

## Mojave Workshop Notes Wed April 19, 2006

### Session 1: Generate a list of priority plant species for work in the Mojave

Some species were added to Steve's list on screen

Matt Brooks, general suggestion: That habitat and forage plants for desert tortoise should be divided into species appropriate for forage and those needed to create habitat.

Matt Brooks, question: Why is blackbrush listed as a Desert tortoise plant?

Caicco response: The list generated based on work done by Todd Esque and Dave Browns biotic communities chapter on the Mojave.

Ed Kleiner, general comment: Specific subspecies present in different geographic parts of the Mojave should be considered on list. *Encelia virginesnsis* and *actonii* in the west should be split out from *E. farinosa*

Ed Kleiner, suggestion: The list should also identify plants that have a potential for use in urban setting as well as habitat restoration potential.

Suggestion: Add the following species to list: *Agave Utahensis*

Suggestion: Add *Isocoma acradenia* to list – was used at LV springs preserve along with saltbush.

John Hiatt, suggestion: List should be divided according specific purposes i.e. suitable for fire rehabilitation, revegetation, erosion control.

Suggestion: Identify plants that have multiple purposes and put together into matrices i.e. suitability for DT habitat, Chuckwalla forage. Cross check matrices for species that have multiple purposes etc. The species that have the highest number of multiple purposes or most overlap between the matrices would then be your priority species for development.

Comment: In order to identify what our priorities are, we need to know who is working on what and what materials are currently available.

Comment: As we discuss what people are doing (what projects they are working on) we also need to add the why (the reason behind the project/need) to better understand priorities.

Suggestion: Send out list or matrix to people for comment and to fill in. Have them return the comments to central person to collate. Need to include specific instructions as to what information is being requested.

Suggestion: should shift symposium efforts to better understand who is doing what with each plant etc....instead of generating a plant list or matrix at this time.

Alkali scaton – the following agencies/projects are using this species: Las Vegas preserve, BLM Las Vegas, The Springs Preserve , Lake Mead, LV wash restoration group.

The following species should be added to the list:

Bouteloua gracilis –

Sand drop seed – sporobolus gracilis

Acnatharium speciosum

Jamesii

Hillaria rigida

Comment, Alice Newton: Lake Mead currently has a seed collection that has over 100 species – This list can be provided and used a starting point for people to comment on what they are doing.

Plant conservation alliance web site can be used for distribution of information –send Steve list of plant species you are working on – he will complete list and send it back out via FTP site

Suggestion: Clarify what info people will need to provide.

Suggestion: Generate a wish list from land managers of what materials they want and generate a list from suppliers of what they can provide.

Comment, Josh: This could be incorporated into the matrix generating a matrix as a good starting place.

Suggestion: If grower has developed a protocol for successful work this would also be useful information to distribute.

Comment: much of this information is proprietary

Suggestion : Don, Problem seed companies have is knowing what the agencies want – Agencies should get together and decide what is needed, then go to researchers to have materials and protocols developed then release the information and techniques to the growers.

Comment How will that sort of procedure work with wild land collected shrub species i.e. shrubs. The permitting agencies will need to work out seed collection areas within management plants to set aside enough area for seed collection

Comment: LV BLM has had problems with not setting aside enough area in the past but realizes the problem is working on a solution.

Missed a comment or suggestion from Matt Brooks .....

Comment: Ease of culture and collection have a big impact on what is available for exactly that reason. Species that are not currently available are that way for a reason

Suggestion Ramona, –Manage expectations, generate a list of easy and hard species. Get the easy ones going first. The budget 4-5 years to work on the hard species. That way people are not expecting miracles. We should not give up on the more difficult species to culture because if the Feds will not work them no one will.

Add the following categories to the list:

- Propagation (easy /hard)
- Habitat value (DT, other species)
- Special uses
- Other uses (colonizes dist slopes, good for erosion control ) – these may fit better as a special use
- Zones within Mojave – would be of interest to folks in BLM Utah.

Suggestion: Emphasis should be placed on early colonizers. Later successional species – may come in on own later.

