
NATIVE SPECIES SEED AVAILABILITY (OR ELSE)

Native Plant Workshop

April 1&2, 2009

Ontario, OR



Stanford Young, UCIA, USU

Logan, UT

ASSOCIATION OF OFFICIAL SEED CERTIFYING AGENCIES

GENETIC AND CROP STANDARDS

Genetic Seed Certification Standards

General Requirements for Seed Certification

I. GENERAL

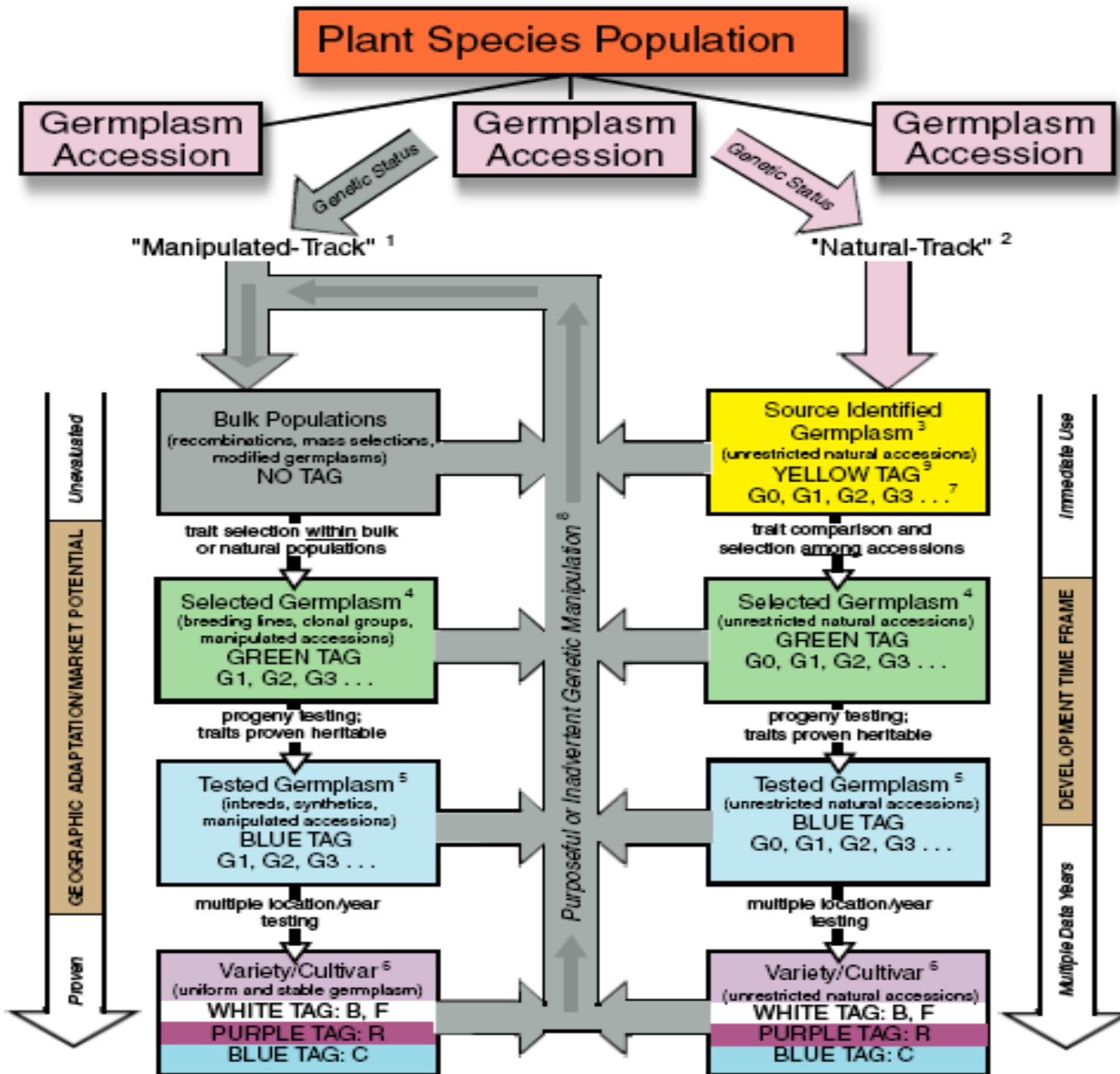
The following standards are the minimum standards required for the certification of seed for variety identity* and genetic purity** by vested member agencies of the Association of Official Seed Certifying Agencies (AOSCA). This seed certification program shall cover planting stocks of varieties (hereinafter to be considered synonymous with cultivar) or germplasm entities*** produced, conditioned, sampled, and labeled in accordance with the seed certification standards of AOSCA.

