

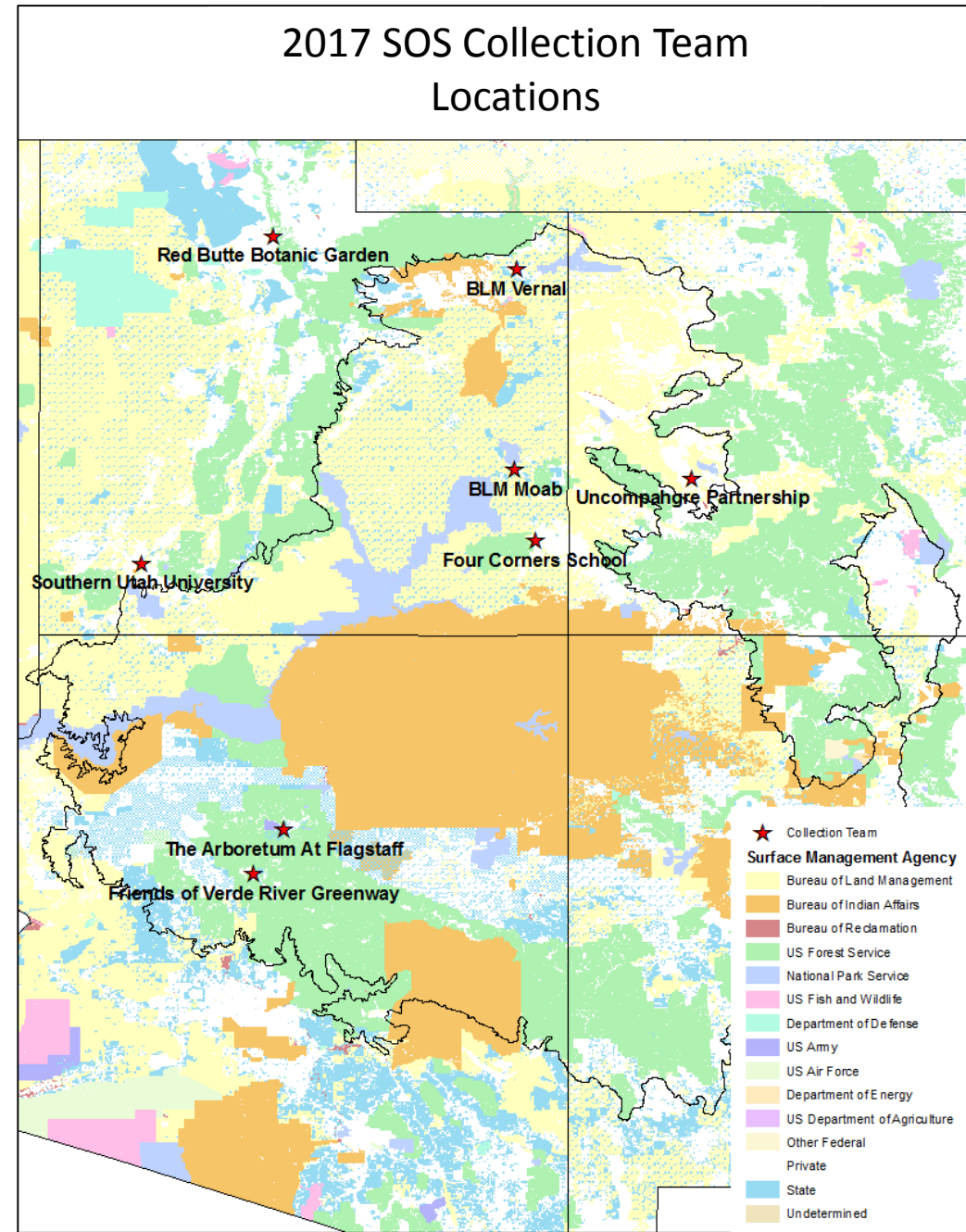



# Wildland Seed Collection for the CPNPP: Guidance and Accomplishments

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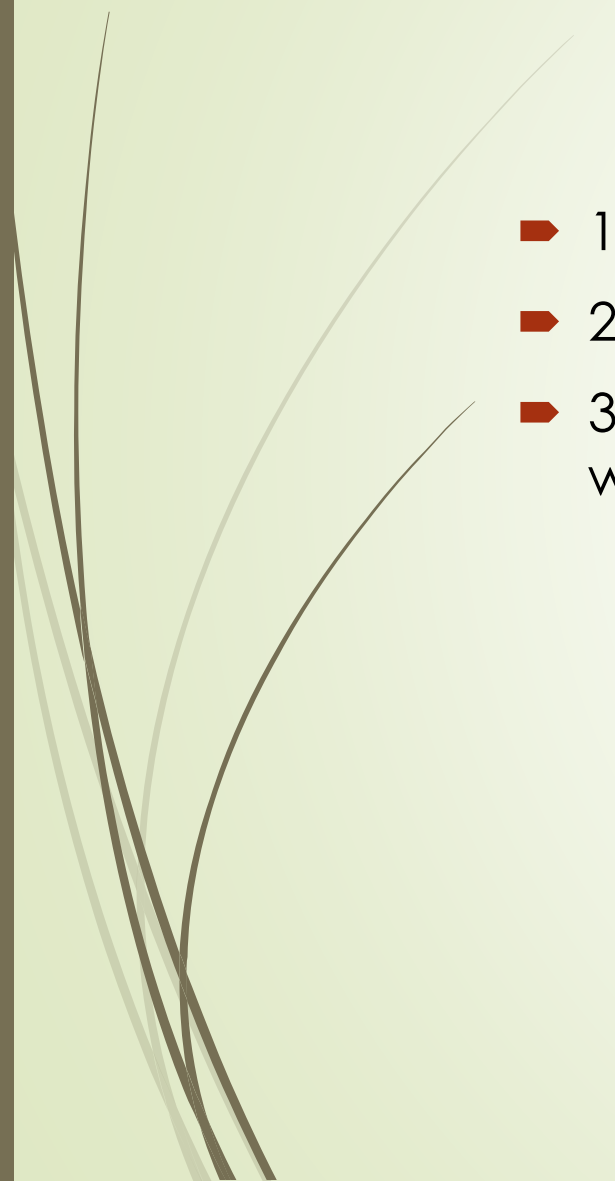
# Background

