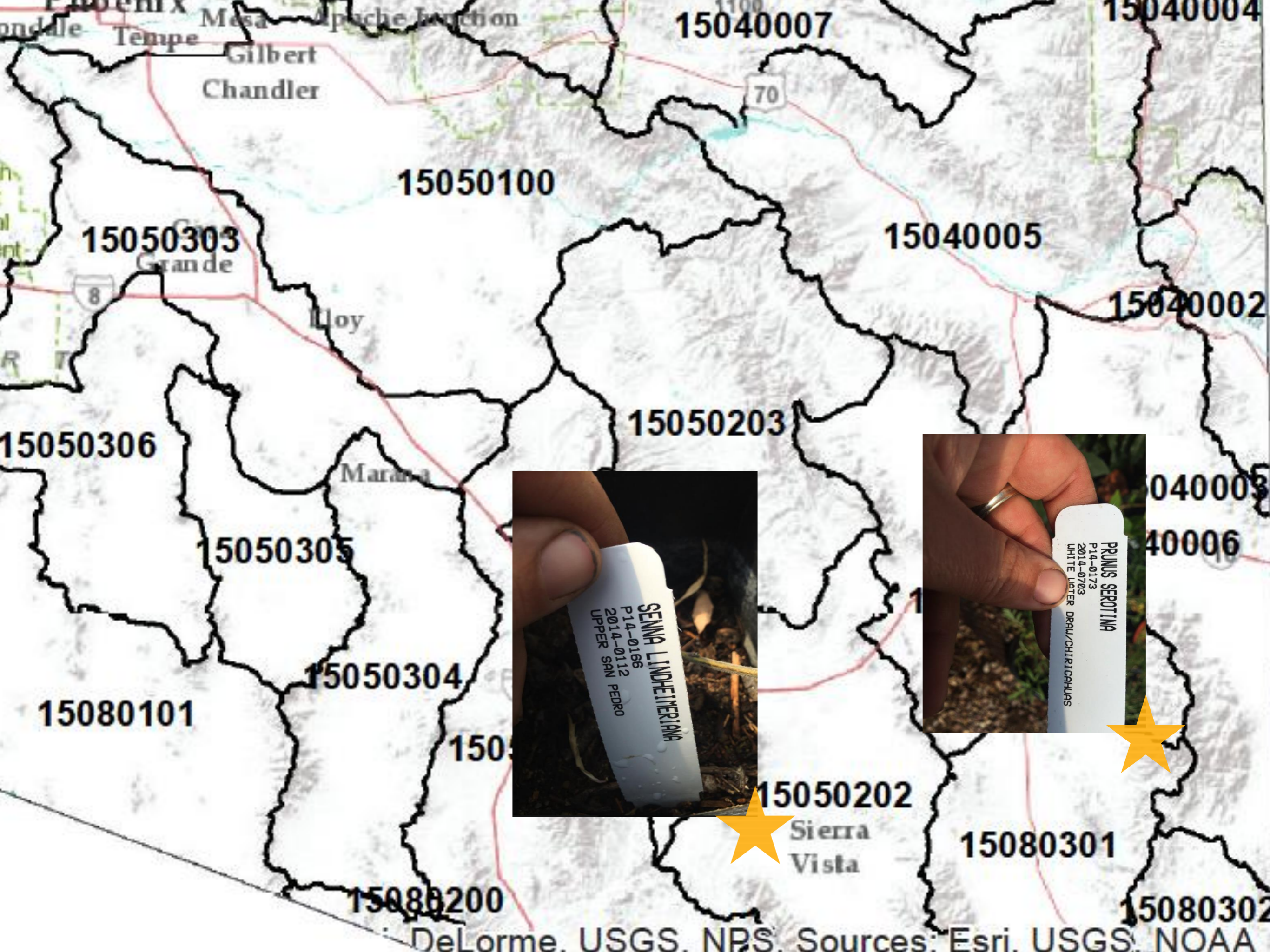
**Irrigation** (type and general schedule)  
 2.0 gph emitters. Watered daily first two weeks planted, then monsoon rains began. Only watered once a week when no rain came.

