Instructions for the GRASS Bundle

GRASS bundle is located at the following sites:

* FOTG - Section IV - Forms at https://my.nrcs.usda.gov
  http://www.nrcs.usda.gov/technical/efotg/

  (at state locator - select ND; select any county from the county locator; go to Section IV - Forms - GRASS Form Bundle)
* North Dakota forms
  http://efotg.sc.egov.usda.gov/references/public/ND/forms_section_IV.pdf

Opening the GRASS bundle

* Double-click on the **GRASS Form Bundle**
* **Enable Macros**

Cover Sheet

* Complete yellow lined area of **Cover Sheet**
* Click on blank cell
* Click on **Web Soil Survey (WSS)** to obtain soils data

(Note: if you have the soils information from ARC GIS, you do not need to use Web Soil Survey. Enter soils data from each pasture into Summary of Soil Data.)

Web Soil Survey

* Click the green button - **Start WSS**
* Select your **State**
* Enter **Section, Township,** and **Range**
* Select **North** and **West**

Once the selected section appears on the map:

* Zoom in on first pasture
* Select the **Area of Interest** icon **(AOI) -** (Polygon AOI icon works best)
* Place curser on map area where you want to begin
* Double-click to start outlining the pasture
* Click once to set corners
* Double-click at end point to finish (this creates the AOI)

From the top of the page select **Soil Map** tab

* From **Map Unit Legend**, record on paper:
  - **Map Unit Symbols**
  - **Acres** for each Map Unit Symbol (total acres must equal pasture acres. Note: WSS may be off by 0.1 - adjust if necessary

Or - click printable version tab and print off the Map Unit Legend, usually on page 3.

* Select **Area of Interest (AOI)** tab at top of page
* Click **AOI** polygon button
* **Outline** next pasture
* **Repeat** steps from first pasture

Once individual map units and acres for each pasture are recorded:

* **Close** out of WSS
* Go back to **Grass Form Bundle**

ND-CPA-1 Livestock-Forage Balance

Select **CPA-1 Livestock-Forage Balance** tab at the bottom of the screen

Table 1. Livestock Inventory and Forage Requirements for Calendar Year

Planned Numbers

* In **Class, s**elect animal type from the drop-down list
* In **Animal Numbers**, enter actual number of animals that will be grazed
* In **Months on Unit**, enter number of months animals will be on unit (usually - but not always **12**)

Usual Feeding and Grazing Practices

* In **Months**, enter number of months animal class will be grazing and/or feeding

Table 2. Available Forage Resources

Grazing

* Enter total number of **Acres** that will go into the ND-CPA-556 Grazing Scheduler
* Enter **Total AUM**s for **Rangeland**, **Tame Pasture, Annual Pasture,** or **Crop Aftermath** forages from ND-CPA-19
* Enter **Season of Use** (Sp, Su, Fa or Wi - see comment box)

Harvested Roughage

* Record **Acres** and **Tons of Production** (total tons harvested) for each roughage source type.

Production information may be obtained from producer, production clippings, forage suitability, or ecological site description (FOTG - Section II - Ecological Site Descriptions subfolder)

The **Operations Summary** will be automatically populated - the Required AUMs should be *equal to or less than* the Available AUMs for both the **Planned** and **Hay Equivalent**

Summary of Soil Data

Select **Summary of Soil Data** tab at bottom of screen

(Note: fields may be numbered as desired by producer. All pastures/fields used in a rotation must be entered on the summary sheet in order for the information to transfer to the Grazing Scheduler. In first yellow block, input Pasture 1 data recorded for WSS (entire block is for first pasture data, scroll down to second yellow block to input Pasture 2 data - there are 25 individual blocks for pasture data).

* Enter MLRA name from drop-down list for each line that has a Map Unit entry for each pasture section - if county name is the same, use copy and paste.
* From the drop-down list select **Range** (native rangeland), **Pasture** (tame grass pasture), or **Hay** (hayland) for each map unit in each pasture section
* Enter each **Map Unit** (a map unit may be entered only 1 time for each pasture/field)
* Enter total number of **Acres** for each map unit.
* **Repeat** previous steps for each pasture/field - (**remember**: move to the next section before entering information for a new pasture)
* When all data for all pastures has been entered, click **Populate CPA-19** button at top left corner of page.

