

Species and Cultivar Considerations

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Alberta Agriculture and Forestry





Make it easier to do the
right things right



Peace Forage Seeding Tool

An interactive forage seeding database for the Peace Region

[Species Options Tool](#)

[Seed Mix Calculator](#)

[Search](#)

[Species Ratings](#)

[Overview](#)

[Support](#)

[Suppliers](#)

Explore the species options form – [Species Options Tool](#)

Use a seed mix calculator – [CALC](#)

Browse the seed species table – [Species Ratings](#)

Explore the whole database – [Search](#)

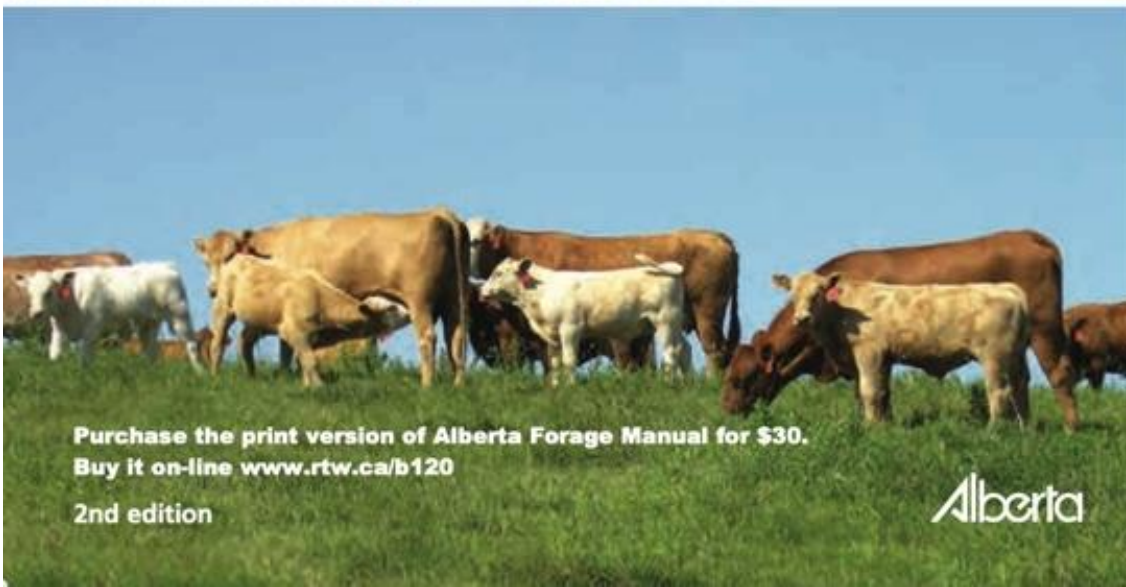
Read about the Project – [Overview](#)

Explore general information, tool instructions and Manual chapters – [Support](#)

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ALBERTA FORAGE MANUAL



Purchase the print version of Alberta Forage Manual for \$30.