**Maintenance**

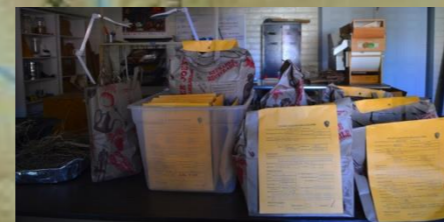
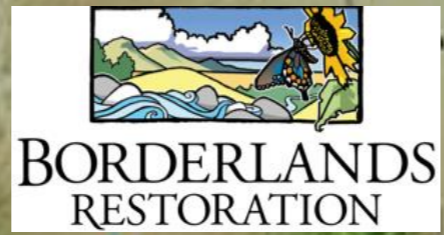
**Maintenance Narrative** (date, # people, activity, hours)  
 7/18/16: Weeded 1 foot diameter around all the plants. Took about 3 hrs.

*Example activities: weeding, irrigation repair, etc.*

**Production & Establishment**



# Madrean Archipelago Plant Propagation (MAPP) Initiative





# A Seed Strategy for the Madrean Archipelago

Prepared by: The MAPP Initiative

Steve Buckley (1,2), Allegra Mount (3), Francesca Claverie (3), Justin Johnson (4),  
David Seibert (3), Ashlee Simpson (1,2), Oliver Lysaght (3)

1. National Park Service
2. Bureau of Land Management
3. Borderlands Restoration L3C
4. Gila Watershed Partnership 501(c)3

## IMPLEMENTING THE NATIONAL SEED STRATEGY ON A REGIONAL SCALE

### Purpose

This strategy is a chronicle of the Madrean Archipelago Plant Propagation (MAPP) Initiative, and a plan for the continued development of a plant materials program in southeastern Arizona between 2017-2022. It is a product of a multi-year collaboration between the Bureau of Land

The primary purpose of this strategy is to articulate how to connect seed collection, curation, and production of plant materials to on-the-ground regional-scale restoration work in the Madrean Archipelago. The strategy will increase the ability of local, state, and federal managers to

## *Native Plant Material Users:*

- NEED is INCREASING
- Container plants and seed
- Quantity disparity: Private, NGOs and NPS vs. USFS, BLM
- Obstacle to scaling: Need is greater than funding

*\*Based on 19 responses. Private, NGO, and Agency responders represented*

**OPPORTUNITY:** Communication systems, training in ordering materials, empowerment to push for regionally sourced native materials in projects

## *Producers (public and private):*

- Difficulty in securing contracts
- Using internal resources
- Obstacles to scaling: Not enough product demand; concerned about competition with small/large producers

*\*Based on 4 responses. No seed producers represented, only retailers.*

**OPPORTUNITY:** Share resources, build needed capacity, build market & economy non-competitively, collaborate

# Seed Needs Survey



## GOAL 1

Identify seed needs, and ensure the reliable availability of genetically appropriate seed.

## GOAL 3

Develop tools that enable managers to make timely, informed seeding decisions for ecological restoration.

## GOAL 2

Identify research needs and conduct research to provide genetically appropriate seed and to improve technology for native seed production and ecosystem restoration.

## GOAL 4

Develop strategies for internal and external communication.