*The term “varietal identity”, as used in this publication, is defined as, and limited to, the verification of the identity of a variety, cultivar, or germplasm entity through 1) documentation of the pedigree, i.e., tracing the particular cycle of reproduction back to its origins with the developer, and 2) the application of the developer’s variety/germplasm description for certain visible, phenotypic traits in field inspections and seed laboratory analysis.

**The term “genetic purity”, as used in this publication, is defined as, and limited to, the application of these standards for certain phenotypic traits relative to the developer’s description of the variety/germplasm. In the context of this publication, “genetic purity” should not be interpreted to imply verification of genotype or verification of all described traits.

*** See Pre-variety germplasm requirements and standards.

NOMENCLATURE AND LABELING FOR PLANT GERMPLASM TYPES



NOMENCLATURE AND LABELING FOR PLANT GERMPLASM TYPES

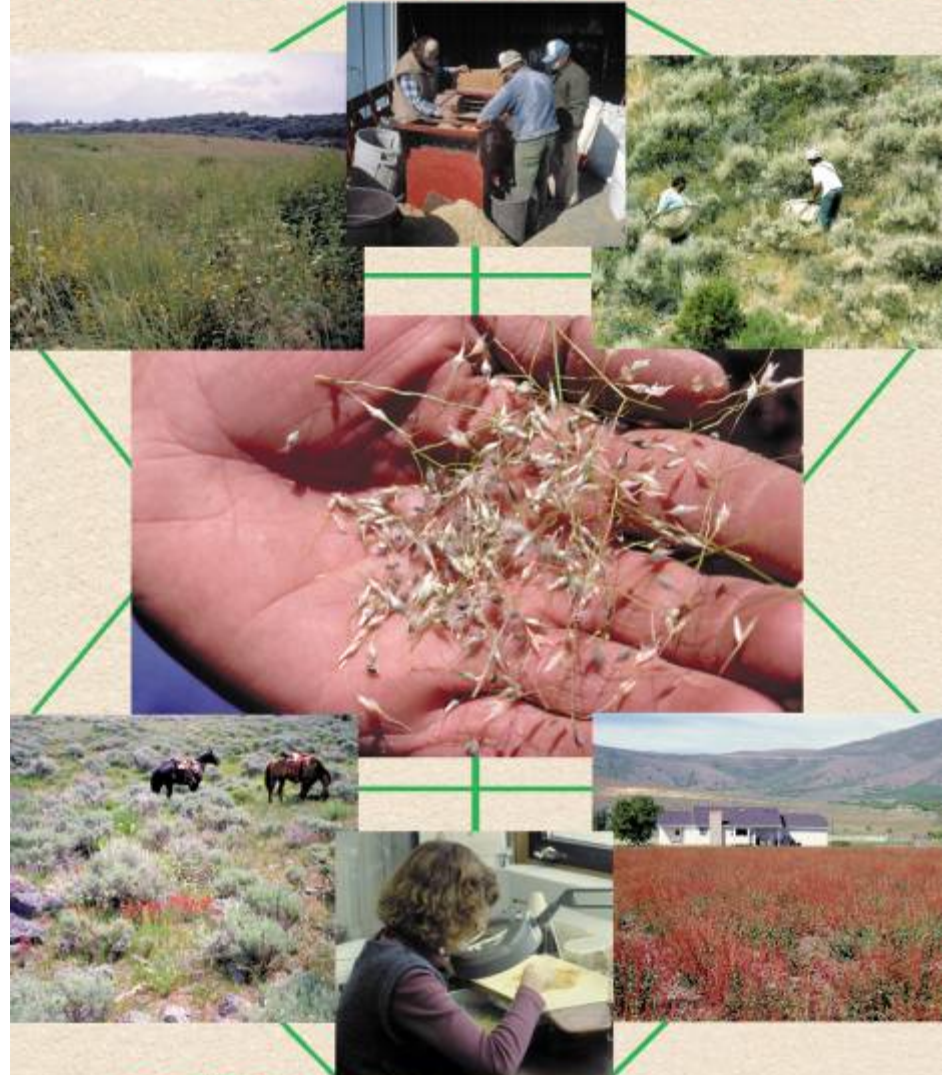
1. This involves "purposeful selection", such as recurrent selection, crosses within or between species, mutation inducement, biotechnology methods, etc.
2. Protocols should be established to minimize involuntary "non-purposeful" selection. If desired, the (Natural) designation may be printed on Source Identified, Selected, or Tested class or variety/cultivar Foundation, Registered, or Certified tags to indicate the "natural" genetic integrity of the germplasm collection, accession, or ecotype.
3. May be native or naturalized germplasm; wild collected or orchard produced. Tag must list geographic location of seed collection or production. Comparisons with other germplasm collections, accessions, or ecotypes of the same species not known.
4. Shows promise of superior and/or identifiable traits as contrasted with other germplasm accessions, breeding lines, or variety/cultivars of the species. Selection criteria and supporting comparative data is required. Seed of breeding lines at this stage would rarely be tagged; tagging and marketing wild collected or orchard produced seed of Selected class (Natural) germplasm may be commonly applicable in the reclamation seed industry.
5. Requires progeny testing to prove that traits of interest are heritable in succeeding generations. Testing procedures (number of sites, generations required, etc.) may be outlined for each species by individual seed certifying agencies.