Buy it on-line www.rtw.ca/b120

2nd edition

Alberta

An interactive forage species selection tool for Western Canada



Forages Suited
to My Field



Seeding Rate
Calculator



Forage Weed
Management

Funding Provided By

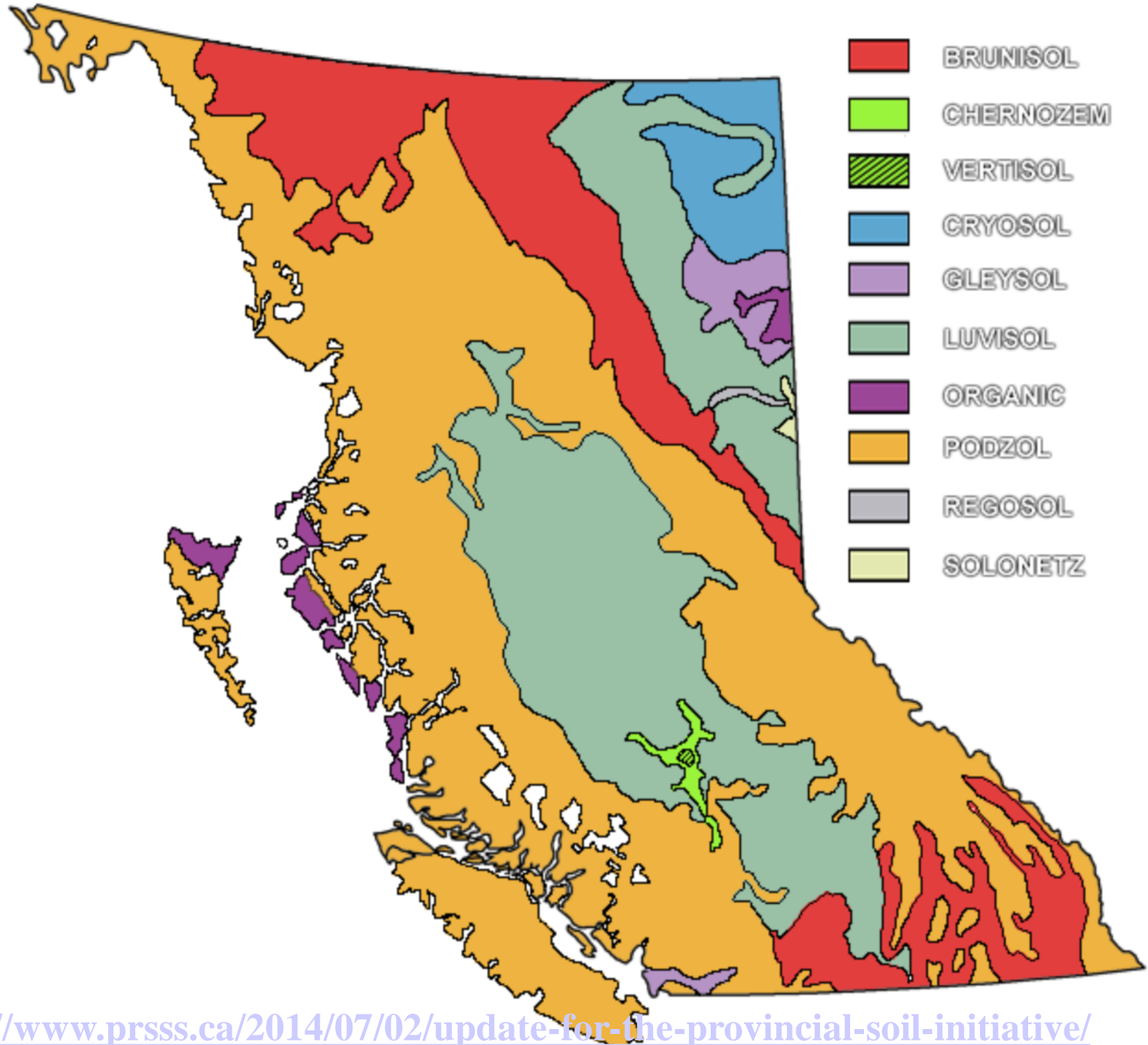


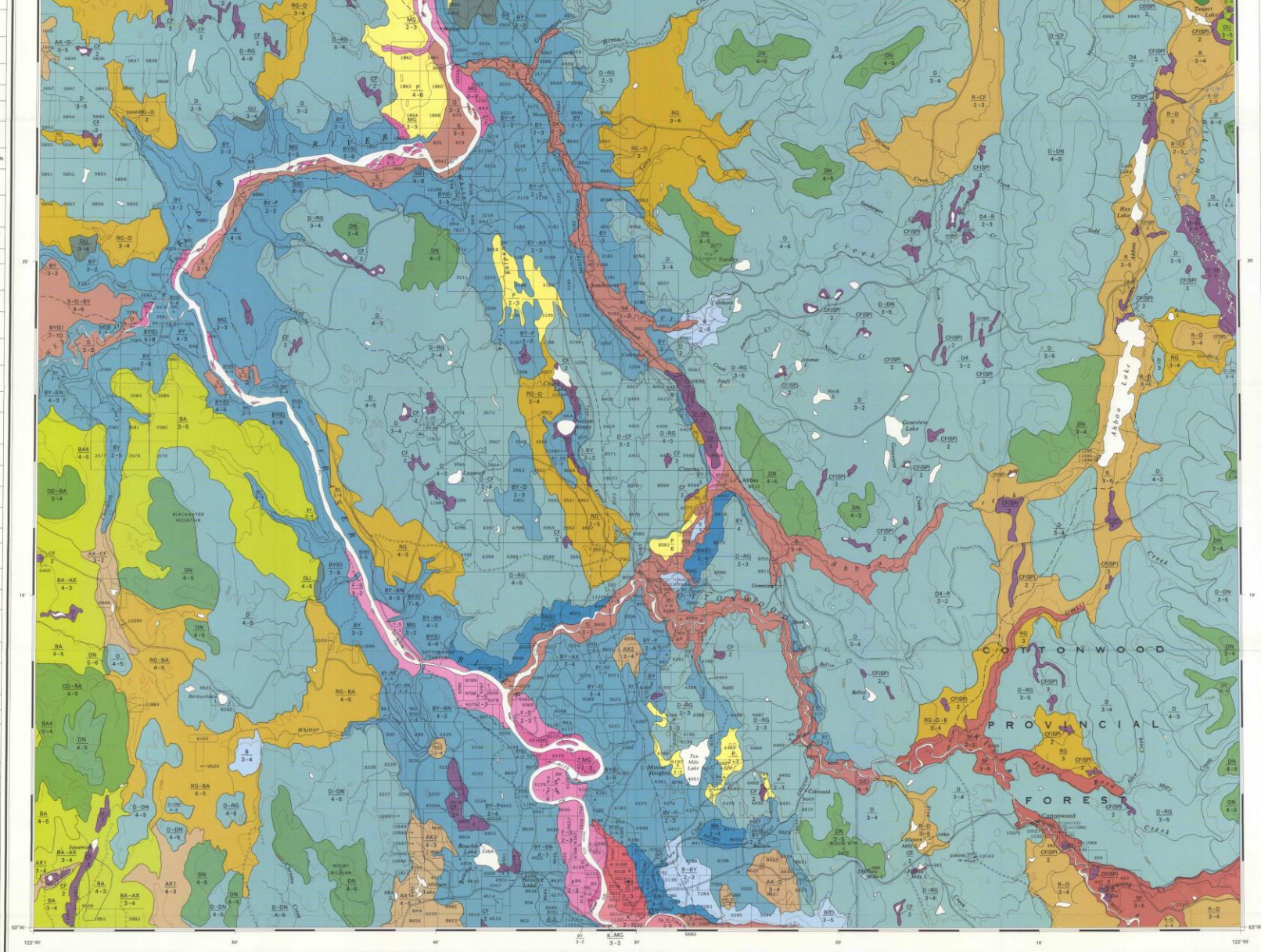
Forage U-Pick gratefully acknowledges the past projects that have been used to support its development.

