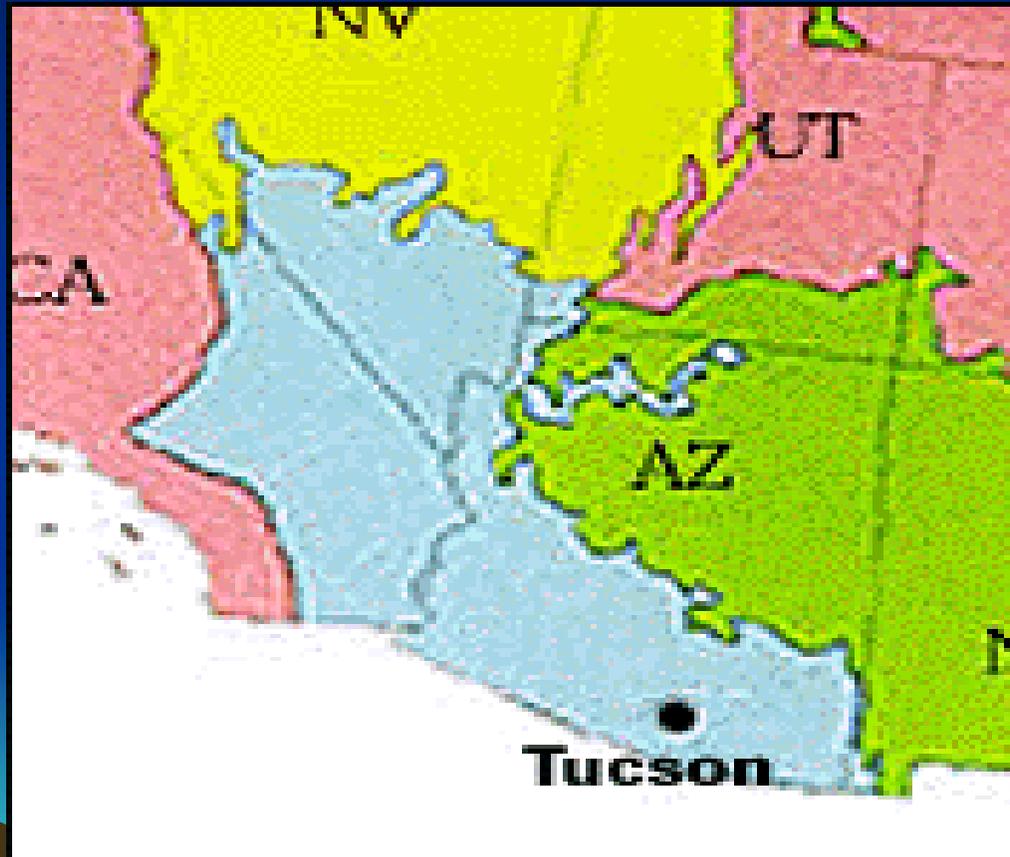


# Tucson Plant Materials Center

## Native Plant Releases & Plant Development Strategies



# Service Area (NRCS Field Offices & Private Land Owners)



# Native Plant Releases

- 'Rocker' Tanglehead
  - *Heteropogon controtus*
- 'Stevan' Plains bristlegrass
  - *Setaria leucopila*
- 'Blythe Germplasm' Desert saltbush
  - *Atriplex polycarpa*
- 'Loetta' Arizona cottontop
  - *Digitaria californica*
- 'Saltillo Germplasm' Cane bluestem
  - *Bothriochloa barbinodis*