Tagging of Tested class advanced generation breeding lines may be accommodated, but is normally pre-empted by cultivar release or discarding of the line. Tested class (Natural) wild collected or orchard produced germplasm may be tagged (as is customary for individual forest trees). Named variety release should also be a consideration if the germplasm has been tested in several locations and appears to have wide adaptation and usage demand.

6. Naming and recognition of a cultivar/variety must comply with Federal and State seed law definitions. Source Identified, Selected and Tested class germplasm, when identified with a descriptor term (i.e. number or place of origin designation) must include the fixed term "Germplasm" in order to avoid being construed as a variety name in commerce. Examples; ARS2936 Germplasm scarlet globemallow or Maybelle Germplasm antelope bitterbrush.
7. Designation of generations through which germplasm types may be multiplied. Source Identified, Selected and Tested germplasm types use a numeric generational succession: G0, G1, G2, etc. (refer to Pre-Variety Germplasm Certification Standards, Sec. I. B. 2.; 3.). Classes of named and released varieties/cultivars are: B= Breeder, F=Foundation, R=Registered, C=Certified (refer to Genetic Seed Certification Standards, III.; IV.).
8. When germplasm at any stage can be shown to have been significantly altered from the original collection or accession, it loses its non-manipulated (Natural) status and is routed to the bulk population (manipulated germplasm) track.
9. Tags are issued by individual seed certification agencies and clearly state the class of seed in block letters across the top of the tag. Tags also normally display agency insignia or logo along with other information that identifies and/or describes the variety or germplasm.

AOSCA.org

THE AOSCA NATIVE PLANT CONNECTION



Association of
Official Seed
Certifying Agencies

GUIDELINES FOR PERMITTING AND CERTIFICATION OF WILDLAND COLLECTED SEED

Large-scale disturbance of ecosystems, whether human-caused or the result of natural events (e.g., fire, floods, etc.), frequently requires mitigation to restore, revegetate, improve, or stabilize natural communities. Demand for the resources needed to complete corrective and improvement activities increases with increase in human activity on these communities. Seeds needed to accomplish these corrective measures are a basic resource often limited in quantity and quality. To meet present and future demands, sufficient quantities of seed from numerous species must be available at reasonable cost. Though many species may be suited for field cultivation, seeds of a majority of species will continue to be collected from wildland populations.

Much of these wildlands are public and permits are required for harvesting. Considerable inconsistency exists among and within each Land Management Agency (LMA) on how and when permits are issued. This is due, in part, to incomplete knowledge by LMA personnel of the market dynamics peculiar to this industry resulting in difficulty in assessing appropriate fees. Ultimately, inconsistency creates frustration, resulting in low levels of compliance, a phenomenon experienced with other specialty products collected from public lands.

One mission of LMA's is to promote development of rural economies, as long as this can be done without jeopardizing resources. Responsible seed collecting is compatible with other uses (e.g., livestock grazing, recreation, etc.) and has little or no long-term effect on stand health. Requirements placed on collectors and brokers should not be burdensome. Clearly, by collecting and marketing seeds from hundreds of species, this industry provides a resource that can not be obtained by any other reasonable means.

Many species are represented by numerous genetically distinct races or ecotypes. They reflect differential adaptation to variation in soils, climates, disturbance regimes, etc. across the species range of distribution. Success in using a particular species is often dependent on the use of seed from an adapted race. Although races of a few species have had considerable testing, huge gaps remain in our understanding of race adaptability for most species. Consequently, decisions about which race to seed on a particular site should generally be based on an evaluation of the physical and biological environment of the collection and seeding sites. Unfortunately, seed users have found accurate collection site information to be largely unavailable.