- 8 teams collecting for the CPNPP in 2017
- Seeds of Success (SOS) training
- CPNPP refines regional guidance annually



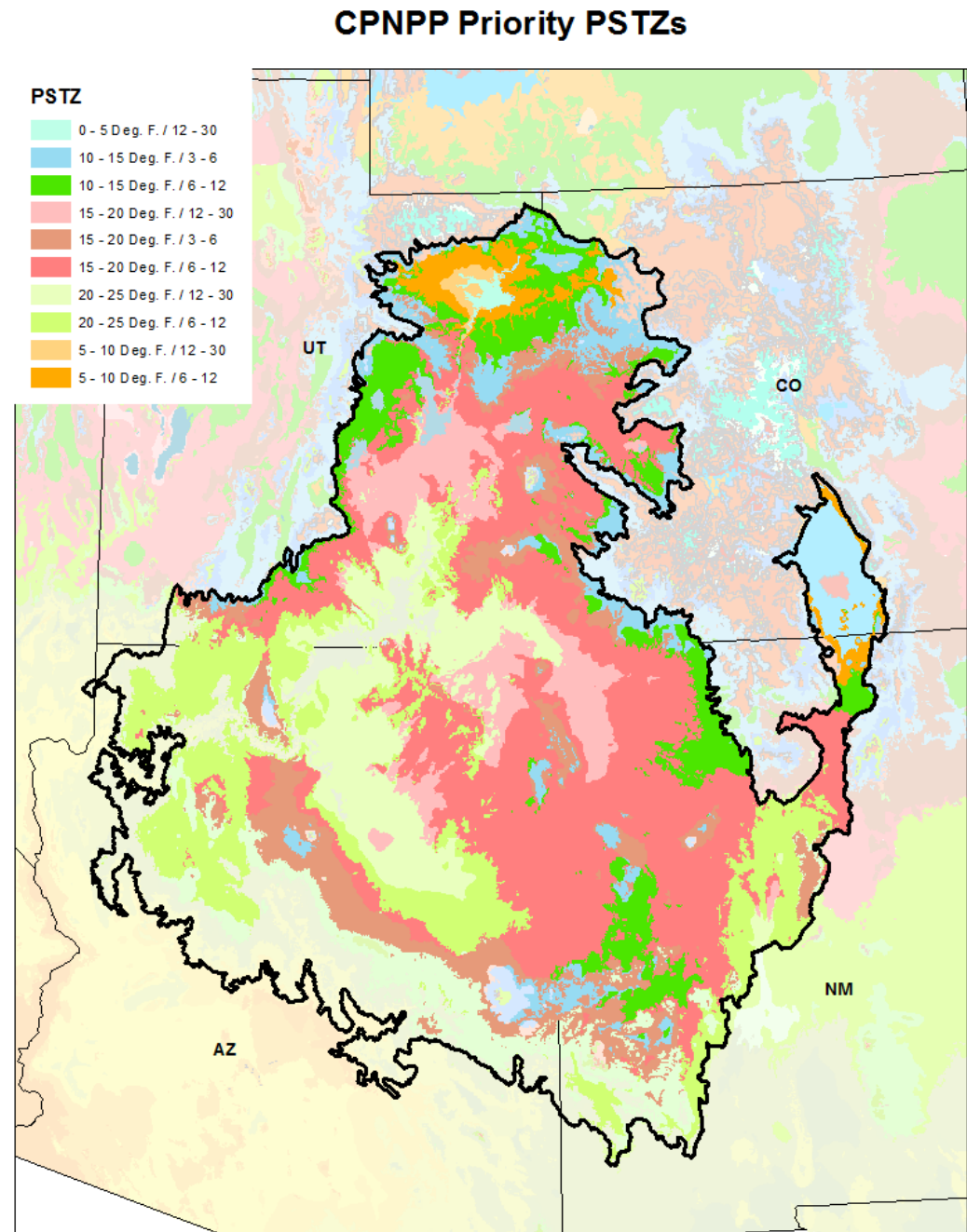


# How do we develop seed collecting guidance?

- 1. Current inventory – CPNPP database
  - 2. Seed transfer zones
  - 3. Reclamation & Restoration needs – oil & gas activity, wildfires, other disturbances
- 

