

# The Colorado Seed Tool

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or



Colorado Seed Tool



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## What can I do?

Generate a **seed menu** of candidate species that are likely to establish at your site, or enter species from a seed mix to **verify establishment likelihood** at your location.



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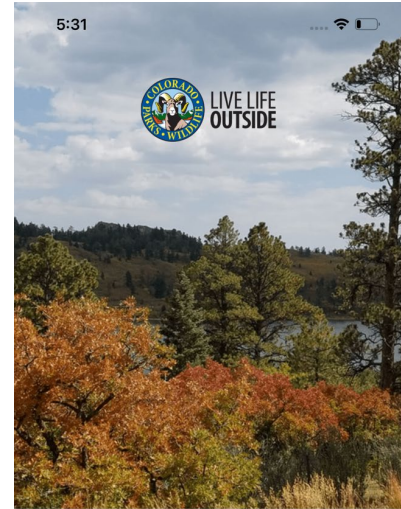


## What do I need?

You'll need a **general knowledge** of your site (county, elevation, soil texture, and special conditions) and identification of up to 3 management goals.



Next



## What do I get?

A **detailed, sharable PDF** that will help your seeding efforts meet your management goals with as much success as possible.



Next



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10:32 🐾

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**Welcome!**

What would you like to do?

[Produce Seed Menu](#)

[Verify Seed Mix](#)

[Accessibility Info](#)

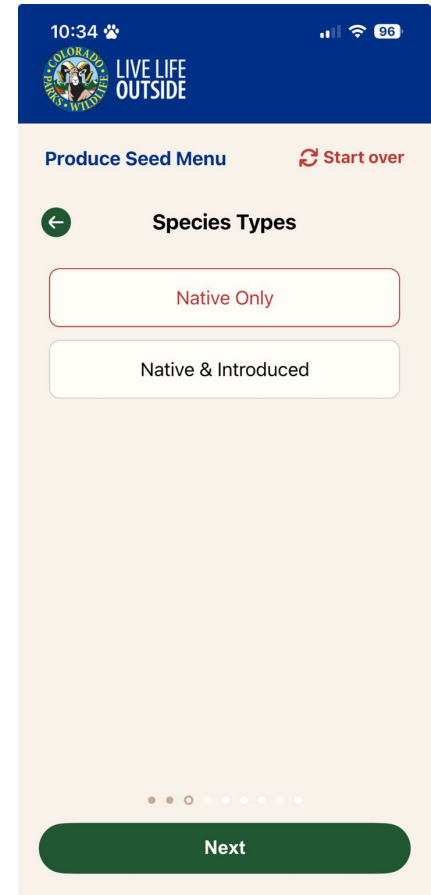
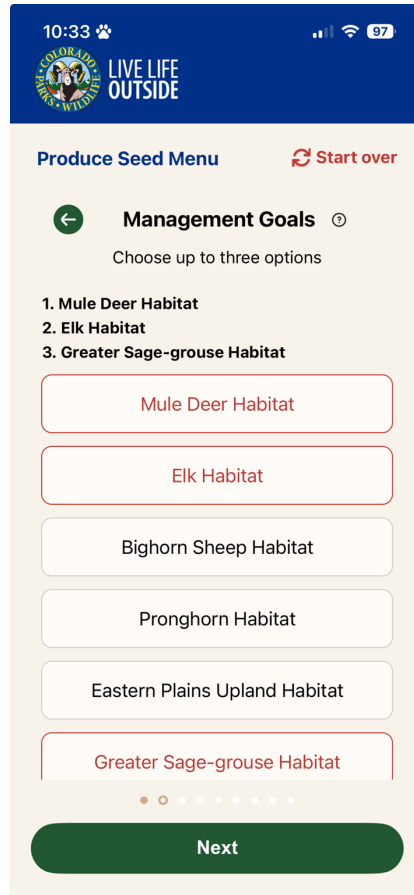
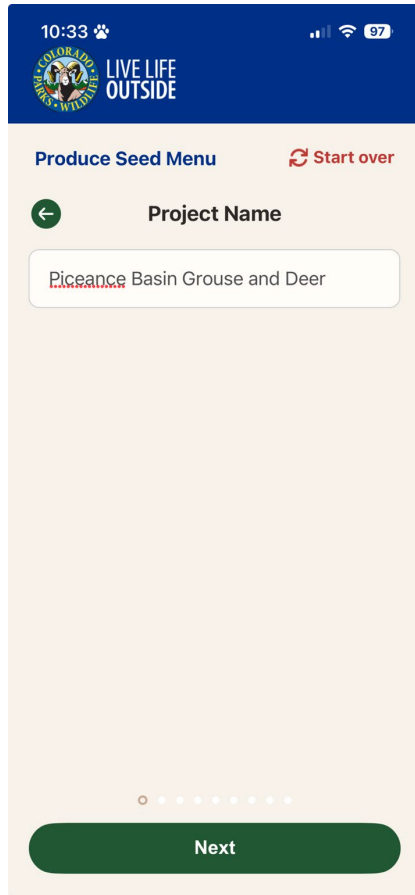
[How do I use this app?](#)