**SEED CERTIFICATION AGENCY
(SCA)**

**Certified Seed - SITE IDENTIFICATION LOG, PART 1
for Wildland Collected Material Intended
for Direct Sale and Revegetation Outplanting**

Inspection Fee¹ _____ Field Lot #² _____ Appl/Cert. # _____
Assigned by SCA _____

Collector³ _____ Address _____

Phone/Cell _____ Permit/Contract/Permission⁴ Public Private

Species Name _____ Common Name _____

Germplasm ID⁵ _____ Material Collected _____ Amount _____
e.g., seed, cuttings, etc. Bulk lb or volume

Species as Collected Indigenous to: Site County State Nonindigenous Unknown

Germplasm Category Source Identified Selected Tested Variety

Date(s) Collected _____ State _____ County _____ Elevation _____

Site Size/GPS⁶ _____

Site Description/Map⁶ _____

I attest that all above information is correct _____ Date _____
Signature of Collector

Uncleaned Sample Taken By⁷ _____ Plant Specimen Provided by⁸ _____

Site Inspection Completed _____ Date _____
Signature of SCA Representative

Conditioner Lot # _____ Date(s) Conditioned _____ Clean Seed Lb _____

I attest to the best of my knowledge, all above information is correct.

Signature of Seed Broker/Conditioner _____ Date _____

Seed Analysis? _____ # Tags _____ Approved⁹ _____
If Yes, List Seed Sampler and Lab _____ Date, initials of SCA Rep.

¹ Time/mileage charges may apply where special verification procedures are requested by a seed buyer or are judged necessary by the SCA.

² The collector or seed broker/conditioner must a) label all bags or containers with a field lot #, b) store so each field lot can be easily inspected, and c) blend field lots only by permission of SCA rep.

³ Major collector of material from this site. This form may be filled out by the major collector or by the Broker/Conditioner receiving the material, but in any case information must be correlated with the appropriate Pre-Collection form and applicant. List additional collector groups on a Site Inspection Log, Part 1 Addendum. (\$10 fee for each group)

⁴ Attach copy(s) of permits, contracts, or permission forms or letters. Field bulk pounds collected on public lands not covered by applicable documents will not be eligible for tagging by the SCA.

⁵ Variety name if applicable, or enter a germplasm identification (site name or number) if one is given by the collector or public or private germplasm developer (e.g. Gold Strike variety or Nugget Gulch germplasm bluebunch wheatgrass).

SEED CERTIFICATION AGENCY (sca)

**Certified Seed - SITE IDENTIFICATION LOG, PART 2
for Wildland Collected Material
Utilized for G₀ Stock Seed¹**

Germplasm ID, Applicant	Inspection Fee ²	Appl/Cert # Field Lot #
Address _____		Phone/Cell _____
Species Name _____		Common Name _____
Plant Specimen(s) Provided By ⁴	_____	
⁵	Collector, Applicant, or Cert. Agency Rep.	
Site Photographs Provided By ⁶	_____	
⁶	Collector, Applicant, or Cert. Agency Rep.	
Species Distribution on Site	Soil Texture/Type _____	
Percent of Species Population Collected From _____ % Were Specific Plants Intentionally Selected to Collect		
From? _____ If Yes, Describe the Plant Characteristics Selected for _____		
⁸		
Site Physical Characteristics		
Associated Plant Species _____		
⁹		
Generations Permitted Beyond G ₀	_____	Length of Stand ⁹ _____

¹ Complete this form in addition to Site Inspection Log, Part 1, for wildland collected seed or other propagating material that is to be utilized for a) establishing Generation 1 production fields or orchards or b) strictly controlled ecosystem restoration projects. The purpose of this form is to provide further information regarding distribution of species, selectiveness in collection, and physical characteristics of site and associated species.

² If all information is provided at the time of original collection site inspection, then the minimum fee applies. Otherwise, time/mileage fees will be assessed (or minimum) if additional visit to site by SCA is required.

³ Applicant is person desiring to utilize this wildland collected accession as stock seed (or other propagative material) for field increase, and is not necessarily the same person listed as the collector and/or seed broker/conditioner listed on the SIL, Part 1.

⁴ All species must have a pressed, dried plant specimen (more than one if species population is heterogeneous) submitted when material is to be used for stock seed and/or for user specified restoration purposes. A fee surcharge may apply if specimen(s) is provided by SCA Rep.

⁵ Photo documentation must include a closeup shot(s) where individual plants of species are clearly defined, as well as a more distant shot(s) that shows details of the plant community and site geography. Attach photos or contact Certification Agency to arrange transmittal of digitized images. A fee surcharge may apply if photo is provided by SCA Rep.