# Provisional Seed Transfer Zones (PSTZs) (Bower et al. 2014)

- Based on winter minimum temperature and aridity (annual heat : moisture index)
- General idea of where seed transfers will be most successful
- Important tool for seed collectors and land managers

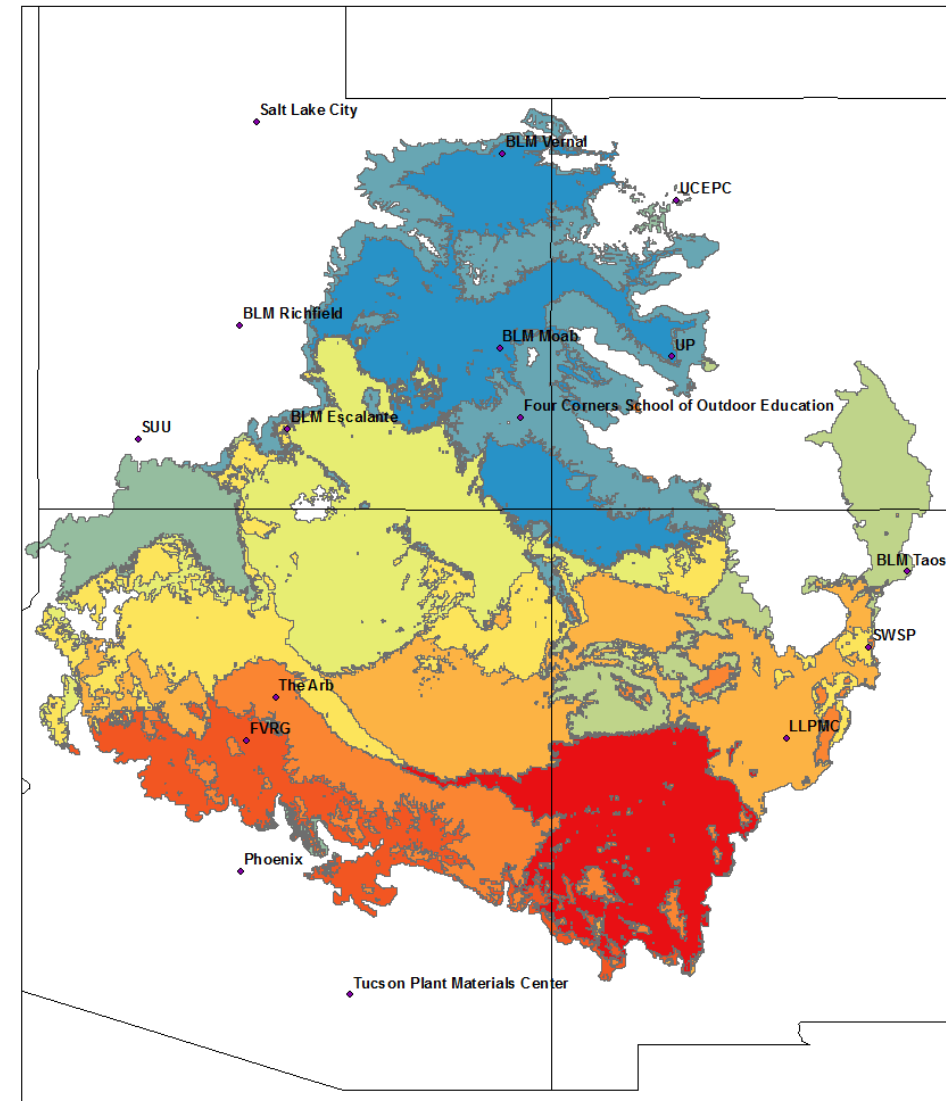


# Climate Similarity Zones

(Troy Wood, Kyle Doherty, Brad Butterfield)

- *Species specific* seed transfer zones
- Goes a step further than PSTZs
- CSZs aren't available for all of our priority species, but we use them when possible