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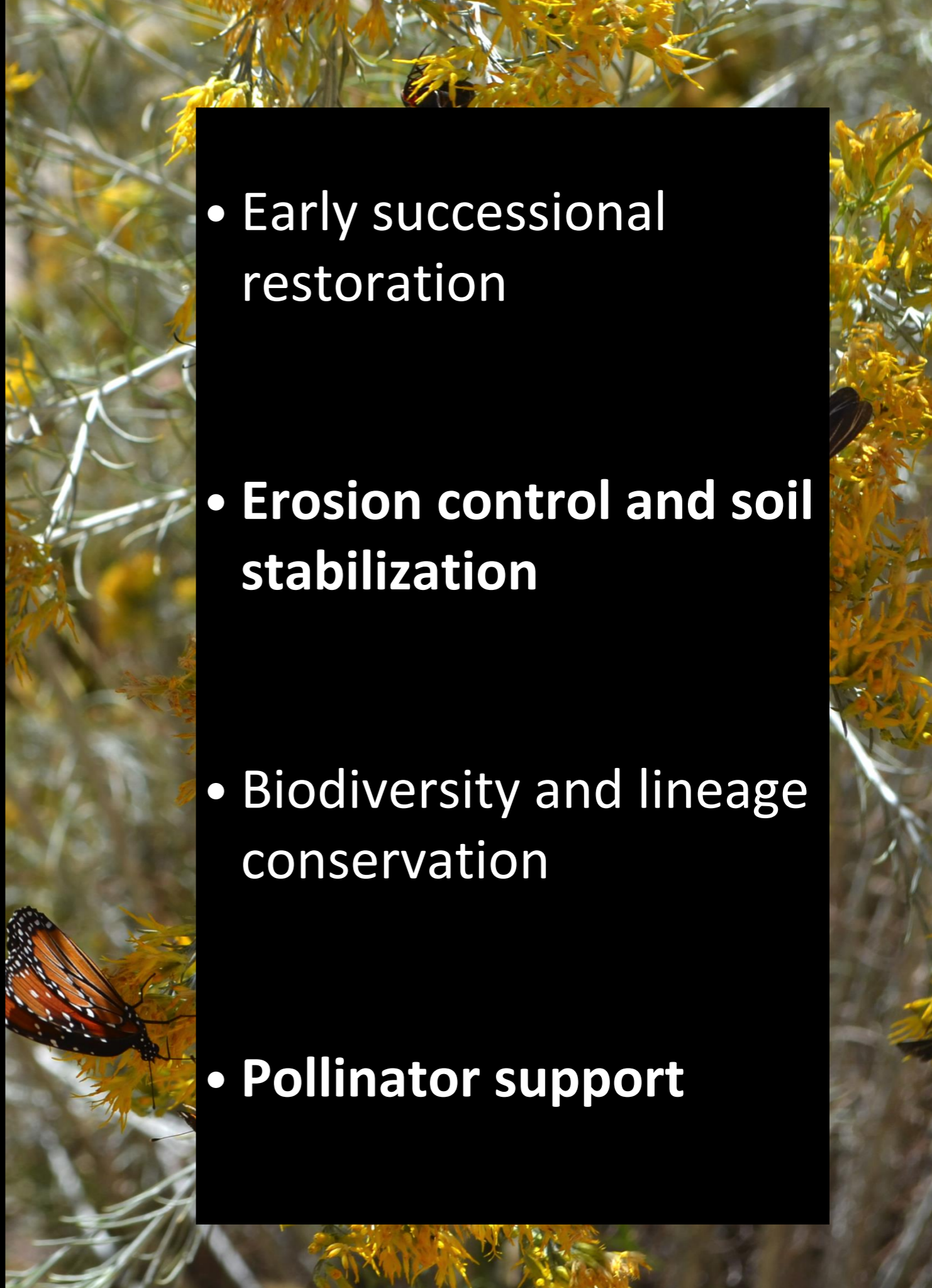
Fo



## Abbreviated Target Species List, 2016-17

*Atriplex canescens*  
*Ericameria nauseosa*  
*Isocoma tenuisecta*  
*Gossypium thurberi*  
*Agave* spp.  
*Dalea pulchra*  
*Penstemon barbatus*  
*Rhus* spp.  
*Senna hirsuta*  
*Tecoma stans*  
*Chilopsis linearis*  
*Clematis drummondii*  
*Cupressus arizonica*  
*Tithonia thurberi*  
*Asclepias* spp.  
*Sphaeralcea* spp.  
*Oenothera elata*  
*Heteropogon contortus*  
*Sporobolus* spp.  
*Schizachyrium scoparium*  
*Bouteloua* spp.  
*Hilaria mutica*  
*Muhlenbergia emersleyi*  
*Muhlenbergia rigens*  
*Tripsacum lanceolatum*

- Early successional restoration
- Erosion control and soil stabilization
- Biodiversity and lineage conservation
- Pollinator support