# Cane bluestem seeding

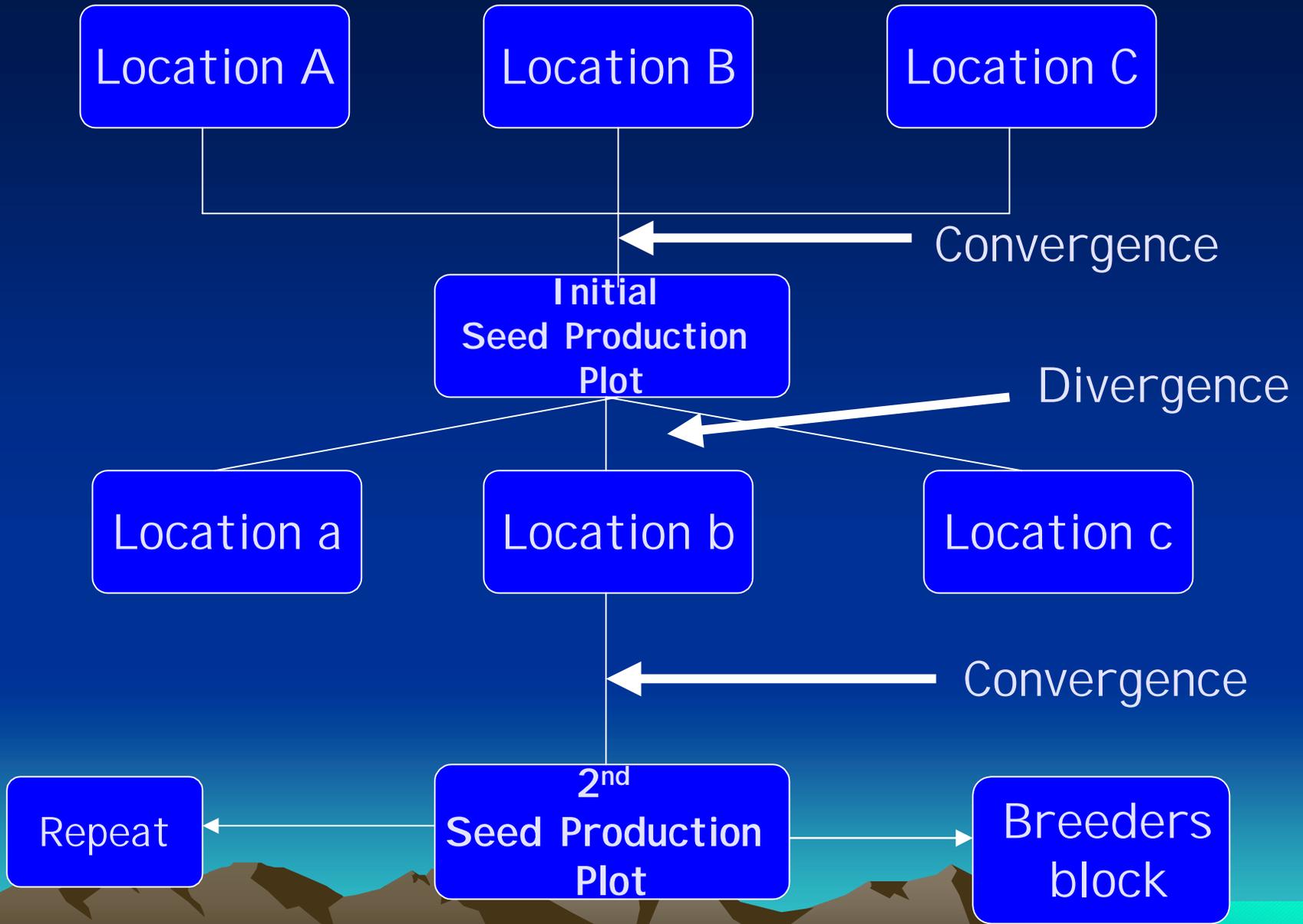


# Arizona cottontop seeding



# Convergent Divergent Population Improvement Strategy





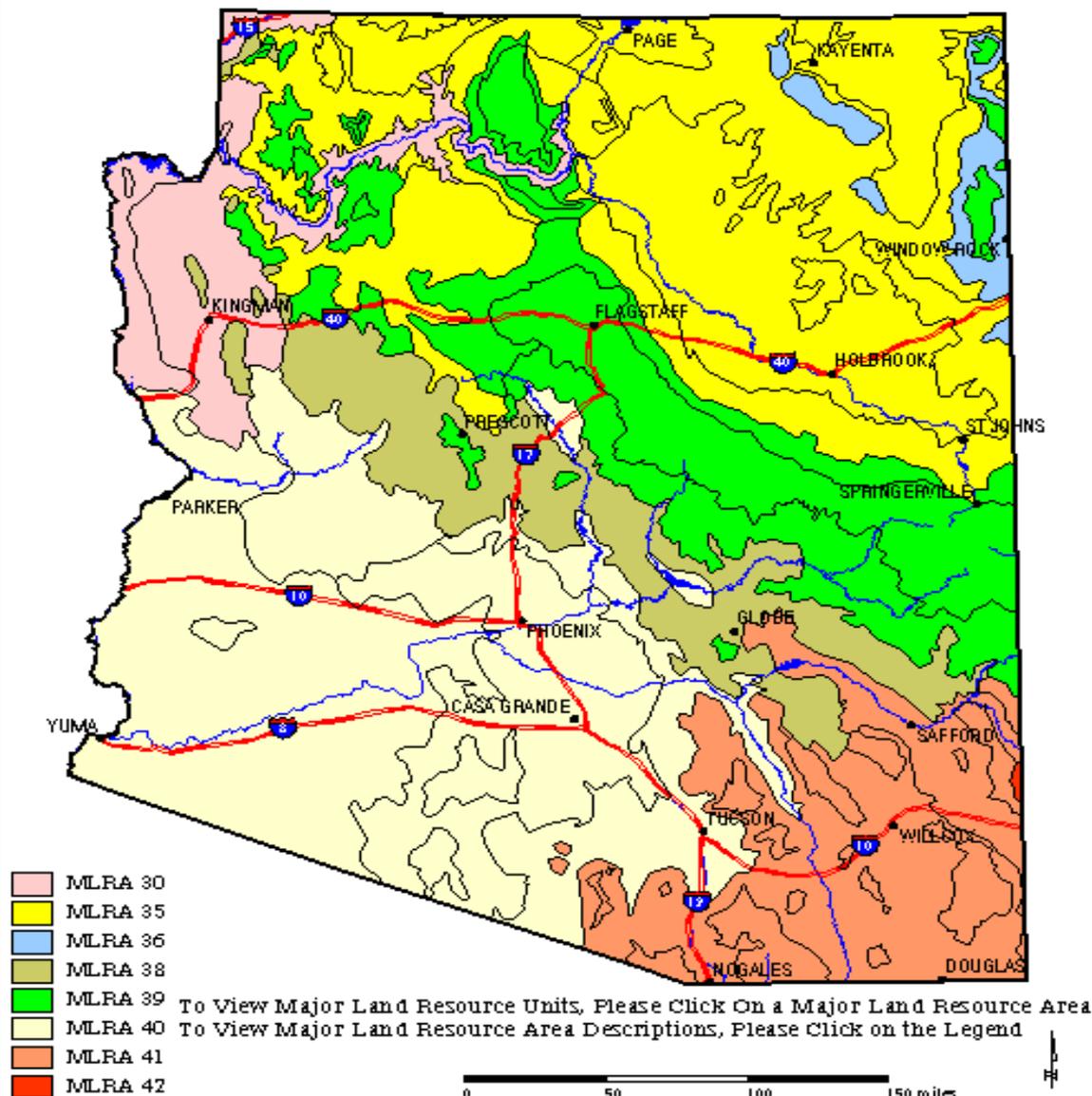
# Spike dropseed *Sporobolus contractus*

Purpose: Find a native replacement  
for Lehmann's lovegrass.

Similar seed size, sowing methods, soil types,  
seed germination.