**Bouteloua gracilis CSZ Map**



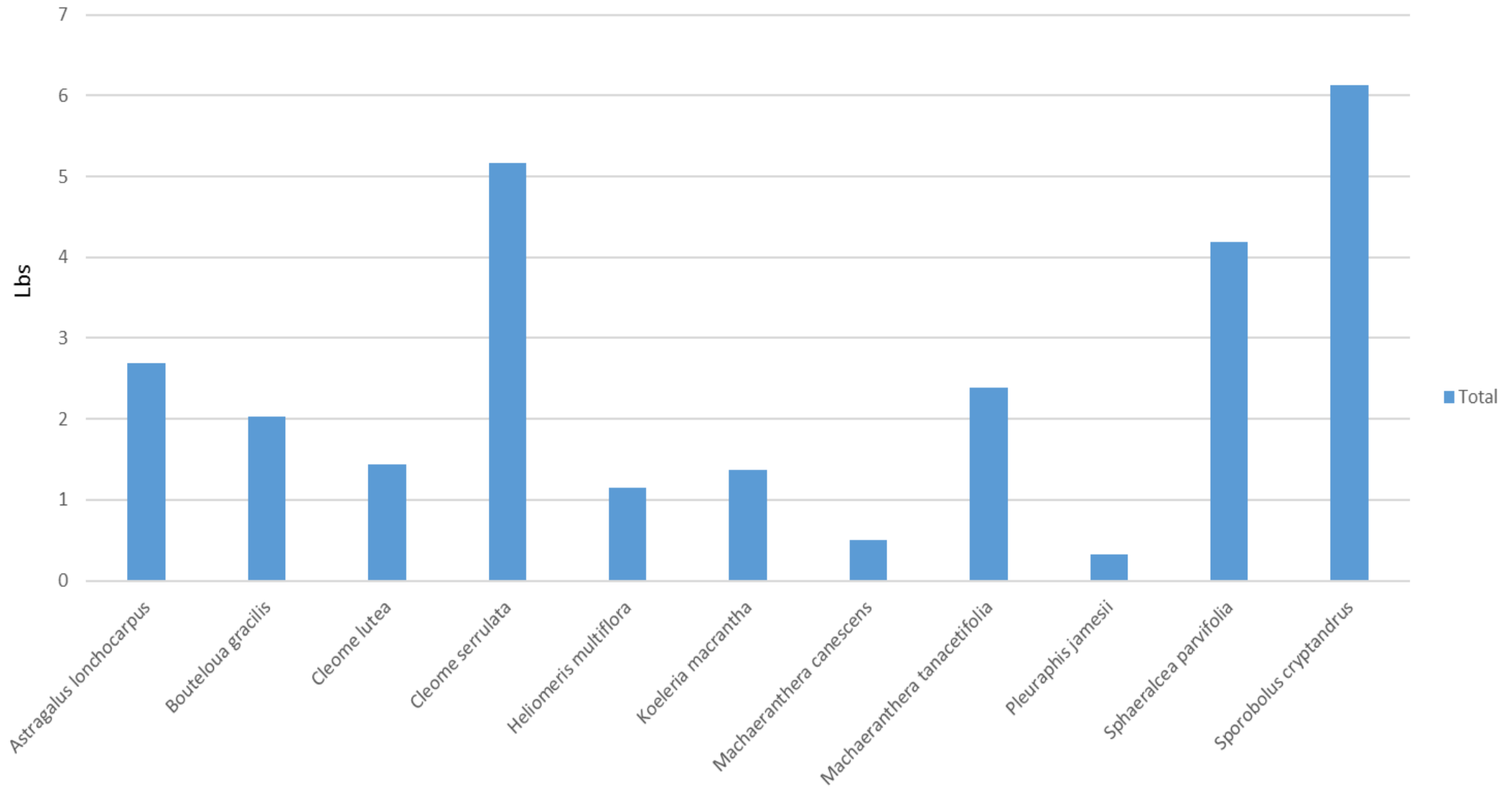


# Regional Guidance

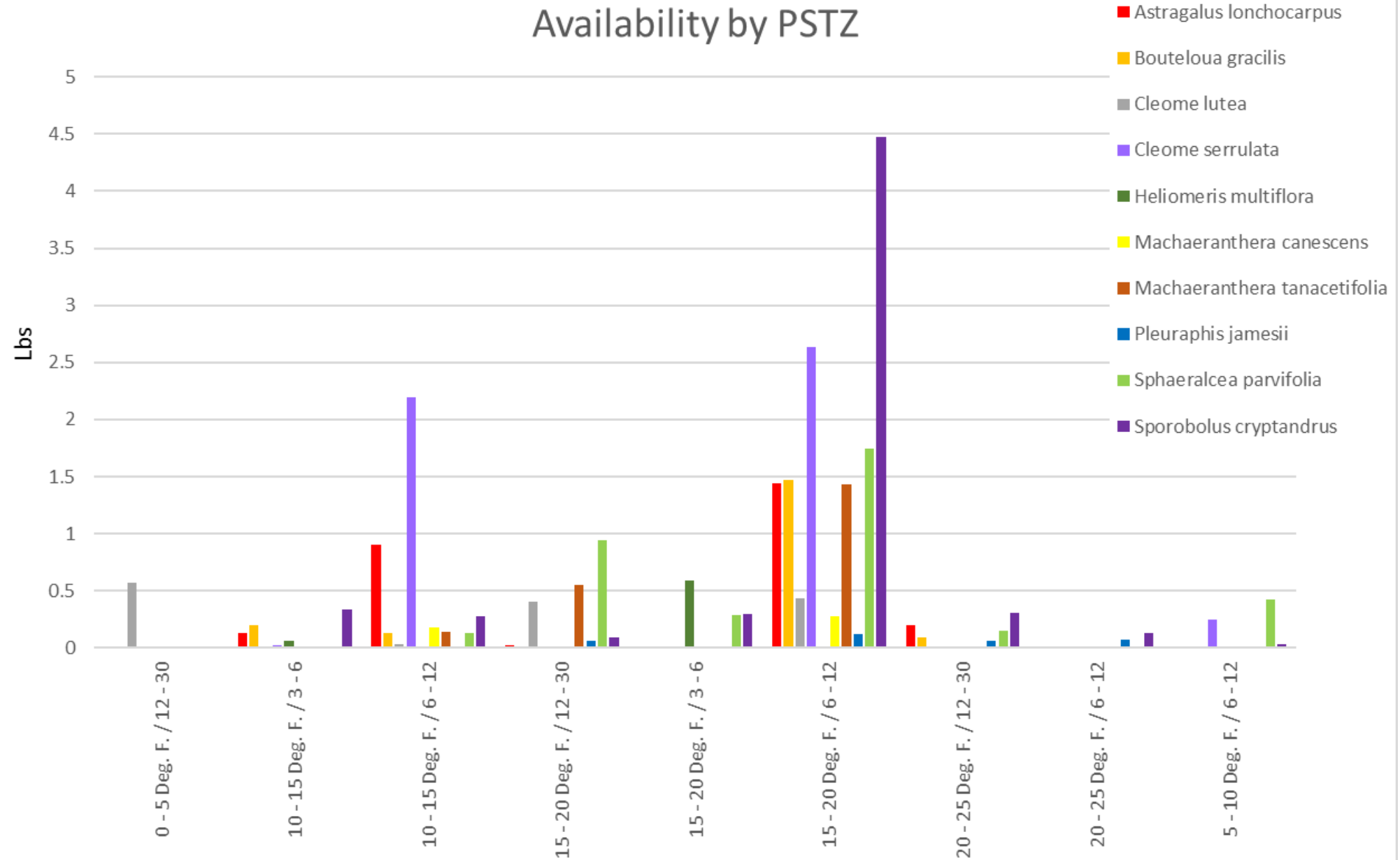


- 2017 Guidance developed by Adrienne Pilmanis and Rachel Hosna