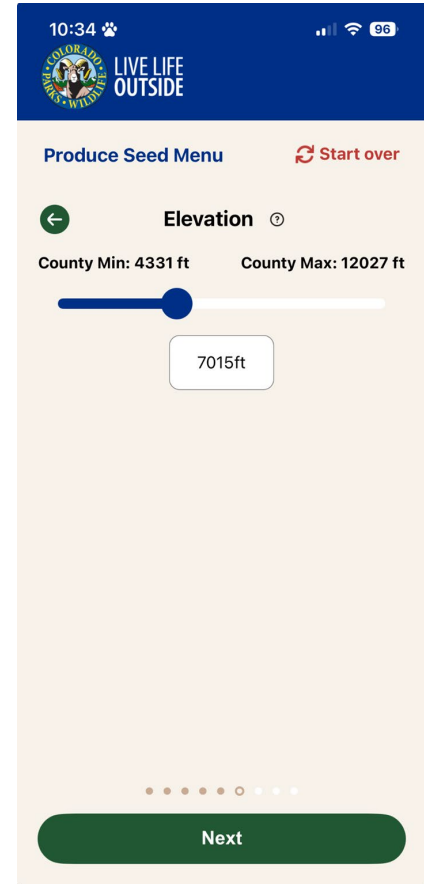
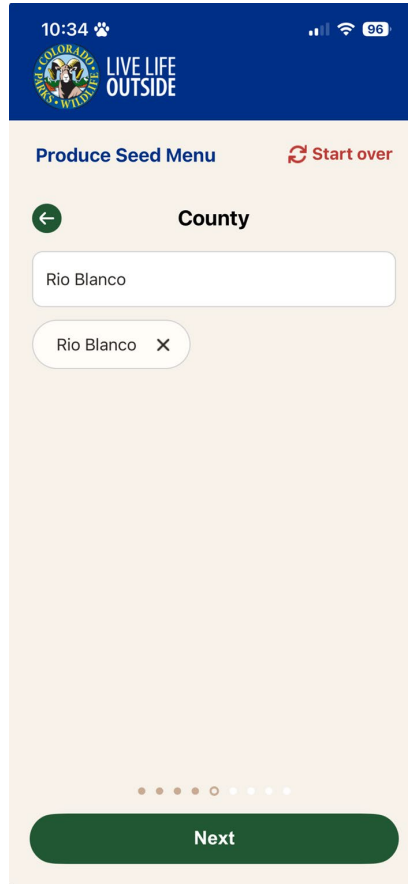
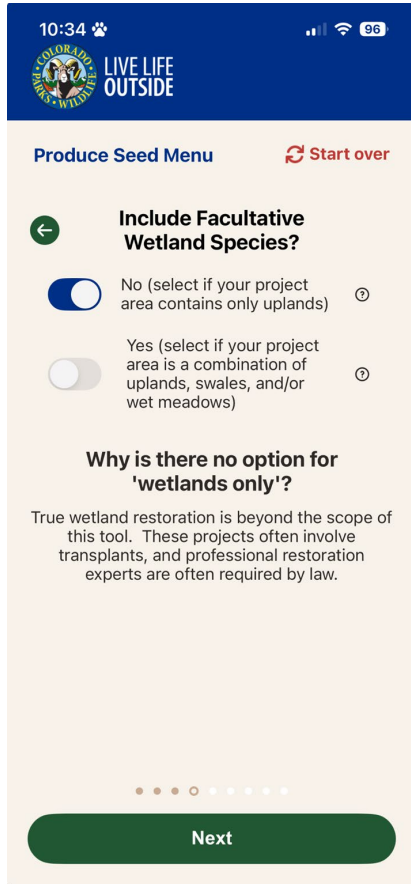
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10:35

LIVE LIFE OUTSIDE

Produce Seed Menu Start over

**Precipitation** ⓘ  
*Optional*

12 in/yr

.....