Note: A red message on the right-hand side of the summary sheet indicates acres don't match up - recheck data, correct the mistake, and click Populate CPA-19 again.

* Once calculations are complete, CPA-19 Grazing Land Forage Inventory workbook will open.

ND-CPA-19 Grazing Land Forage Inventory

Go to ***CPA-19 Grazing Land Forage Inventory*** tab bottom of the screen

Grazing Unit, FSG/ESD, Response Unit, and Acres are automatically populated from the Summary of Soil Data sheet

An additional ND-CPA-19 is provided so fields not included on the Summary of Soil Data sheet may be added, as needed

* Enter **Pasture Condition or Range Similarity Index & Trend** (for sites where actual field data was collected - determined from ND-CPA-30 or ND-CPA-33)

* Enter stocking rate for pasture 1 for all of the soils (Round to nearest decimal – 1.4567 = 1.5) under Initial Stocking Rate AUMs/Ac (Determined from ND-CPA-30, ND-CPA-33, or FOTG - Section IV - 528 Prescribed Grazing DIG - Appendix C - Table 1 or Forage Suitability Group descriptions)

* Enter Pasture Condition or Range Similarity Index & Trend and Initial Stocking Rate AUMs/Ac for all soils in Pasture 2 -

* Repeat the previous steps for all pastures

Use stocking rate from CPA-33 Clipping Worksheet (Column P - AUM/Ac) or ND-CPA-30 Preference Based Stocking Rate for sites where clipping data is available

If you did not clip for production, refer to FOTG - Section IV - 528 - Prescribed Grazing DIG - Appendix C - Table 1, MLRA Specific Estimated Initial Stocking Rate for range and use forage suitability group (FOTG-Section II-Forage Suitability Group) descriptions for tame pastures.

* Enter comments as needed and provide information regarding how the stocking rates were determined.

* Complete information on bottom area of NC-CPA-19.

CPA-20 Similarity Index

Select **CPA-20 Similarity Index** tab at bottom of screen

* Choose **MLRA/Vegetation Zone** from drop-down list

* Enter **Pasture Name/No.**

* Enter **Transect ID** (i.e. Tract #1 or R1)

* Select a **Reference Plant Community** from the drop-down list (normally Historic or Phase 1.1)

* Select **ESD/Range Site** from drop-down list

Note: ESD/Range Site information located in FOTG - Section II - Soil Information - Soil Interpretative Table by county. Reminder: soil name does not equal ecological site description or range site.

* Enter **Location** (Section, Township, and Range)

* Enter **Date** Range Similarity Index was recorded in the field

* **Column A**, select **Plant Growth Form**, if known, from the drop-down list (option Grass, Forb, Shrub, or Tree)

* **Column B**, to select **Plant Species** enter plant name or select species from the drop-down list

Note: Select all the grass and grass-like species OR lump the native forbs together as Other Native Forbs (toward the bottom of the drop-down list), introduced forbs as Other Introduced Forbs, and Shrubs as Other Native or Introduced Shrubs or Trees.

* **Column C**, **Present Plant Community** enter percent of each species represented in the plant community; must equal 100%)

* **Column D**, **Present Plant Community (lbs/ac)** is determined by multiplying the percentage for each species in column C times the total annual biomass in (I)

Column E, Reference Plant Community (lbs/ac) - enter the pounds for each plant species as shown in the appropriate reference vetetation state in the ecological or range site description found in FOTG-Section II.

Column F, Pounds Per Acre Allowable - enter the less of (D) Present Plant Community (lbs/ac) or (E) Reference Plant Community (lbs/ac). The amount shown in (E) Reference Plant Community (lbs/ac) is the maximum that can be counted toward the similarity index.

(G), Annual production for referenced plant community from site description is the total annual production as shown on the ecological site description for the referenced vegetation state plant community.