Suggestion: Add category or identify what species are most widely adapted species have potential for broad application in a variety of locations

Comment: Genetics must be considered, example in Oregon local vs. region wide collections, adaptability to local conditions important, conservation of genetic diversity.

Suggestion: Identify species useful for urban settings: for trails, erosion, plants that work well together and plants that have good survivorship input from experts is wanted by private industry –

Comment: easy access to documentation and reference materials are needed. Documentation might include genetics and where species are planted, scientific lit , anecdotal info etc..

Comment/Suggestion, Alice Newton: Restoration is a long term process. A list of, and research into, native or non-native species that serve specific short term purposes -i.e. soil stabilization etc... then go away, would be very useful to land managers. This will take a lot of work and testing– theories would need to be developed and tested. This is something that researchers should work on.

Suggestion: Re-Green or sterile hybrids could be used to this species.

Suggestion, Steve: This might be a sub set of the special use category

Suggestion: Flesh out what the special uses should be. Burned area rehab, DT, watershed stabilization , erosion control, Mine reclamation, road rehab. There will be some overlap between many of these.

Suggestion: species good for weed competition and livestock forage should be added to special uses list.

Suggestion: Suitability for different applications should be added – aerial vs. drill seeding vs. direct seeding This can be added either as a special use or new category

Suggestion: Add species useful for managing revegetating urban impacts.

Comment: Many native plants can do double duty as landscaping. This might be a way to get plants out in the market sooner

Suggestion: Divide list into annuals vs. perennial because handling these species will be different. Genetics of annuals is more likely to change and become adapted to field conditions. Perhaps only one or 2 generations can be grown without significantly affecting the genetics. This topic will need to be researched. Growers can not be replanting the same seed over and over as per usual, will need to develop and implement best management practices and restrictions to maintain genetics.

Comment: Utah's Choice is an organization of commercial growers that has selected natives suitable for landscape purposes and have low maintenance for landscaping purposes. Encourage a similar effort here in Nevada.

Comment: Effects of fire on native seed bank will need to be researched. Did not get Matt Brooks complete thought – but generally speaking will have more annual species with increased fire frequency.

Suggestion: When doing post fire rehab in an area you would expect to reburn – add fire resistant species to make the system better adapted to fire.

Suggestion: it might be useful to identify and use annuals and short lived perennial species that won't change genetics very much and we can feel good about using.

Comment: In addition to focusing on long term restoration research investigations also need to community shifts as a result of climate change.

Suggestion: Indigenous uses and value should to be considered in generating a list of species.

Suggestion: Rare plants need to be considered on list. For example LV buckwheat and bear poppy.

Comment, Ramona: Successfully creating native plant strains for commercial production is dependent on clearly identifying what the land manager needs out of the product being developed. The cultural practices can be adapted to a variety of needs.

Land managers have the ability to, and must, define what they want their “big galleta” population to be in terms of genetics, growth form, how it will be grown and harvested. The land manager needs to identify ahead of time what is needed before it goes into R&D.

Comment: This is probably an iterative process –

Suggestion: Add Mojave ground squirrel, as it has specific vegetation needs

Suggestion: Add Spring Mountain butterfly species vegetation needs

Comment: Associations and other species habitat needs – should be more clearly specified and developed.

Suggestion: Add pollinator needs, in production and in the field.

Comment: Identify and clearly define what management decisions need to be considered/made (?) and best management practice needs.

## Session 2: Equipment and Facilities-----

The idea for this session is to basically identify who has what. Open question, is this the way to proceed?

Comment, Alice Newton: Lake Mead has a 3 acre nursery available to local federal agencies– capacity approx 50,000 plants per year – both wetland and arid land plants , constructing a seed storage facility. Working on a seed pelleting project – small scale project – [www.seedballs.com](http://www.seedballs.com) web site for more info regarding pelleting. Currently this project in development and will move into field testing – one benefit is that less seed is needed per acre.

Comment, Ed: There are commercial facilities for seed blending, custom collections etc.. these are lists of facilities on the internet.

Comment: State of Nevada has growing facility and seed storage facilities in Northern and Southern portions of the state.