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LIVE LIFE OUTSIDE

Produce Seed Menu Start over

**Soil Texture**

Gravel

Sand

**Loam**

Silt

Clay

Unknown

.....

**Next**

10:35

LIVE LIFE OUTSIDE

Produce Seed Menu Start over

**Other Conditions** ⓘ

Do you have any of these special conditions? Select all that apply.

Highly Acidic Soils

Highly Basic Soils

Saline Soils

Calciferous Soils (CaCO3)

Metal Contaminated Soils

Frequent Disturbance/Traffic

Episodic Flooding

.....

**Skip**




Full Results

Provide Comments

Discussion Forum

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**Results Preview**



GRASS

**Bluebunch wheatgrass**  
*Pseudoroegneria spicata*


PROVEN



GRASS

**Green needlegrass**  
*Nassella viridula*


PROVEN



GRASS

**Indian Ricegrass**  
*Achnatherum hymenoides*

PROVEN



GRASS

**Slender wheatgrass**  
*Elymus trachycaulus*

PROVEN



**Bluebunch wheatgrass**  
*Pseudoroegneria spicata*

PROVEN

Plant Type \_\_\_\_\_  
Native

Bunchgrass / sodforming \_\_\_\_\_  
Bunchgrass

Annual / Biennial / Perennial \_\_\_\_\_  
Perennial

Nitrogen Fixing \_\_\_\_\_  
No

Lifespan \_\_\_\_\_  
Long

Season \_\_\_\_\_  
Cool

Seeding Depth \_\_\_\_\_  
0.25 - 0.75 in

Seeding Season \_\_\_\_\_  
Spring / Fall

Number of Seeds per Pound \_\_\_\_\_

C O L O R A D O P A R K S & W I L D L I F E

# Piceance Basin Grouse and Deer

SEED MENU - FEBRUARY 3, 2026



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# Suitability Chart

## Seed Menu

For more information, click on the name.

### Grasses

Adaptability				Precip. Need	Management Goals		
Name	Variety or Source	Comments	Qualities	Minimum Precipitation (in)	Mule Deer Habitat	Elk Habitat	Greater Sage-grouse Habitat
Bluebunch wheatgrass <i>Pseudoroegneria spicata</i>	Anaclone		<ul style="list-style-type: none"> <li>PERENNIAL</li> <li>NATIVE</li> <li>COMMERCIAL</li> <li>UPL</li> </ul>	8			
	Variety Not Stated						
	Columbia germplasm						
Green needlegrass <i>Nassella viridula</i>	Lodcorn		<ul style="list-style-type: none"> <li>PERENNIAL</li> <li>NATIVE</li> <li>COMMERCIAL</li> <li>UPL</li> </ul>	12			
	Variety Not Stated	<a href="#">INFO</a>					
	Fowler						
Indian Ricegrass <i>Achnatherum hymenoides</i>	Locally Collected		<ul style="list-style-type: none"> <li>PERENNIAL</li> <li>NATIVE</li> <li>COMMERCIAL</li> <li>UPL</li> </ul>	8			
	Rimrock						
	Paloma						
Slender wheatgrass <i>Elymus trachycaulus</i>	Variety Not Stated		<ul style="list-style-type: none"> <li>PERENNIAL</li> <li>NATIVE</li> <li>COMMERCIAL</li> <li>FACU</li> </ul>	10			
	Revenus						
	San Luis						