[View our references and more](#)

Rough Rule of Thumb

- **Management -40**
- **Environment-40**
- **Species-20?**

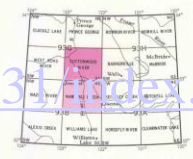




SOILS OF QUESNEL AREA BRITISH COLUMBIA

SOIL SURVEY REPORT 1-1

1:100,000



REFERENCES AND COMMENTS

Soil information by Land Resource Research Institute, Research Branch, Agriculture Canada, Vancouver, B.C.

Soil Data File contains physical and chemical data on most of the soils described in the area.

The Library, Temagami District Branch, Ministry of Agriculture, Research Station, Temagami, Ontario, Canada, has a copy of this report.

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SOIL CODE	SOIL NAME	SOIL DESCRIPTION
BA	BARNETT	Gravelly, sandy material and some stony, shallow glacial material
BA-AX	BARNETT-AXIA	Gravelly, sandy material and some stony, shallow glacial material
CF	CHIEF	Moderately stony, shallow glacial material
CFSP	CHIEF (shaded phase)	Underdeveloped, shallow glacial material, moderately decomposed, stony
CHSP-BASTON	CHIEF-BASTON	Stony and sandy, some material
D	DESERTS	Gravelly, sandy material
D4	DESERTS	Gravelly, sandy material
D6	DESERTS	Gravelly, sandy material
D-CF	DESERTS-CHIEF	Gravelly, sandy material and some stony, shallow glacial material
D-C	DESERTS-CHIEF	Gravelly, sandy material and some stony, shallow glacial material
D4-B	DESERTS-BARNETT	Gravelly, sandy material and some stony, shallow glacial material
D-DO	DESERTS-DOWN	Gravelly, sandy material
D-DN	DESERTS-DOWN	Gravelly, sandy material and some stony, shallow glacial material
D-RG	DESERTS-ROARING	Gravelly, sandy material and some stony, shallow glacial material
DO-D4	DOWN-DESERTS	Gravelly, sandy material and some stony, shallow glacial material
DO-DN	DOWN-DESERTS	Gravelly, sandy material and some stony, shallow glacial material
DO-DN	DOWN-DESERTS	Gravelly, sandy material and some stony, shallow glacial material
DR	DRAGON	Loamy and sandy, some material
DN	DUNKLEY	Fine, loamy material
DO-BA	DOWN-BARNETT	Gravelly, sandy material
R	RABBIT	Sandy, stony, shallow glacial material
R-CF	RABBIT-CHIEF	Sandy, stony, shallow glacial material and some organic material
R-D	RABBIT-DESERTS	Sandy, stony, shallow glacial material and some organic material
RG	ROARING	Sandy, stony, shallow glacial material
RG-BA	ROARING-BARNETT	Sandy, stony, shallow glacial material and some organic material
RG-D	ROARING-DESERTS	Sandy, stony, shallow glacial material and some organic material
RG-DN	ROARING-DESERTS	Sandy, stony, shallow glacial material and some organic material
RG-DN	ROARING-DESERTS	Sandy, stony, shallow glacial material and some organic material
SN	SHERIDAN	Gravelly, sandy material and some stony, shallow glacial material
SN-AX	SHERIDAN-AXIA	Gravelly, sandy material and some stony, shallow glacial material
SW	SWIFT	Gravelly, sandy material and some stony, shallow glacial material
TD-DN	TD-DN	Loamy and sandy material