Comment: Community of Southern Nevada –200,000 sq ft green house, 3 + acre yard, 6,000- 10,000 plants per year production capacity, tissue culture facilities, available to research and develop protocols for difficult species.

Comment: University of Nevada Cooperative Extension- coop – extension has research facilities, 20 acres of yard, plans for green house and more facilities– disease and pest diagnostic facility, space for community garden.

Comment, Ed Kleiner –Databases of private growers are available.

Comment: Two other places available, Victor Valley College– greenhouse and will grow out things – Soil Ecology and Restoration Group at San Diego State University has green house and resources on the web

Comment: Joshua Tree National Park has 3 green houses, with a 10,000 plant capacity.

Comment: Shrub Lab at Utah State and BYU have facilities. Should also look into Southern Utah Colleges.

Comment: The Springs Preserve in the future will have capacity after they are done with their own revegetation– intend to expand of the next year.

Comment: David Bainbridge is a contact Desert Lands Restoration Task Force and authored the Beginner's Guide to Desert Restoration - *Personal observation, Dave is no longer involved much in DLRTF.*

Comment: Forest Service National Seed Lab is available to develop seed germination protocols and develop rules for commercial testing of seed.

Comment: Private growers will take seed and grow plants on contract, and bulk seed under contract.

Comment: Ramona has a list of equipment, faculties and biologists associated with PMC's . NRCS Nevada will be purchasing a lost of specialized equipment – now might be a good time to contact them if specialty equip is needed.

Comment: Geographic considerations will need to be made regarding nursery faculties, Fallon and Tucson facilities each have positives and drawbacks regarding what can be grown. Fallon might be available to grow cool season plants, Tucson warm season plants.

Comment, Alice: Considerations regarding warm and cold Mojave desert will need to be made also.

Suggestion, Ramona: Common gardens are needed. A nice goal might be to have one agency set up a common garden for all plant materials – so that they can be compared and monitored and have long term study – Pick several areas in the Mojave for the common gardens to represent all growing conditions.

Suggestion: This common garden would need to be set up and managed over the long term and at multiple sites.

Comment: Assistance and outreach needed to facilitate small growers interested in the market.

Comment: Federal budget constraints place much of the financial burden on the private sector –Congress and the federal government need to make a commitment to buy a known quantities of seed each year to provide growers with some stability and consistency in the market. Funding needs to be dedicated to the purpose. Seed would then be available to respond to emergency situations quickly.

Comment: There is a need for the private sector to lobby congress to encourage the process.

Comment: Congress agreed to restoration of public lands – they need to follow through.

Comment: To provide market stability BLM should define limited suite of species that could be used across districts in the Mojave.– this is how the GB initiative works. *One problem with this, floristically the Mojave is more complex than the Great Basin and a good mix should be tailored to site conditions and surrounding vegetation.*

Comment: Erosion control and placing native species that will compete with non-natives are priorities for the BLM.

Comment: On the list we don't see list of AZ universities that are working on these issues. More university involvement is needed.

Comment: If there is money for funding they will come.

Comment: There will be a Plant Symposium May 16 at NAU – They also have ponderosa pine restoration program.

Comment: There needs to be a long term strategic plan to identify key shrubs , grasses and forb species. There is also the need to develop more limited designer species that have a smaller distributions. There is a way to blend the two needs. but it will require some careful planning.

Comment: Succulent species will also need to be considered.

Comment: A combination of approaches is needed to get the seed we need.

Comment: Is anyone from here from BIA? There are tribes in the lower Colorado that do agriculture. They might be good partner for getting some of these species into production. They also have access to water and special funding. In particular the Ahakav tribal preserve in AZ would be worth investigating.

Comment: We need to find a way to have more successful lobbying – market our successes – capture the right buzz works – Should send conclusions of this symposium back to Sen. Reid

Comment: Good planning is needed to ensure that seed and plants are available when you need them. The Federal agencies need to get a better handle on planning.

Comment: There needs to be interstate coordination- in particular department of highways. Different management ADOT and NDOT on the highway 95 corridor these is a difference on how road shoulders are being managed.