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# Species Details



## Green needlegrass

*Nassella viridula*

PROVEN

INFO

Plant Type	Height
Native	Medium
Variety or Source	Minimum Precipitation
AC Mallard, Cucharas Germplasm, Lodorm, Mandan 2724, Locally Collected, Fowler, Green stipagrass	12 in
Bunchgrass / Sodforming	Elevation
Bunchgrass	3,500 - 8,500 ft
Annual / Biennial / Perennial	Rooting Depth
Perennial	Deep
Nitrogen Fixing	Seed awns can be harmful to grazers if it is the only available forage.
No	
Lifespan	UPL
Medium	Upland: Almost always occurs in non-wetlands under natural conditions.
Season	Notes
Cool	None
Seeding Depth	
0.25 - 0.5 in	
Seeding	
Fall	
Number of Seeds per Pound	
147,581	

N Native

I Introduced

C Commercially available



## Idaho fescue

*Festuca idahoensis*

CAUTION

INFO

Plant Type	Height
Native	Tall
Variety or Source	Minimum Precipitation
Joseph, Nezpurs, Winchester germplasm, Locally Collected, Trident	12 in
Bunchgrass / Sodforming	Elevation
Bunchgrass	5,000 - 12,500 ft
Annual / Biennial / Perennial	Rooting Depth
Perennial	Deep
Nitrogen Fixing	CAUTION
No	local collection is best. Joseph and Nezpurs cultivars have very little genetic diversity and may not be adapted to your site.
Lifespan	INFO
Long	Facultative upland plant. Usually occur in non-wetlands but occasionally found in wetlands.
Season	
Cool	
Seeding Depth	FACU
0.25 - 0.5 in	Facultative Upland: Usually occurs in non-wetlands but occasionally found in wetlands.
Seeding	
Spring / Fall	
Number of Seeds per Pound	Notes
408,321	None



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# Suitability Chart

## Seed Mix Verification

For more information, click on the name.

### Grasses

Adaptability				Precip. Need	Management Goals		
Name	Variety or Source	Comments	Qualities	Minimum Precipitation (in)	Mule Deer Habitat	Elk Habitat	Greater Sage-grouse Habitat
Indian Ricegrass <i>Achnatherum hymenoides</i>	Locally Collected		PERENNIAL NATIVE COMMERCIAL UPL	8	Met	Met	Met
	Rimrock						
	Paloma						
Bottlebrush squirreltail <i>Elymus elymoides</i>	Locally Collected	CAUTION INFO	PERENNIAL NATIVE COMMERCIAL FACU	5	Met	Met	Met
	Fish Creek Germplasm						
	Wapiti Germplasm						
Crested wheatgrass <i>Agropyron cristatum</i>	Variety Not Stated		PERENNIAL INTRODUCED COMMERCIAL UPL	8	Not Met	Not Met	Not Met
	Ephraim	NOT RECOMMENDED					
	Hycrest						
Intermediate wheatgrass <i>Thinopyrum intermedium</i>	Luna	NOT RECOMMENDED	PERENNIAL INTRODUCED COMMERCIAL UPL	12	Not Met	Not Met	Not Met
	Manska						
	Variety Not Stated						



## Blooming/Greenup Chart

Blooming season (forbs) or greenup period (grasses and shrubs)

*For more information, click on the name.*

### Forbs

Name	January	February	March	April	May	June	July	August	September	October	November	December
Tapertip hawksbeard						Yellow	Yellow	Yellow				
Tarragon							Yellow	Yellow	Yellow	Yellow		
Tufted evening primrose				Yellow	Yellow	Yellow	Yellow	Yellow	Yellow			
Wavyleaf thistle						Yellow	Yellow	Yellow	Yellow	Yellow		
White prairie clover					Yellow	Yellow	Yellow	Yellow	Yellow			
Yellow owl's-clover							Yellow	Yellow	Yellow			
Silvery lupine						Yellow	Yellow					
Curlycup gumweed							Yellow	Yellow	Yellow			
Richardson's geranium		Yellow	Yellow	Yellow								
Spearleaf stonecrop					Yellow	Yellow	Yellow	Yellow	Yellow			



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# Where do these recommendations come from?

