

Crested Wheatgrass Diversification: PRACTICAL EXPERIENCES



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Long-Term Thinking

- What is reasonable timeline for success?



Overview

- ❑ Plant Material Development
- ❑ Site Preparation
- ❑ Planting
- ❑ Post Planting Weed Control
- ❑ Forb planting

Plant Material Development

- Are appropriate species/genetics available for your site?
- Timeline for development include the following:
 - 1-2 years for grasses
 - 2-3 years for forbs

Timeline	Year 1				Year 2				Year 3				Year 4			
Task	Winter	Spring	Summer	Fall	Winter	Spring	Summer	Fall	Winter	Spring	Summer	Fall	Winter	Spring	Summer	Fall
Wild Collection																
Increasing																
Grass																
Forb																

- Can overlap with site prep

Developing Appropriate Genetics

- Begins with a genetically diverse wild collection



Seed Increasing

- Continues with intensive agricultural methods and weed control



Weeding between rows of an established Sandberg's bluegrass (*Poa secunda*) stand with a chisel plow.



Hand weeding a young Idaho fescue (*Festuca idahoensis*) field

Grass Production



Prairie Junegrass (*Koeleria macrantha*)



Sandberg's bluegrass (*Poa secunda*)

Forb Production



Arrowleaf balsamroot (*Balsamorhiza sagittata*), Wyeth's buckwheat (*Eriogonum heracleoides*), Venus Penstemon (*Penstemon venustus*), and Shaggy Fleabane Daisy (*Erigeron pumilis*).

Harvest Management



Combining a swathed bluebunch (*Pseudoroegneria spicata*) wheatgrass field



Silvery lupine (*Lupinus argenteus*)
hand harvest

Seed Cleaning/Storage



Seed cleaning mill



Seed storage warehouse

Planting Process...

- Site Preparation – Approx 15 months
- Staged Planting – Grasses first, then interseed forbs/shrubs

Timeline	Year 1				Year 2				Year 3			
Task	Winter	Spring	Summer	Fall	Winter	Spring	Summer	Fall	Winter	Spring	Summer	Fall
Site Preparation												
Mowing												
Harrowing												
Initial Herbicide Application												
Follow-up Herbicide/Mowing												
Pre-planting Weed Control												
Grass Planting												
Broadleaf Weed Control #1												
Broadleaf Weed Control #2												
Forb/Shrub Planting												
Monitoring (Key Times)						X	X	X		X	X	

Site Preparation

- ❑ Control of Pre-existing Vegetation
- ❑ Seedbank Depletion
- ❑ Residue Management
- ❑ Seedbed Preparation

Mowing



Rotary Blade Mower

- Several weeks after mowing

Harrowing

- A spring-tine heavy harrow is used



Herbicide Application

- ❑ Mid-Spring Heavy Round-Up
- ❑ Summer Round-Up/Broadleaf Selective



Ready to Plant...



Seeding

- ❑ Seeding occurs in late fall
- ❑ Rangeland drills help with accurate seed placement



Spring After Planting

- Continue annual broadleaf control through spring and summer



Forb Inter-seeding



- Forbs are drilled the fall after grass seeding

Establishment Success

- ▣ Three years post-planting



Long-Term Success



Summary

- ❑ Multiple year, aggressive process
- ❑ Plant material development takes 2-3 years
- ❑ Site preparation and planting takes 3 years
- ❑ Planning and funding are not included!!
- ❑ Once established, have patience

Questions??