NOTE: Mapping units with bold letter codes do not occur on the sheet.

1. **MAP UNIT:** A representation of a soil map of parts of the province of British Columbia. The map is divided into units, each of which is identified by a code. Each map is a total and not a partial. The legend, therefore, gives the full name of each unit. The legend also gives the full name of each unit. The legend also gives the full name of each unit.

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Rules of Thumb

~~Soil grows plants~~

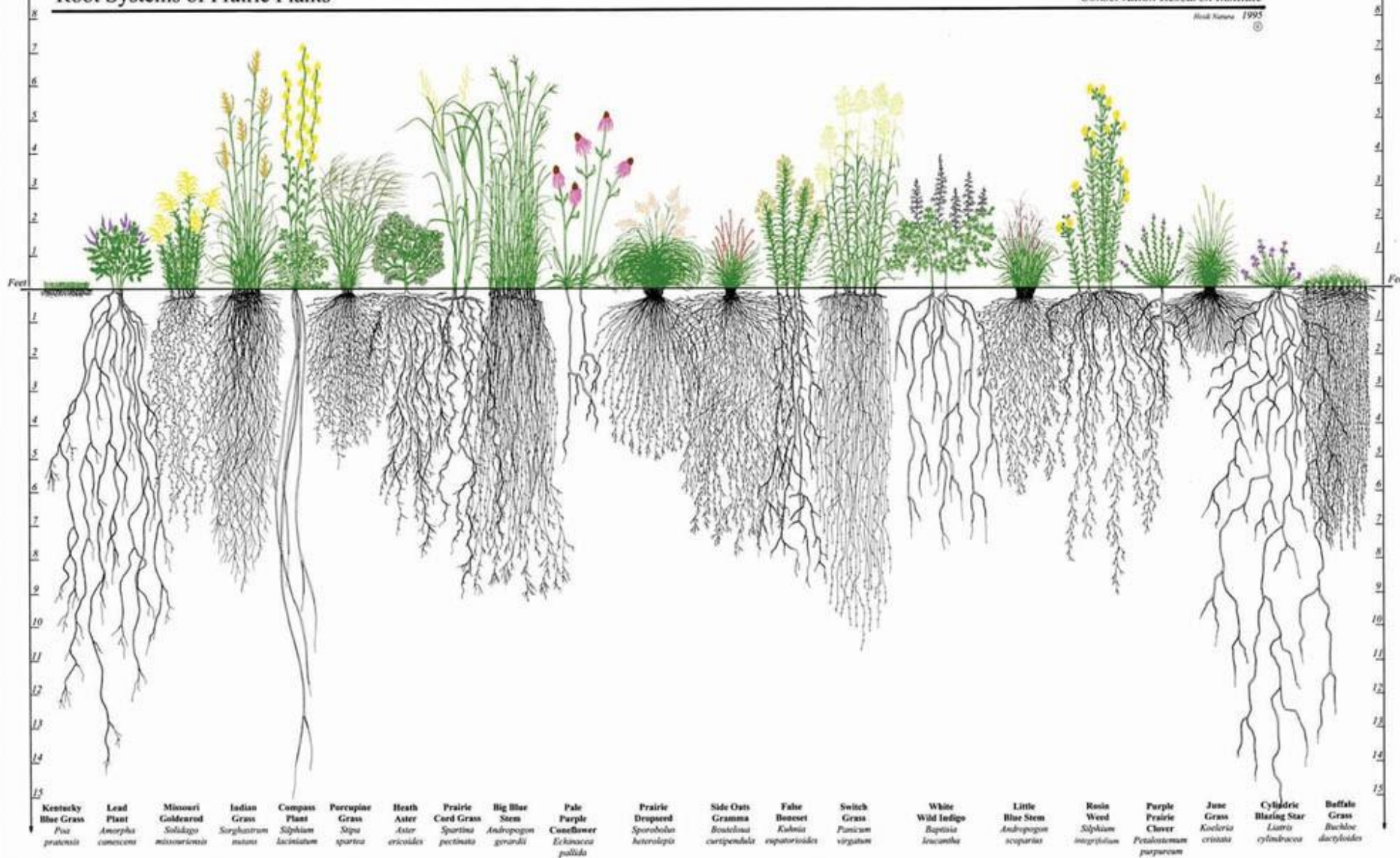
Plants grow soils

Dr. Christine Jones-

Prsn. Western Canadian Grazing Conference, Red Deer 2012

Principles to Increase Soil Health

- 1. Armor the soil**
- 2. Minimize soil disturbance**
- 3. Increase plant diversity and/or rotation**
- 4. Keep living roots in the ground longer**
- 5. Integrate livestock grazing**



Biodiverse Functional Traits enhance Ecology mimics Mother Nature

Source: Praire Grasslands Roots Conservation Research Institute, 1995

Plant Species Diversity

- Nutrient cycling
- Primary production

SO....

- Fills niches water, nutrient capture
- Better chance one or more species will be productive...even in variable weather, late grazing/haying, etc.

Source: Bittman, Hunt, et. Al., Cool Forage-Advanced Mngmt of Temperate Forages, Ch. 9 Biodiversity in Forage Stands p. 42-43.

Select the right forage species

- End use – hay, pasture, management systems
- Soil – type, pH, texture, problems (solonetzic, stony)
- Soil moisture during growing season
- Species adaptation – life span, cold tolerance, disease tolerance
- Get seed certificate, best adapted, persistent species

Hay Stand Objectives

- End use market
- Years left down
- Number of Cuts
- Harvesting Method
- Grazing also?

Pasture Mixtures

- Creeping grass
- Rapid regrowth grass
- Legume
- Root variation
- Growth timing

Seed Company Mixes

- **They are theirs not yours!**
- **Often has an annual in it**
- **Lower cost seed may be dominant**
- **Hardiness/Change of Cultivars**
- **Percentages of each confusing?**