## MAJOR LAND RESOURCE AREAS



Location A

Location B

Location C

Initial  
Seed Production  
Plot

Convergence



# Spike dropseed Convergence

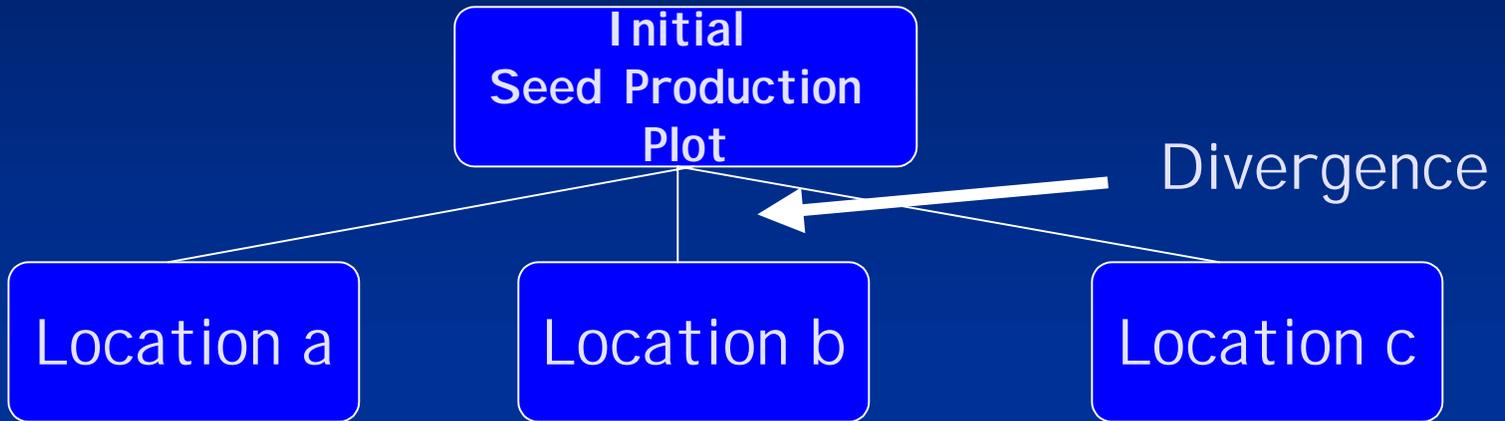
- 44 collections from Southeastern Arizona.
  - Sample from average to extremes of the environment in the target area.



# Spike dropseed Convergence

- Three plants from each collection randomly placed in seed production block. (132 plants in a 11x12 block)
- Seed harvested from each plant and equal amounts bulked.





# Spike dropseed Divergence

- Bulked seed used to propagate plants for selected “divergence sites”
- Three sites selected for low, medium, & high precipitation & Lehmann’s competition



# Spike dropseed Divergence

- 196 plants at each site
  - One watering, no weed control, sites fenced to reduce grazing
- Each Site:
  - Seed harvested from the “best” plant in a 3 x 3 grid.
  - Total of 41 plants were harvested from each site.





# Convergence

## 2<sup>nd</sup> Phase

- Seed cleaned & weighed from each of the 123 plants.
- Equal amounts from each collection used to form breeders seed. This sample assigned Accession # 9064129 and lot # SBR-00-7011.
- Breeders block established using 1,280 transplants.



# Seed Production

- Seed is bulk harvested from breeders block.
- Sample from breeder seed harvest used to produce plants for foundation seed production field.
- Currently, 0.5 acres in production and will be expanded to 1.0 acre in 2003.



# Key Points

1. The Plant Materials Program develops plant materials for commercial use.
2. CDI process produces a highly variable population that SHOULD be successful in variety of environments.
3. Flexibility: process can be adapted for desired product. Maximum variation or variation with desired qualities.



# Potential Uses

- Specific areas/needs:
  - Parks, Monuments
  - Critical habitats
- Habitat Fragmentation:
  - Gene flow?



# Tools

- Ecological Site Descriptions & Practice standards:
  - Species list for specific sites & quality criteria for implementation.
    - [www.az.nrcs.usda.gov](http://www.az.nrcs.usda.gov) (under technical resources)
    - <http://rangelandswest.org/az.index.html>
- Commercial Source List:
  - Species list keyed to vendors
  - Available at
    - <http://Plant-Materials.nrcs.usda.gov>



# Other Tools

- Certified Seed:
  - Source Identified
  - Tested
  - Selected
- Origin, quality (# of generations if field grown, no noxious weeds allowed in seed, purity)



# Other Tools

- Pure Live Seed (PLS)
  - Germination X Purity /100
  - You Should know how much seed you are applying



# Thank You