- Chose 1-2 target seed zones and asked for operational collections where possible
- Build up inventory → Common garden studies → Seed increase

## CPNPP Priority Species Availability



## Availability by PSTZ

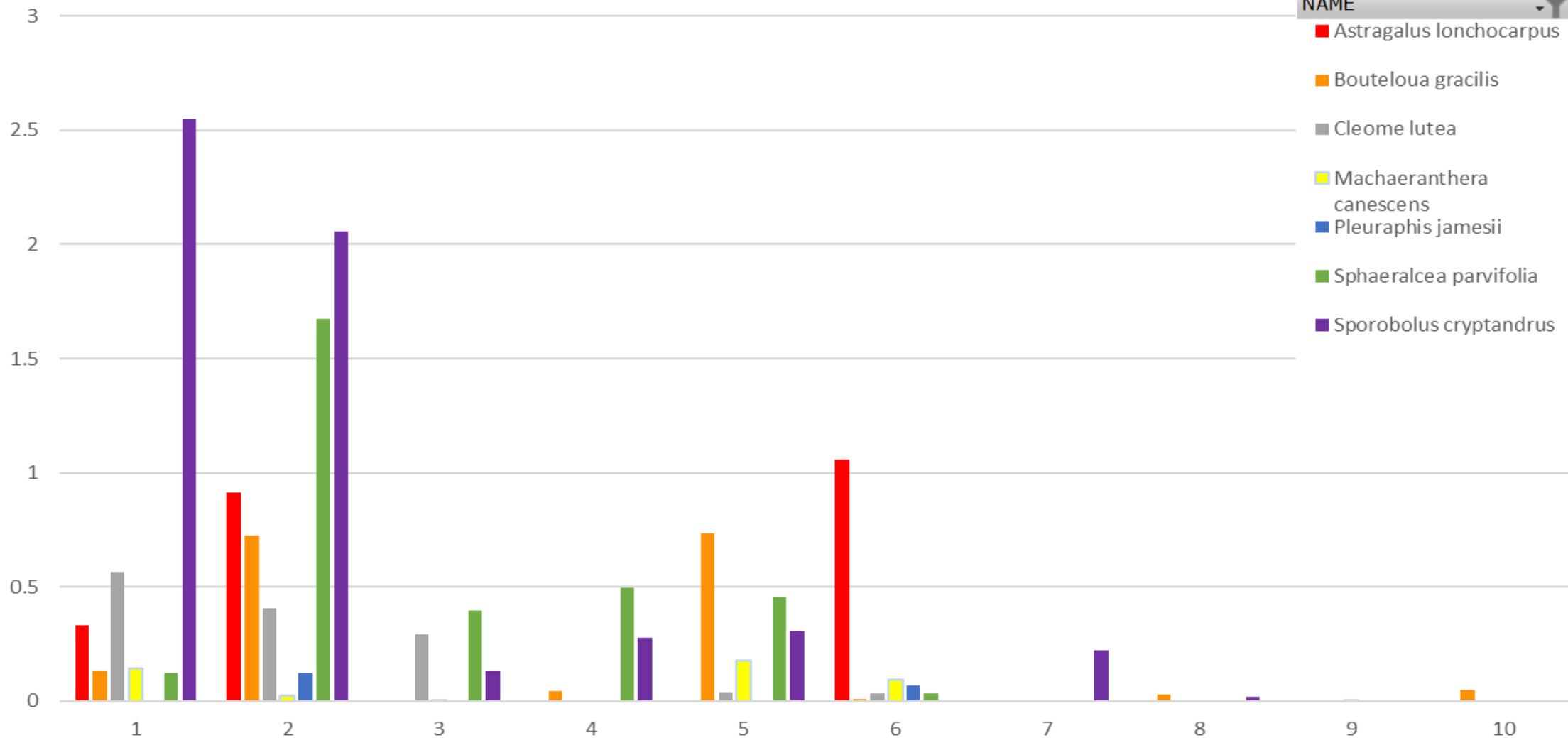


mass (lbs)