⁶ Indicate how species collected is distributed on the site (e.g. patchy, uniform, abundant, sparse, etc.).

⁷ Indicate the soil texture/type the species on the site is growing on; describe in terms (or combination of terms) of coarse (sand, gravel), medium (loam), fine (clay), or organic (decayed plant material).

⁸ Indicate whether site appears natural, or describe any recent disturbance (e.g., fire, overgrazing, road cut, clear cut, chaining, etc.); describe local landscape features (e.g., rocky outcropping, pond, road or fence line, slope, aspect, etc.) and ecosystem vegetation type (e.g., wetland, upland meadow, salt desert, coniferous forest, sub-alpine, etc.).

⁹ This is normally a decision made jointly by the applicant, certification authority, and plant scientists familiar with the species ontogeny and reproductive type. For marketing purposes, the generation listed on the tag may be downgraded such that the seed would not be eligible for stock seed purposes. The tag may list both the generation of the tagged material and the number of generations permitted, e.g. G₂/G₄.

I attest that all the above information is correct and hereby apply to utilize this G₀ wildland collected seed for certified field production.

Wildland Certified Seed Collector

Workshop, 26Sep08, Ephraim, UT

- **Seed Collector/broker/dealer concerns:**
 - Inconsistent permit issuing policy between land management agencies
 - Inconsistent permit issuing policy within land management agencies
 - Unfair permit pricing for many species
 - Illegal and early picking going on
 - Inconsistent permit enforcement
 - Wildland collectors often feel unappreciated
-

WCSC Workshop (cont.)

- **BLM, SLC “Seed Collection Policy and Pricing” for Utah (revised 2008):**
 - Promote native seed availability for BLM and other public and private agency use (repair and maintain healthy watersheds, multiple use)
 - Receive fair market value for collected plant materials, discourage unauthorized collection
 - Permit cost (based on lb of rough seed material), sometimes competitive bids; ensure fairness
 - Comply with resource management plans (district level), but should bias towards collector accommodation
 - Enforcement of stipulations
-

WCSC Workshop (cont.)

■ **Ron Barton, State Trust Lands Enforcement Officer:**

- Utah Code 78-38-4.5; “Proof of ownership required to harvest or transport forest products or native vegetation”
 - Utah Code 76-6-408: “person who buys, receives, or obtains property “ (without proof of ownership) is “presumed to have bought, received, or obtained the property knowing it to have been stolen or unlawfully obtained”
 - Proof of ownership includes a “contract, permit, or other writing issued by the landowner or proper state or federal agency”
-

WCSC Workshop (cont.)

- **Reality of enforcing permit stipulations:
Who's on first?**
- Like it or not, seed brokers/dealers are the front line in permit enforcement
- If they buy seed without proper documentation, law enforcement can presume that they bought it knowing that it was “stolen property” or otherwise unlawfully obtained
- Incremental sales of pounds listed on permit possible?
Pounds bought, signatures and photocopy of permit
- Confiscation and disposal of illegally collected seed

WCSC Subcommittee Meeting

20Nov08

- Resolutions approved:
- Seed Brokers/Vendors will request legal proof of ownership (written permission form private landowner or original permit form BLM/USFS/State Lands), per state law 76-6-408, for all seed presented to them for purchase. Seed Broker/Vendors will agree to 1) not purchase seed from collector groups without such proof of ownership and 2) report any such offers to appropriate authorities
- A seed industry committee will provide input to the land management agencies regarding permit pricing, based on current and historical market levels (March for spring/summer collection and September for fall/winter collection). Agency permit cost per lb for bulk collected seed should be based on 3% to 5% of the standardized market price for each species, after adjusting for average cleanout during drying and conditioning and pls levels unique to each species

What are the types of “repair” available for disturbed sites in the GB?

- **REVEGETATION**
 - **RECLAMATION**
 - **REHABILITATION**
 - **RESTORATION**
-
- **Can the seed industry accommodate any and all of these choices? CONSIDER COST, PLANT MATERIALS.**
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ASTA (American Seed Trade Association) Position Statement (2004) “The Use of Local Native Seed”

- “The purpose of this Position Statement is to set a framework within which the land manager can make consistent decisions that the seed supplier can predict. Since the seed supplier must plan their crops one or more years in advance, a consistent and predictable use of materials will help insure that the correct species are produced in the quantities needed to service the land repair business.”
-

ASTA Guidelines:

- Identify a flexible set of goals and objectives for the land repair project
 - Carefully assess those goals and objectives to insure they are ecologically and economically achievable
 - Select plant materials that are consistent with the goals and objectives of the project
 - Select plant materials whose ecological and economic success to the project can be demonstrated by sound science
 - Select plant materials that are either currently available in the marketplace or can be acquired within a reasonable period of time
 - Change the goals and objectives of the project when they are difficult to attain because of ecological or economic constraints
 - Publish reports of project successes and failures and encourage research institutions to improve the techniques used for land repair
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ASTA Position Statement, Draft, March, 2009

The Selection of Plant Material for Use in Revegetation Projects: Varietal versus Non-Varietal Plant Species

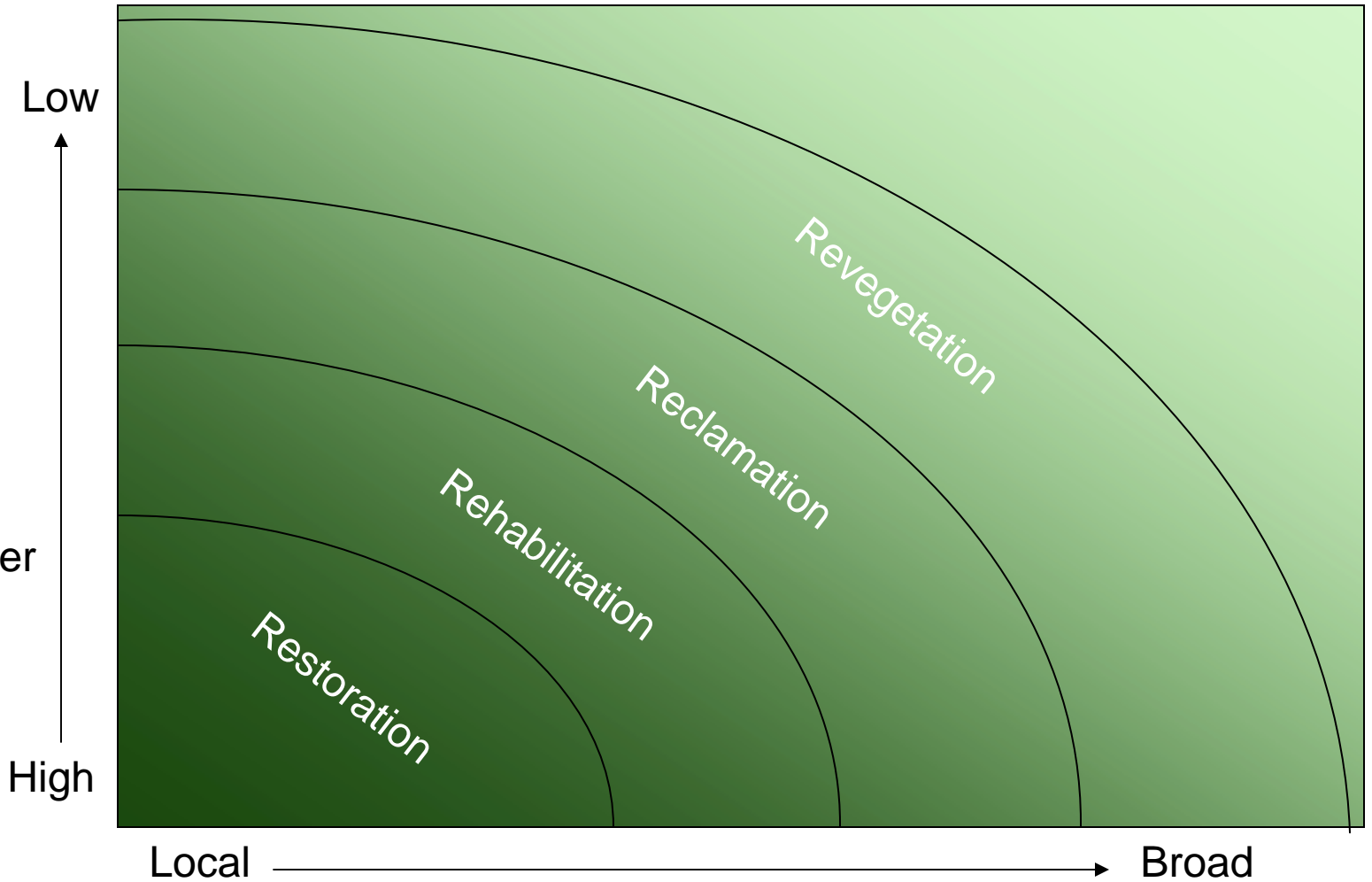
- ASTA believes that the term “appropriate plant materials” is defined as;
 - 1. Plant materials that will successfully germinate, co-exist, and persist without inappropriate human intervention
 - 2. Plant materials that are readily available in the market place
 - 3. Plant materials with a proven track record of success
 - 4. Plant materials which are more economical than the alternative, and whose performance is significantly indiscernible from the alternative

ASTA Draft 2009 (Cont.)