Comment: Finding all the appropriate key stake holders must be part of a long term strategic plan.

Comment: will working groups be developed at the conclusion of the symposium? So that this symposium is not just an opportunity for folks to complain

Suggestion: If this effort is going to get off the ground, it will need a coordinator to make it happen.

Suggestion: Seed certification and labeling must be considered. Sources of information and coordination should include Nevada Department of Agriculture and Utah Department of Crop Improvement, AZ Crop improvement association (contact Al Simons) and CA Department of Crop Improvement, AOSCA- association official seed analysis, society of commercial seed technologists , American seed trade association.

### Session 3 - Research and Development Questions-----

Comment: Issues that have already come up include the need for Genetics studies and common gardens, development of cultural practices.

Suggestion: Develop priority list of native plants for research

Suggestion: Need a forum for researchers and nurseries to exchange information.

Comment: The Great Basin Initiative seed buyback program requires the grower to feed cultural protocols back into the federal agencies via web site.

Suggestion: Research into plant associations, seed zones etc.. and how it relates to where species should be planted is needed – narrower focus on what should be planted.

Comment, Matt Brooks, Both the How and Why ends of seeding (use of native seed) need to be considered. Need to understand and identify purpose, identify objectives and determine what species are needed and the various reasons for the need. Need to identify

the effect of fire and other disturbances on the native seed bank before we understand what kind of seeding is needed or will be effective.

Comment: Last week BLM and FS geneticists meet. The topic of ecotones was discussed. This information may be useful in the context of the current symposium. Peggy Allwell attended and can provide information transfer if needed.

Suggestion: More information is needed regarding effectiveness (as it relates to native seed) of various restoration techniques and types of disturbance.

Suggestion, Gayle: Research into the fate of the native seed bank after fire is needed.

Suggestion: Research is needed in the state of seed banks in general, the quality etc.,... what is already in the system and how it is effected by nonnative species.

Suggestion: Research in soil biota and soil associations is needed. – research into what are the associations and how they affect restoration, their role in Mojave systems

Suggestion: Research into appropriate seed collection windows and seed viability.

Suggestion: Research is needed into to how to match agency needs with growers needs – Using a research economist do a market study of market forces that may be helping or hurting – GASO study - How the market is failing and what we need to do get gov and private industry working together.

Suggestion: Research into pollinator interactions (ants, bees etc..) is needed.

Comment, Sandee Dingman: – Post fire, if natives species are not available, we automatically default to a farm raised seed crops to provide erosion control protection. We need research into what natives or techniques would be appropriate for this purpose.

Suggestion: Need research into post fire erosion control – when is seeding appropriate, what species to use etc... can soil stabilizers chemical be used with out affecting T&E species. Seed can be put into taquifiers for better coverage.

Comment: The reasons for post fire seeding are complex – something is going to be put out regardless, so what better options can we give managers for post fire management.

Suggestion: Research is need in the impact s of soil taquifies etc, and other palliatives on DT and other ecosystem functions. For DT and lizards etc are there unintended consequences.

Suggestion: Sterile wheat re green has been used with some mixed success.

Suggestion: Basic research is needed on plant and soil water relations in the Mojave.

Comment: An economic analysis for native seed marketing has already been completed by Kyndda Curtis for the Southern Nevada Wildlands Seed Producers Association – the objective was to identify different strategies for marketing native seed.

Suggestion: Database for research studies and citations on disturbance in the Mojave is needed. This database should include current and past literature and should be easily available to land managers.

Suggestion: Research into what are the consequences of using native and non native species for various purposes on native ecosystems.

Comment: Regarding weeds there is a lot of information – we need more information on how to prevent weed infestations, control techniques, tools and treatments.

Comment: General research into genetics is needed, the effect of climate change , information regarding the levels of genetic diversity that is needed or a natural part of current systems, how we are affecting genetic diversity with our current management practices.

Suggestion: Research into the historical context of revegetation , information regarding what plant communities were historically present. This could be put into a database of information for land managers.