## Availability by CSZ

NAME

- Astragalus lonchocarpus
- Bouteloua gracilis
- Cleome lutea
- Machaeranthera  
canescens
- Pleuraphis jamesii
- Sphaeralcea parvifolia
- Sporobolus cryptandrus

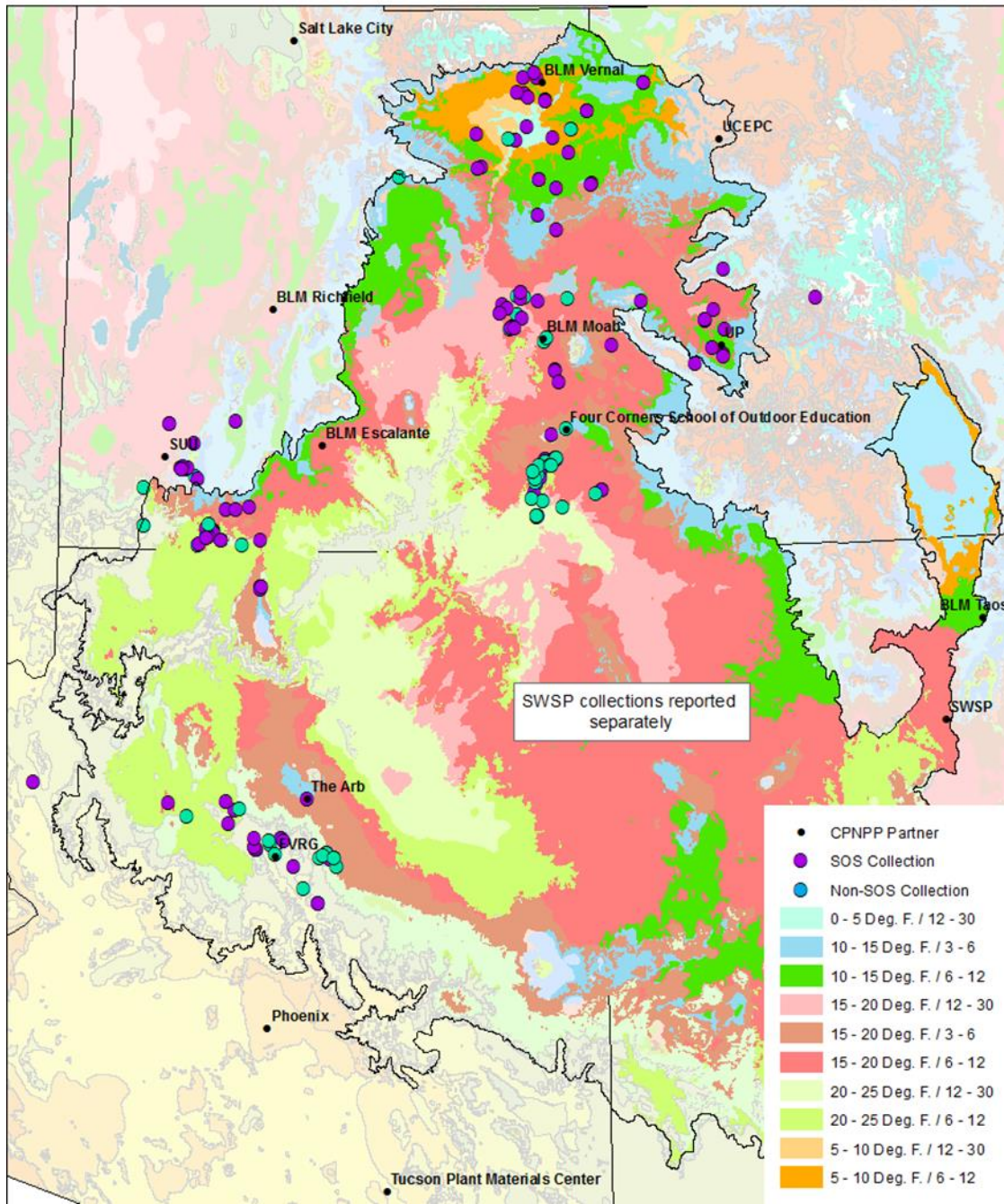


USGS\_Zone

MOAB FIELD OFFICE		***SPECIAL NOTE*** Tissue is being requested for all collections. Additionally, <u>non-SOS collections are permissible and encouraged</u> in order to obtain enough seed for operational needs.			
2017 Target: 20 large (>0.5 lb clean); 10 other (SOS or smaller)					
Species	# collections needed	priority zone(s)	need for:	Amount Needed	Tissue needed?
<b>High Priority CPNPP Needs</b>					
ASLO3	2	CSZ-2	CPNPP top priority	~ 1 lb - as large as possible	tissue needed - USGS protocol
BOGR2	1	CSZ-1	CPNPP top priority	~ 1 lb - as large as possible	tissue needed - USGS protocol
CLLU2	1	CSZ-2	CPNPP top priority	needed by multiple partners - please make collections as large as possible or consider making multiple collections	tissue needed - USGS protocol
MACA2	1	CSZ-2	CPNPP top priority	needed by multiple partners - please make collections as large as possible or consider making multiple collections	tissue needed - USGS protocol
PLJA	2	CSZ-2	CPNPP top priority & Steve Parr	~ 1 lb - as large as possible (Collect even if only small amount and send to Steve Parr)	tissue needed - USGS protocol
SPCR	1	CSZ-1	CPNPP top priority	~ 1 lb - as large as possible	<b>HIGHEST PRIORITY-USGS tissue collection</b>
SPPA2	4	CSZ-2 (2) & CSZ-3 (2)	CPNPP top priority	~ 1 lb - as large as possible	tissue needed - USGS protocol
HEMUM	1	15-20/6-12	CPNPP top priority	needed by multiple partners - please make collections as large as possible or consider making multiple collections	<b>HIGHEST PRIORITY-USGS tissue collection</b>
SPAI	1	15-20/6-12	CPNPP top priority	~ 1 lb - as large as possible	tissue needed - USGS protocol
KOMA	1	15-20/6-12	CPNPP top priority	~ 1 lb - as large as possible	tissue needed - USGS protocol