- ASTA believes it is inappropriate to use plant material that:
 - Is not readily available in the market place
 - Is not significantly proven to germinate, co-exist, and persist on the site being revegetated
 - Is more expensive than alternative plant materials whose performance has not been scientifically proven to outperform the less expensive alternative
-

Cost

- Money
- Minutes
- Manpower



Plant Materials

- Adaptability
- Applicability
- Availability

Plant Materials: Factors Affecting Seed Availability and Cost

- The species can be wild collected
- The species can be wild collected to some extent but may need field production also
- The species has to be field produced; stock seed for first fields can be wildland collected
- The species has to be field produced; stock seed for first fields also has to be small plot increased
- The species cannot logistically (economically) be wild collected or field produced for direct seeding
- Forget it. Or, transplants for critical species/areas

Considering All of the Above, What Steps Should Be Followed for land repair projects?

- Determine planting objectives for site or geographic area (land repair parameters)
 - Identify species wish list
 - Determine quantity of seed needed
 - Is it available?
 - What is it going to cost?
-

Reclamation Seed Availability Issues

Stan Young (UCIA) and Dan Ogle (NRCS)

Idaho-Nevada-Utah
Interagency Plant Materials Committee
May 20, 2008, Utah Botanical Center
Kaysville, UT

Re-Hash for Native Plant Summit, March 24-26, 2009

Re-Hash for Native Plant Workshop, April 1-2, 2009

Problem:

- ◆ Seed demand fluctuates (wildfires)
- ◆ Predicting demand difficult for seed industry
- ◆ Extreme spikes of over-supply or deficits
- ◆ Seed cost follows spikes, affects planting plans for major users
- ◆ Non-major users whipsawed even more

Possible solutions

- ◆ **Decrease fluctuations in seed demand**
 1. Make “wildfires” more predictable
 1. Proscribed burns (under control)
 2. increase annual large size non-fire project planting plans
 2. Increase warehouse capacity for major users
 1. Even out seed market demands and pricing with consistent purchasing
- 2. **All of the above may require a change in funding strategies at the federal level**

Possible Solutions (Cont.)

(Decrease fluctuations in seed demand)

- ◆ **Increase species diversity available in the marketplace**
 1. Coordinate and ease permit requirements to allow for more wildland collecting (if you spec it, they will collect it, often more economically than field growing)
 2. When sufficient wildland seed collection is not possible, pool accessions from geographic areas (the larger the better) so sufficient stock seed is available for efficient field production
 3. This will cut down on the number of separate accessions we ask the seed industry to provide (“recreational redundancy “ by germplasm developers and/or seed users)