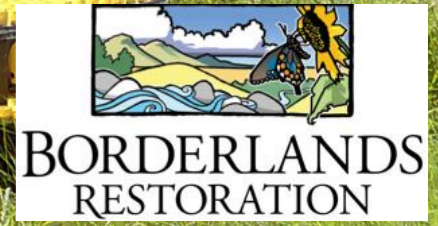


What is... A Proposed Strategy for Wild Seed Collection in the... of Southern Arizona

Seed Inventory  
1. DAY 3-6  
2. LABEL & BAG  
3. FREEZE







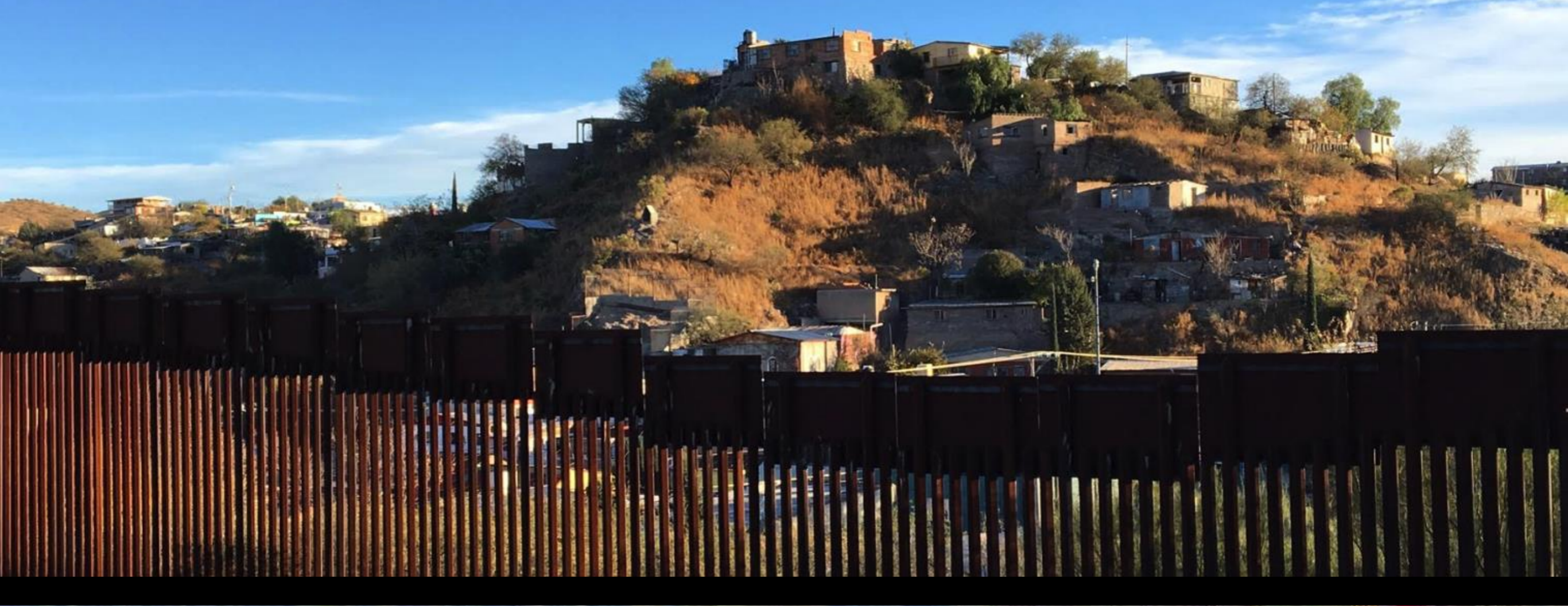




**BORDERLANDS  
RESTORATION**









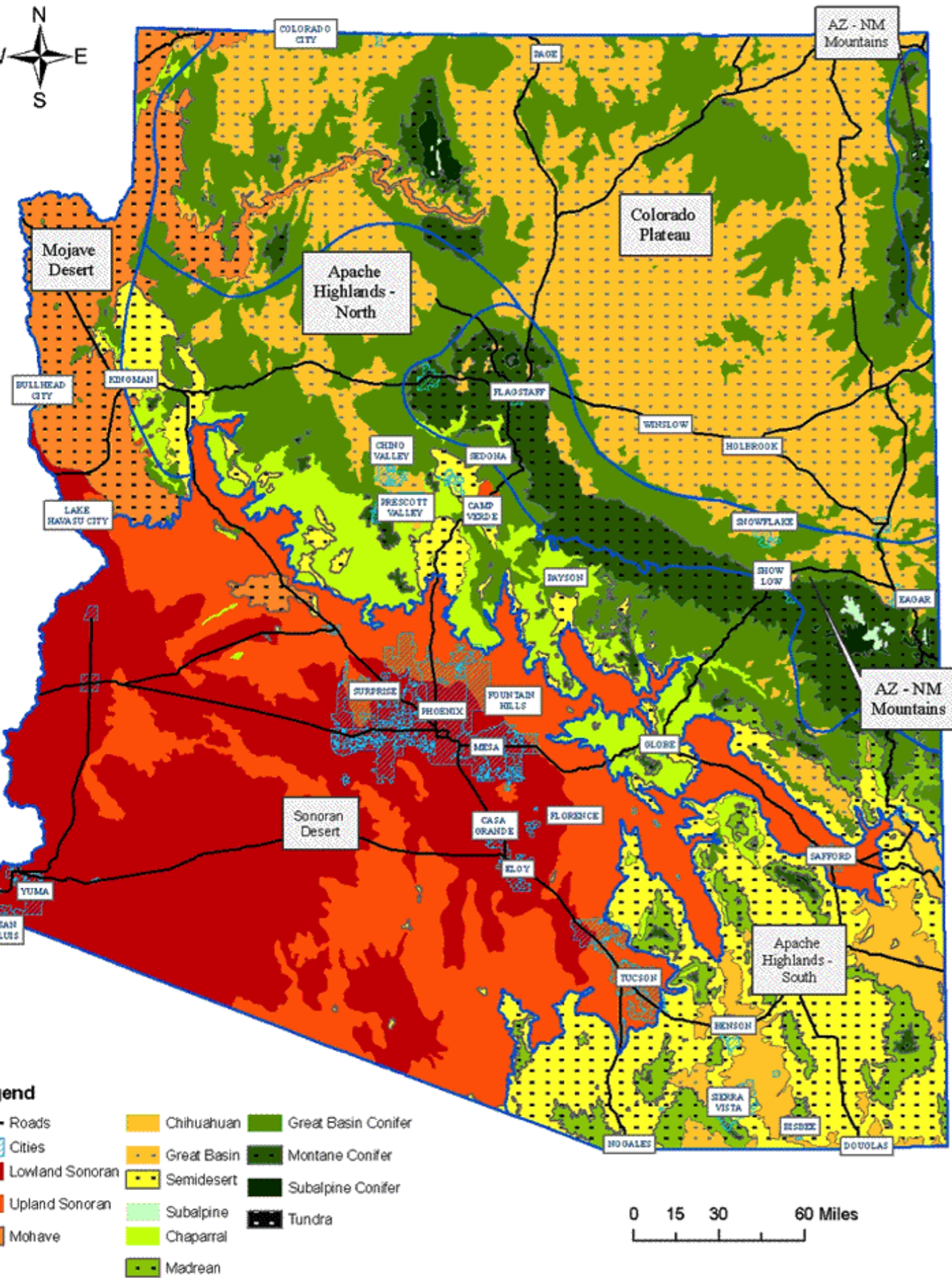
Borderlands Restoration Leadership  
Institute

[www.borderlandsinstitute.org](http://www.borderlandsinstitute.org)

Borderlands Restoration L3C,  
Borderlands Habitat Network 501(c)3,  
Biophilia Foundation

We are hiring!





Verde Valley Plant  
Materials Partnership

SW Seed Partnership

MAPP Initiative

Central Arizona  
Conservation Alliance

# The PATAGONIA MUSEUM



# Madrean Archipelago Plant Propagation (MAPP) Initiative

Allegra Mount, Seed Lab Manager  
Borderlands Restoration L3C  
[allegraceleste@gmail.com](mailto:allegraceleste@gmail.com)







The preceding presentation was delivered at the

## **2017 National Native Seed Conference**

Washington, D.C. February 13-16, 2017

This and additional presentations available at <http://nativeseed.info>