(H), Similarity Index (%) is calculated by dividing total allowable pounds by annual production for reference plant community from site description (total of column F ÷ G X 100 = H%)

(I), Total biomass (lbs/ac air dry) is the total clipped or estimated air dry weight (with noted adjustments)

ND-CPA-30 Preference Based Stocking Rate

Select **CPA-31 Preference Based** Stocking Rate tab at bottom of screen

* **Name**, **Completed By**, **Location**, **Pasture No**., **Ecological Site**, **Plant Name** and **Present Plant Community lb/ac** will populate automatically from CPA-20

* Enter number of **Acres** for the first ecological site

* Enter appropriate **Date**

* Select **Animal Type** from drop-down list

Once the **Plant Name** column is populated from the CPA-20, the **Preference** column on the right side of the form will provide a grazing preference guidance (**Preferred (P), Desirable (D), or Undesirable (UD)**) for the **Animal Type** selected earlier. This guide may be adjusted based upon field experience.

* Enter the **lbs/ac** figure in the proper column (P, D, UD) for each species.

Example 1. If you have 295 lbs/ac of **Green Needlegrass** and the worksheet indicates it is **Preferred** for the selected Animal Type - enter 295 in column **P.**

Example 2. If you have ***other grasses*** on your list that make up 100 lbs/ac and based upon your experience you know they are **Desirable** forage for the selected **Animal Type** - enter **100** in column **D.**

* **Repeat** the previous steps for each inventoried ecological site

The estimated stocking rate for the ecological site is located in the AUM/ac (forage available / 913 lbs/month) block towards the bottom of the page. This is the number used to populate the Initial Stocking Rate AUMs/Ac on the ND-CPA-19 (this number may be used for the same ecological site found in other pastures provided the plant communities are similar)

ND-CPA-31 Apparent Trend

Select **CPA-31 Apparent Trend** tab at bottom of screen

* **Name**, **Conservationist**, **Ecological Site**, **Date**, **Location**, and **Pasture No**. and **Reference Plant Community** will be populated automatically from the ND-PCA-20

* Follow the instructions provided on the form to complete the evaluation using the drop-down lists. Remember to add pertinent observations to the **Comments** section.

ND-CPA-32 Dryland Pasture Condition Score

Select **CPA-32 Dryland Pasture Condition Score** tab at bottom of screen

* **Cooperator** and **Conservationist** will automatically populate from **Cover Sheet**
* Enter **Date** the evaluation is performed
* Select appropriate **Forage Suitability Group** from drop-down list
* Enter **Pasture Number(s)** of fields being evaluated
* **Current Year's Precipitation** - check box that best reflects current year's growing conditions

Evaluate the site and rate each indicator based upon your observations (scores for each indictor may range from 1 to 5). Evaluate and discuss overall pasture condition score as it relates to management change suggested with the client. **Overall Pasture Condition Score** will automatically total as each indicator is rated.

*Select the **Point** for each Indicator/Weight from the drop-down list
* Record field observations and basis for rating in **Comments/Notes** section

ND-CPA-33 Clipping Worksheet

Select ***CPA-33 Clipping Worksheet*** tab at bottom of screen

* From drop-down list, select **Year's Precipitation** when productivity was clipped
* Enter **Date** productivity was clipped
* **Column A**, enter **Field Number or Transect ID** (R1=Rangeland 1 or P1 = Tame grass, Pasture 1)

Start in yellow area (3rd line down) - white row remains blank

* **Column B**, select **ESD, FSG, or Annual Forage Type** from drop-down list
* **Column C**, enter **Total Clipped Wet Weight in Grams** (if more than one sample is clipped, calculate the average of the clipped weight)
* **Column D**, enter **Bag Weight (Grams)**
* **Column F**, enter **Percent Dry Matter** (from the table on the left side of the **Air Dry % and Growth Curve sheet -** tab at the bottom of the screen)
* **Column H**, **Frame Size Factor** - will always be 50 if the hoop was used for the clippings
* **Column J**, enter **Growth Curve Adjustment Factor** from table on the right side of the Air Dry % and Growth Curve sheet (tab at the bottom of the screen)

Find the month the sample was clipped and add that number plus all of the months before. (If the sample was clipped in August, August equals 90, so you would type in 0.9)

* **Column L**, enter **Grazing Adjustment Factor** - enter the % of production "grazed" (normally 75% or less)

All of the white columns should have been filling in on their own

* **Column N**, enter **Harvest Efficiency Factor** as appropriate: Rangeland pastures 25%, tame pastures 35-50% depending on level of grazing management.