CLSE	1	15-20/6-12	CPNPP top priority	~ 1 lb - as large as possible	tissue needed - USGS protocol
MATA2	1	15-20/6-12	CPNPP top priority	~ 1 lb - as large as possible	tissue needed - USGS protocol
<b>Secondary Priority CPNPP Needs</b>					
Milkweeds	any	15-20/6-12	CPNPP secondary priority	20,000	tissue needed - USGS protocol
Cymopterus sp.	any	15-20/6-12	CPNPP secondary priority	20,000	tissue needed - USGS protocol
Lomatium sp.	any	15-20/6-12	CPNPP secondary priority	20,000	tissue needed - USGS protocol
ARPU	any	15-20/6-12	CPNPP secondary priority	20,000	tissue needed - USGS protocol
legumes	any	15-20/6-12	CPNPP secondary priority	20,000	tissue needed - USGS protocol
early seral species	any	15-20/6-12	CPNPP secondary priority	20,000	tissue needed - USGS protocol
Penstemon sp.	any	15-20/6-12	CPNPP secondary priority	20,000	tissue needed - USGS protocol
Astragalus sp.	any	15-20/6-12	CPNPP secondary priority	20,000	tissue needed - USGS protocol
Asters/Composites	any	15-20/6-12	CPNPP secondary priority	20,000	tissue needed - USGS protocol
Sphaeralcea sp.	any	15-20/6-12	CPNPP secondary priority	20,000	tissue needed - USGS protocol
<b>High Priority Needs for Regional Partners</b>					
PEPA6	any	15-20/6-12; 10-15/6-12; 15-20/3-6	Andrea Kramer (CBG) research	needed by multiple partners - please make collections as large as possible or consider making multiple collections	tissue needed - Andrea protocol
REFL	any	anywhere	Los Lunas PMC	~1000 seeds/collection	ship to Los Lunas unless SOS size
PASM	any	anywhere	Steve Parr	Large as possible - if less than SOS size, send directly to Steve Parr	
<b>Low priority regional partner needs:</b>					
LILE	any	15-20/6-12	Scott Jensen	20,000 seeds	
LONU	any	15-20/6-12	Scott Jensen	20,000 seeds	
SPGR	any	15-20/6-12	Scott Jensen	20,000 seeds	
SPGR	any	any	USFS R4	20,000 seeds	
CHDO	any	any	USFS R4	20,000 seeds	
HEMU nev & mu	any	any	USFS R4	20,000 seeds	