343 sources compiled

- Practitioner interviews: CPW staff, restoration companies, landowners, BLM, academics
- Existing seed mixes (e.g. NRCS, seed companies)
- Web sources (USDA plants database, herbarium network)
- Literature sources (Flora of Colorado, published works, technical notes)



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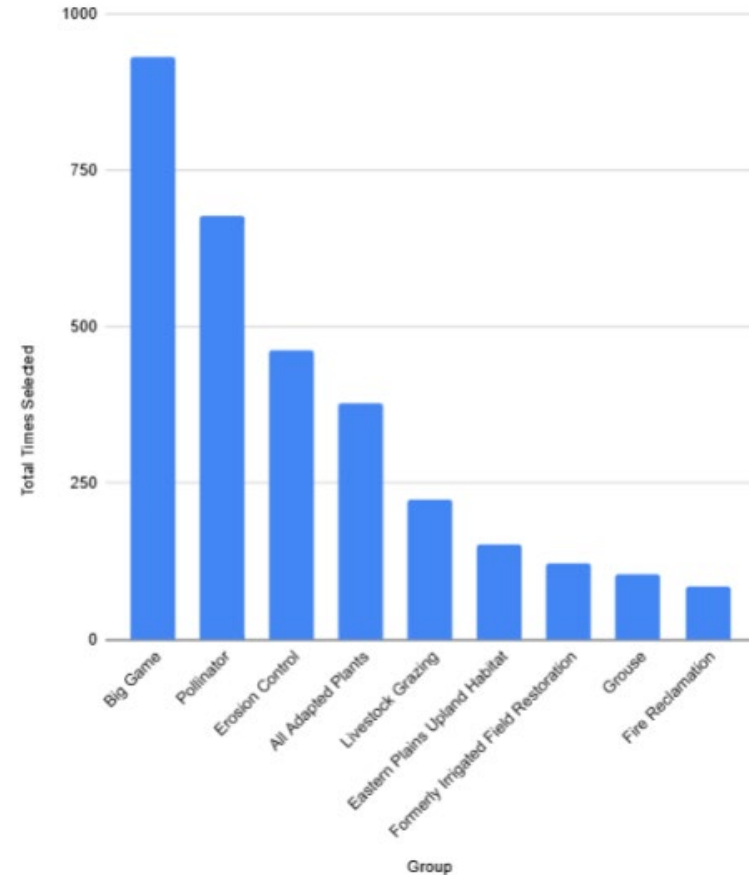
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# Colorado Seed Tool Use

Over 1,526 unique projects since launch!

Total Times Selected vs. Group



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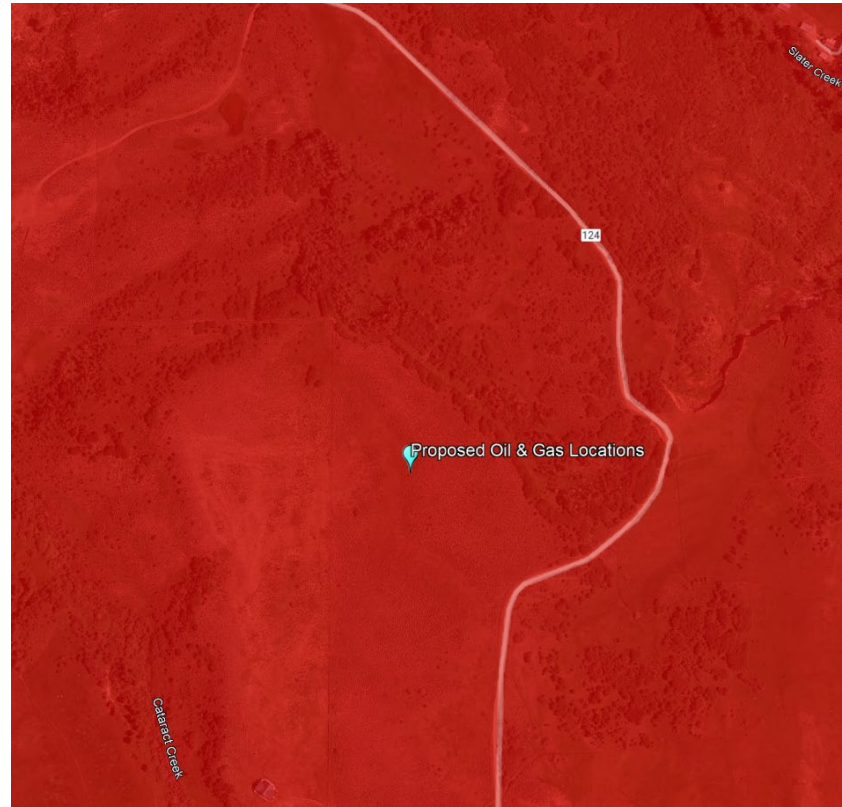
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# Case Study: Oil & Gas Locations