Suggestion: more research into stable states and transition states for the Mojave are needed – UC Davis and Patty Novak NRCS are currently doing this research.

Comment: Taskforce needed to prioritize the research , this could be a working group.

Comment: There are various systems for prioritizing weed control using ideas regarding ecological threat, invasiveness and economic feasibility for control. A similar system could be developed to prioritize plants needed for revegetation

Comment: a source of the right plant material to make the research possible will be needed – i.e. access to the appropriate material.

Suggestion: Use remote sensing as a tool for seed management and identifying needs.

Can we identify people to do need research ?

Suggestion: CESU network as a way to find researches at a lower overhead for federal research needs.

Suggestion: UNLV and UNR are looking at elevated CO2 as the face rings and their also looking at the microbial changes too. Might be applicable.

Suggestion: Univ of AZ, Dept of Natural Resources are looking at climate change and state transition models. .

Suggestion: USGS is doing research on fire in Mojave

Suggestion DRI is doing soil hydrology in conjunction with restoration at Fort Irwin.

Comment: USDA, DRI are organizing a fire workshop. There will be a fire ecology section at International Fire Conference in San Diego.

Suggestion: Researchers from Cal State Fullerton and UCR are looking at the effect of animals in the hackberry fires.

Suggestion: The Desert Managers Group may have list of researches.

Comment: Interagency scientist and research team in Southern Nevada could identify funds for research questions under SNPLMA.

Comment: Mojave desert ecosystem project – GIS based system, theoretically has the ability to house reports. This group is tied to the desert managers group – Clarence Everly is a contact.

#### Section 4: Working Groups and Miscellaneous

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Suggestion: Use four break out groups as basis for work groups.

Suggestion: need administrator to handle list serve on PCA website

#### **Structural group:**

Assign an administrator

Jeff Crouse

Josh Hoines

Verlin Smith – BLM

Julie Plath

Kathleen Harcksen

#### **Plant list generating group:**

NDF role ? as to who

Ken Osler

Gayle Marrs- Smith

Alice Newton

Steve Planth

Kate Walker

Kari Yanskey

Von Winkle

### **Existing Facilities**

Ken Lucas

Mary Hershdorfer

Scott Lambert

New NDF nursery manager at Lake Mead

### **Research and development**

Synthesize the list of questions into something useful

Why and How type questions

Lesley Defalco

Matt Brooks

Ron Bolander at BLM

Von Winkle

*Add : Fred Edwards*

### **Plant materials increase strategies**

Ramona Gartner

Beth Hewitt

Ted Angle

Wendel Hassell

Don Bermatt

Ed Kliner

Suggestions:

Send out list of participants put on PCA

Distribute contact information, email list and addresses

Outreach effort for folks in California, Universities, Desert Managers Group, CNPS

Mojave chapter - Jim Andre chair, Russel scofield

### **What is the next step :**

Send conclusions and goals back to Harry Reid

Send out synthesis out to participants

Plant conservation alliance web site - Olivia Kwong as contact for PCA website

Summary given by Steve to Senator Harry Reid Staffer:

- We met for two days to discuss the topic of native seed needs in the Mojave desert.
- On Tuesday heard a talk from Peggy Ollwell from Washington BLM to talk about strategies for addressing this issue.
- We also heard from folks regarding research needs

- In the afternoon we heard from folks on how the Great Basin Project works
- On Wednesday we talked about the integrated component of a project and how to best address the issue.
- Needs were discussed: what species, facilities - common gardens, greenhouses.
- Research needs were discussed – the why and how to effectively use plant materials.
- This was a free flowing discussion with a lot of folks from the commercial sector and federal government. We heard about the need to better get the Federal government and private industry better working together
- We've taken notes and will put this together into a summary of the meeting

**Closing remarks:**

Throw open to floor – anything we need closure on?

The information discussed in this room should not just stay here in Las Vegas, spread the word.

Peggy Olwell comment – Use the PCA web site – it is a valuable resource that needs to be used

Thanks Steve for your effort

How do we get these subgroups going? No good answer but Steve has everyone's names and email address and will share them.

If the groups want to form now they can.....