- **Knowledge of weed seed content unknown?**
- **Coated or noncoated**

What Chosen-What Got-Why? Because...

- **Seed percentages/establishment**
- **Interspecies competition**
- **Natural stand thinning**
- **Pasture Naturalization**
- **Management/Fertility Effect**
- **Law of the most Aggressive**
- **Law of the most Limiting**

Soil Test and Balance Fertility

- **P₂O₅** **25-35 #**
- **K₂O** **300 #**
- **S** **15 - 20 #**
- **N** **5-10#**

Keys

- **Contact-Seed to Soil**
- **Control competition-
Above & Below ground**
- **Weather timing**
- **Manage for Success**



Sink No Deeper than Boot Sole



Firm Well Packed Seedbed

Seeding Depth - Do You Know Your Equipment ?

- How confident are you as to where the seed is actually going ?



After Seeding



Seeding Depth

- **Seeding too deep common cause of poor establishment**
- **Seed small forage seeds no deeper than $\frac{1}{2}$ to $\frac{3}{4}$ inch (1 to 2 cm) deep**
 - **Clay soils max. $\frac{1}{2}$ inch deep**
 - **Sandy soils to 1 $\frac{1}{4}$ inch**



Photo courtesy Frank Gazdag



Sod Seed Forages

- With Glyphosate kill/timing fall
- With soil test 0-6; 6-12
- P, K, S, B? fertility added
- Just before an inch of rain
- With patience

Renovation System	<i>% of Seeded Plants of the Total Plant Population (June 2003)</i>	
	Herbicide plus Phosphate	Herbicide with no Phosphate
<i>Sod Seed</i>	57%	29%
<i>AerWay & broadcast seed</i>	80 %	48 %
<i>Drag& broadcast seed</i>	80 %	44 %
<i>Broadcast</i>	30 %	39 %

Results Inconsistent

- **Decaying sod a hostile place for a seedling**
- **Moisture limited for germination**
- **Seed bed not good mineral soil to seed contact**
- **Regrowth old stand from roots**

Take Home Message

- Good, vigorous establishment critical for productive, long-lived forage stand
- Use quality seed of suitable forage species
- Inoculate legumes
- **FIRM, FIRM, FIRM...seedbed-then seed**
- Use proper seeding rate... any method
- Seed early
- Minimize competition, MONITOR
- Be patient to call new seeding a failure

Direct Seeding Forages Back Into Forage Stands



**Results to date have been
inconsistent**