Questions and Comments

- Appointments for Browbeating

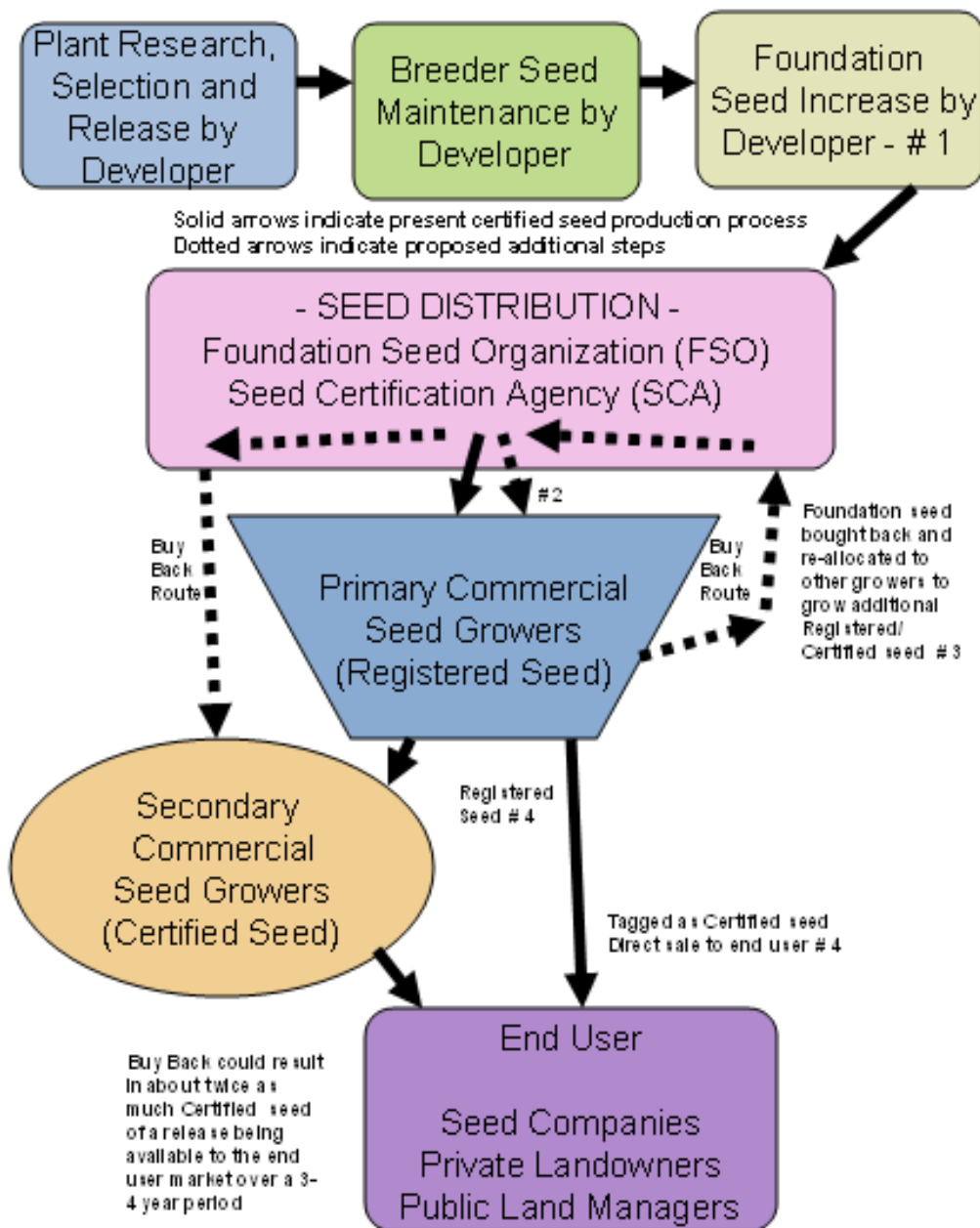


Possible Solutions (Cont.)

(Decrease fluctuations in seed demand)

- ◆ **Increase in general the amount of stock seed so potential field production of reclamation varieties or germplasms is not limited**
- 1. NRCS-PMCs, ARS, FS, etc. could produce more Foundation /stock seed
- 2. Additional land, labor, and infrastructure is prohibitively expensive
- 3. Plant germplasm developers and FSO/SCA could establish buy-back contracts; additional stock seed available to secondary producers
- 4. Forward contracted buy-backs would require startup funds: \$125,000 plus annual maintenance funds of \$25,000 . Relatively, this may be cheap
- 5. How would this work? Pay attention to next slide.

RECLAMATION SEED INCREASE PROGRAM STOCK SEED BUY-BACK OPTION



1 Seed tags, technical data sheets and/or a release notice is necessary to enter fields into official seed certification programs. Foundation seed increase is costly and quantities are limited.

2 Growers would sign a Buy-Back contract which gives the Foundation Seed Organization (FSO) or Seed Certification Agency (SCA) the option to buy-back Foundation quality seed at pre-negotiated and market related quantities and prices.

3 FSO/SCA would need funding to buy back Foundation seed from primary commercial growers (under contract) and then would sell seed to other commercial growers. FSO/SCA would need to charge approximately 25 percent for direct overhead costs and the remaining funds would go back into the buy-back fund for future purchases. Salaries and benefits for additional personnel to administer this program may not be covered by the overhead charged and may require additional funding sources.

4 The described production of seed (solid arrows: Foundation, Registered, and Certified) is possible without a Foundation seed buy-back program. However, commercial producers have historically avoided the Secondary Commercial Seed Production step. This leads to a Registered seed shortage which delays additional certified seed production fields being planted. This shortage would be solved by making additional Foundation seed available.

Working with Seed Industry

- Tell them what you want, in what quantities
 - Give as much lead time as possible
 - They will supply it (for a price)
-

Goal: Increase Seed Availability

Reduce Price

- Enlarge geographic area of germplasm applicability (draw provenance map bigger, pool accessions, continue development towards widely adapted varieties, etc.)
 - Expand warehouse capacities and non-emergency seed buys
 - Forward contract at target prices for key species not available in sufficient quantities in the marketplace; this will jump-start wider industry production
 - Fine tune for certain critical species with stock seed buyback, agency on-site increases, master gardener involvement, etc.
-