## All CPNPP 2017 Collections

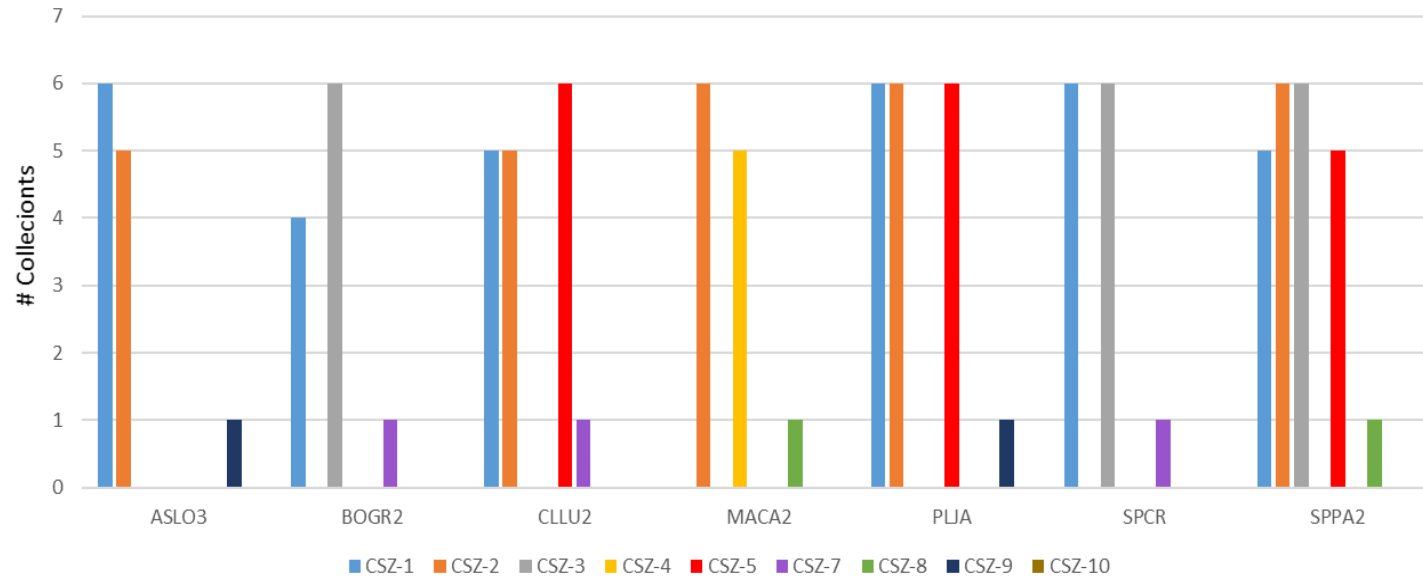
as of Jan 2018



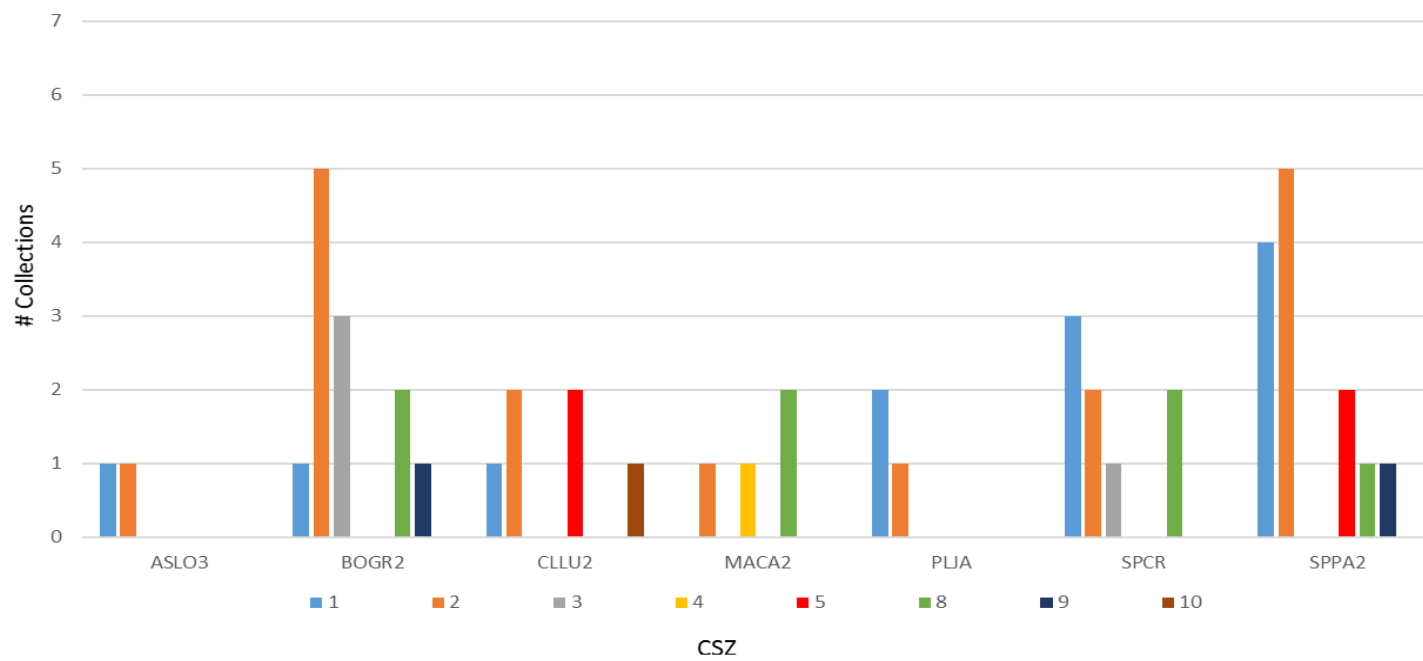
## Results

- CPNPP teams completed a total of 201 collections during the 2017 field season
  - 136 SOS collections
  - 65 small research & development collections
  - \*\*many are still being cleaned so are not yet available
- Over 4,000 tissue samples for genetics research
- 26 collections from 2017 currently being used in various research projects (as of January 2018)

2017 Requests



2017 Collections



# Where to go in 2018?

- Guidance is still a work in progress
- May revise priorities based on research needs and results from Bend
- Welcome feedback and suggestions for improvement

# Acknowledgements

- Adrienne Pilmanis
- Rachel Hosna
- Utah BLM
- Colorado BLM
- New Mexico BLM
- Arizona BLM
- Chicago Botanic Garden
- Colorado Plateau Native Plant Program
- Great Basin Institute Research Associates Program
- Four Corners School of Outdoor Education
- Northern Arizona University

- Red Butte Garden
- Seeds of Success
- U.S. Geological Survey
- U.S. Forest Service - Bend Seed Extractory
- Uncompahgre Partnership
- Upper Colorado Environmental Plant Center
- Friends of Verde River Greenway
- The Arboretum at Flagstaff
- Southern Utah University