Elk Migration  
Elk Production

Greater sage-  
grouse GHMA

Columbian sharp-  
tailed grouse  
production



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# Case Study: Oil & Gas Locations

## 11.0 APPENDIX 2: NE REGION RECOMMENDED RECLAMATION SEED MIX

The following seed mix was reviewed and approved for reclamation work by CPW and Rocky Mountain Elk Foundation:

Reclamation Seed Mix			
Species	Type	PLS Lbs./Acre	Seeds/Ft <sup>2</sup>
Barley (Sterile)	Annual Cool	3.00	0.86
Winter Triticale (Sterile)	Annual Cool	3.00	0.90
Western Wheatgrass	Cool Grass	6.00	15.15
Slender Wheatgrass	Cool Grass	5.50	20.08
Sandberg Bluegrass	Cool Grass	1.00	3.24
Bottlebrush Squirreltail	Cool Grass	1.00	4.41
Rubber Rabbitbrush	Shrub	0.05	0.46
Fourwing Saltbrush	Shrub	1.00	1.19
Lewis Flax	Forb	0.25	1.68
Rocky Mountain Penstemon	Forb	0.05	0.68
Prairie Junegrass	Cool Grass	1.65	
Total:		22.50	48.65



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# Case Study: Slater Creek Oil & Gas Locations

**Triticale:** Triticale has utilization in certain scenarios, but we don't generally recommend it when planting perennial grasses or forbs. Triticale will negatively impact the establishment of the perennial species if it is green and actively growing alongside the planted perennial grasses and forbs. It can be useful for erosion control, food plots (primarily on the plains), and cover crops, but it may not be necessary at this site.

**Western Wheatgrass:** All varieties, especially Arriba, can outcompete other components of a seed mix. Apply at low rates only in areas where other options are limited.

**Bottlebrush Squirreltail:** Seed is hard to clean and may be more likely to be contaminated with weeds. Please request zero percent noxious weeds when buying.

**Sandberg Bluegrass:** The cultivar Canby is often provided by seed producers. Canby is more aggressive than wildland-collected sources.

This mix could be optimized by removing the sterile barley and winter triticale, removing Western Wheatgrass, and adding another forb.



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Full Results

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### Results Preview



**Bluebunch wheatgrass**  
*Pseudoroegneria spicata*

PROVEN



**Green needlegrass**  
*Nassella viridula*

PROVEN

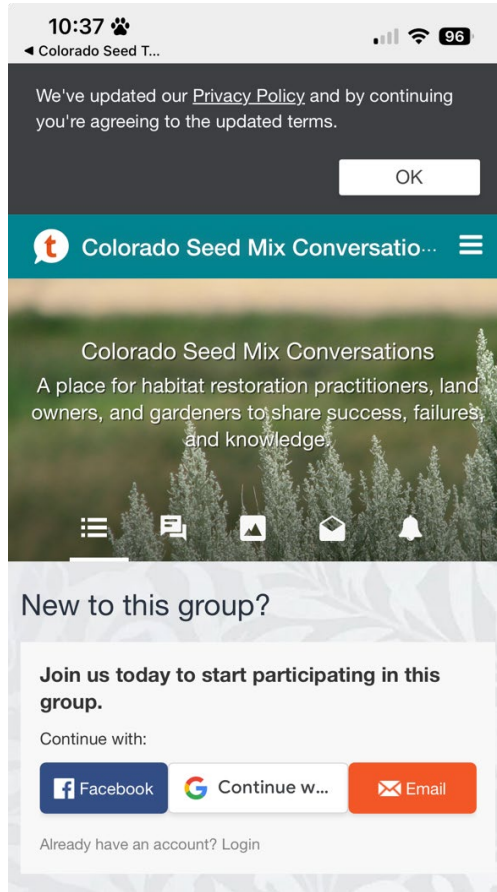
INFO



Indian



Slender



## FAQs include:

- My species list is too long! How can I target it?
- Where can I get seed?
- Putting seed in the ground
- Dry-up acre restoration
- Finalizing a seed mix

## Link to Colorado Seed Tool calculator



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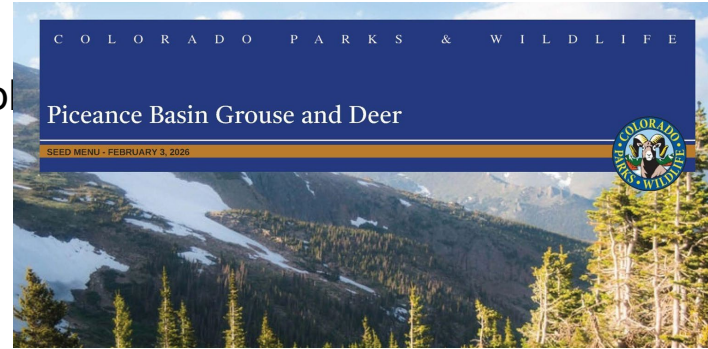
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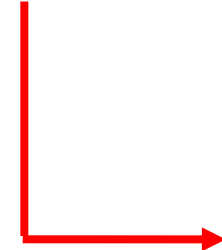
# How do we go from Seed Menu to Seed Mix?

## Piceance Basin Grouse and Deer example

- Seed menu output = 139 species
  - Grass species = 35
  - Forb species = 64
  - Shrub species = 35
  - Tree species = 3



How do we choose which species to include in our seed mix?



In a perfect world.....

We wouldn't have to, and wouldn't want to!

Ideally, we want a seed mix to be as diverse  
and as locally adapted as possible to increase  
our chances of seeding success



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In reality...

We have to narrow down our species selection

Real world constraints prevent us from being able to seed any species we want

Goal: to build a seed mix that is locally adapted and diverse enough to be successful  
but also sourceable and affordable

How do we get there??



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# How do we get there?

## Selecting Species: Commercial Availability

Commercial availability vs. capacity to collect- are the species of interest even for sale anywhere?

- Not all species are commercially available
- Plant materials can often be collected- can require significant amount of time, large crews, specialized equipment
  - Field collected materials need cleaned, tested



# How do we get there?

## Selecting species: Budget Constraints

Sometimes budget constraints force us to not plant certain species

- Certain desirable native plant seed can cost up to \$150/lb or more
  - Scarlet globemallow \$150-\$300 per lb
  - Desert princesplume \$6 per plant, \$18 per 5 seeds = \$1,218,603 per lb
- A reason to use nonnative plants when able?
  - Alfalfa \$3.50 per lb
  - Sainfoin \$2.70 per lb



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# Seeding rates

How do we decide the total density of seeds to plant?

How do we decide what percentage of each species to include?

- **Climate** - wet Eastern CO counties 20 seeds/sq ft., dry Western CO counties up to 70 seeds/sq ft (higher if sagebrush in mix)
- **Planting method** - broadcast seeding vs drill seeding, site preparation?
- **Project goals** - wildlife, pollinators, erosion control, livestock grazing
- **Seed size** - consider seeding smaller seeded species at a higher rate
- **Species aggression** - if aggressive species in mix consider seeding lighter rate



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wettest counties in eastern Colorado, 20 is enough. For dry parts of western Colorado, we recommend ~70. If you desire sagebrush at your site, increase this number by 8-16, because sagebrush should be seeded more heavily in terms of seed number

forbs	0.0	0.00
shrubs	0.0	0.00
grasses	0.0	0.00

#DIV/0! <- broadleaf/grass ratio.

<- enter the total project area in acres  
#DIV/0! <- price per acre

Type	Species/Variety	Percent of mix (%)	Seeds per square foot	Seeds per pound	pure live seed per acre PLS lb/ac	total pounds for project PLS lbs seed	Price per lb	Price per species	Notes
<b>GRASSES</b>									
			0.0						
			0.0						
			0.0						
			0.0						
			0.0						
			0.0						
			0.0						
			0.0						
			0.0						
			0.0						
<b>FORBS</b>									
			0.0						
			0.0						
			0.0						
			0.0						
			0.0						
			0.0						
<b>SHRUBS</b>									
			0.0						
			0.0						
			0.0						
			0.0						
			0.0						
<b>TOTALS:</b>			<b>0.0%</b>		<b>0.00</b>		<b>\$0.00</b>		







100	<- enter total number of seeds per square foot. For the wettest counties in eastern Colorado, 20 is enough. For dry parts of western Colorado, we recommend ~70. If you desire sagebrush at your site, increase this number by 8-16, because sagebrush should be seeded more heavily in terms of seed number	forbs	30.0	7.10	1.8 <- broadleaf/grass ratio.
		shrubs	25.5	3.07	
		grasses	31.5	2.41	
100	<- enter the total project area in acres				
\$338.49	<- price per acre				

Type	Species/Variety	Percent of mix (%)	Seeds per square foot	Seeds per pound	pure live seed per acre PLS lb/ac	total pounds for project PLS lbs seed	Price per lb	Price per species	Notes
<b>GRASSES</b>									
Cool	Bluebunch wheatgrass	1.00%	1.0	140,000	0.31	31.11	\$16.00	\$497.83	
Cool	Indian Ricegrass	1.50%	1.5	161,920	0.40	40.35	\$16.50	\$665.83	
Cool	Slender wheatgrass	1.50%	1.5	135,000	0.48	48.40	\$4.25	\$205.70	
Cool	Sandberg bluegrass	5.00%	5.0	941,917	0.23	23.12	\$10.50	\$242.79	
Warm	Blue grama	5.00%	5.0	1,050,371	0.21	20.74	\$23.00	\$476.92	
Cool	Bottlebrush squirreltail	1.00%	1.0	145,845	0.30	29.87	\$21.60	\$645.13	
Cool	Prairie junegrass	5.00%	5.0	1,584,976	0.14	13.74	\$65.00	\$893.20	
Warm	Sand dropseed	10.00%	10.0	3,700,260	0.12	11.77	\$22.00	\$258.99	
Warm	Little bluestem	1.50%	1.5	292,107	0.22	22.37	\$18.69	\$418.07	
<b>FORBS</b>									
Cool	Lewis flax	4.0%	4.0	294,848	0.59	59.09	\$25.00	\$1,477.37	
Warm	Rocky mountain penstemon	6.0%	6.0	489,888	0.53	53.35	\$65.00	\$3,467.81	
Warm	Sulphur-flower buckwheat	3.0%	3.0	209,500	0.62	62.38	\$98.50	\$6,144.14	
Warm	Western yarrow	10.0%	10.0	2,852,012	0.15	15.27	\$28.00	\$427.66	
Warm	Rocky mountain beeplant	4.0%	4.0	72,229	2.41	241.23	\$28.00	\$6,754.52	
Warm	Annual sunflower	3.0%	3.0	46,919	2.79	278.52	\$14.95	\$4,163.91	
<b>SHRUBS</b>									
	Antelope bitterbrush	0.5%	0.5	18,830	1.16	115.67	\$23.00	\$2,660.33	
	Fourwing saltbush	1.0%	1.0	52,590	0.83	82.83	\$13.00	\$1,076.78	
	Winterfat	1.0%	1.0	132,680	0.33	32.83	\$42.00	\$1,378.90	
	Wyoming sagebrush	20.0%	20.0	1,700,963	0.51	51.22	\$19.00	\$973.14	
	Whitestem rubber rabbitbrush	3.0%	3.0	545,365	0.24	23.96	\$42.55	\$1,019.58	
<b>TOTALS:</b>		<b>87.0%</b>			<b>12.58</b>			<b>\$33,848.60</b>	



# Acknowledgments

## CPW Project Leads

Dani Neumann  
Danielle Johnston  
Ben Wasserstein  
Teri Polley  
Eric Newkirk

## All Star Technicians

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Lauren Brandt

## CPW Internal

Trevor Balzer  
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Jeff Thompson

Additional CPW staff have contributed time and expertise to this tool, alongside the experts we've interviewed this year.



*Fetchly*

**Thank you to CPW's Habitat Partnership Program for providing critical funding to our app developer, Fetchly.**



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# How You Can Help

Please let us know about new plant materials and sources of information!  
Use the app comment form or email us.

**Please create a username on our forum & introduce yourself!**

Type this short link into your browser:  
[bit.ly/coseed](https://bit.ly/coseed)

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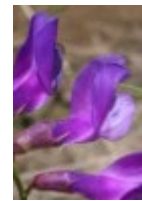


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# Questions ?



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