The Harvest Efficiency Factor is usually 0.35 for tame grass pasture and 0.25 for a range site that is not assigned

* Once all pastures are recorded into the Forage Production Clipping Worksheet, transfer the numbers from **Column M, Final Adjusted Production lbs/ac** to the **ND-CPA-20 Similarity Index, Line (l) Total annual biomass Estimated---------->.**

**Numbers will not show up until you click out of the box*

Note: If the Transect ID on ND-CPA-20 Similarity Index matches the Transect ID on the ND-CPA-33, Forage Production Clipping Worksheet, the (l) Total Annual Biomass (lbs/ac air day) will automatically populate and the label will show "clipped".

* Repeat the previous steps for each inventoried site

CPA-556 Prescribed Grazing Schedule

Select **CPA-556 Prescribed Grazing Schedule** tab at the bottom of the screen.

* **Name** will be automatically populated for Cover Sheet
* Select **County** land is in, from the drop-down box
* Enter **Year** prescribed grazing schedule is developed for
* Enter **Herd Name** (i.e. 32 Cow/Calf pairs)
* Enter **Actual Herd Size (number)**
* Enter **Animal Unit Equivalents for Herd** - see comment box for AUE information

To determine Herd Size in AUs, take the number of head times animal unit equivalent (AUE) found in CPA-1 Livestock-Forage Balance Sheet tab - Table 1 - Planned Numbers. Example (32 cows X 1.2) + (1 Bull X 1.35) = 39.75 Animal Units

* Enter **Clients Objectives and Goals**

Pastures, Grazing Days (GD) Available and **Acres** will be automatically populated from the ND-CPA-19 Grazing Land Forage Inventory Summary

* Select **Forage Type** from the drop-down box
*Enter **Grazing Season Dates** on right hand side of form (i.e. From 6/1 - To 10/31)

Grazing Days Needed should be slightly less than or equal to **Total Grazing Days Available**. (If adjustments are needed, increase or decrease the Herd Size and explain adjustments in the "comments" section)

* Enter name of person **Planned by** and today's **Date**
* Scroll down to **First Rotation** and select Pasture or Field from the drop-down list

The ***Herd Days Available*** Column tells you how many the pasture can be grazed

* In **Days Used** column, number of days expected to have the livestock in each pasture for the first rotation

You can use the total number of herd days available and not have a second rotation OR use a portion of the days available and have a second or even third rotation.

* Repeat for each pasture

For second rotation, scroll down to ***Second Rotation*** block and repeat the previous steps

If you want a second or third rotation, make sure there is an adequate amount of recovery days between grazing (see upper right hand side, under *Recovery Period Guidelines*)

Additional Guidance for the Prescribed Grazing Schedule
Preliminary Information
A properly designed prescribed grazing schedule will meet the client's goals, ensure maintenance and/or improvement of the plant resource, and meet the needs of the grazing animal.
The number of pastures included in the prescribed grazing schedule and the number of times an individual pasture is grazed during the season is the client's decision.
Enter data in the yellow-shaded cells. Blue shaded cells are optional.
Remember to use the proper animal unit equivalent adjust factor for the kind and class of animals that will be grazed. See form ND-CPA-1, Livestock/Forage Balance; or Table 6-5, in Chapter 6 of the National Range and Pasture Handbook for further guidance.

White cells on the sheet are protected and may contain calculations.

Further instruction is available in cells with the small red triangle like this one

Enter data beginning from the top down.

Enter information regarding pastures, grazing days available, acres, and forage type for each pasture in the system. Most of this information can be found on the range inventory form ND-CPA-19.

Select the county where the grazing system is planned. Note, some counties have more than one MLRA, select accordingly. This will populate the "Recovery Period Guidelines" table with the recommended recovery periods for the selected MLRA.

Total Grazing Days Needed should not exceed the Total Grazing Days Available. If Total Grazing Days Available is exceeded, adjustments should be made to either decrease animal numbers, shorten the grazing season, add additional grazing land, or a combination of any of these options until a balance is achieved.

Applied Grazing Section

The applied section is for the client to record actual herd size and actual dates that he/she grazed each pasture during the season. Spreadsheet will calculate "Days Used" and "Days Recovery".

Applied		
Herd size in AU	Grazing Period	
	From	To
10	1-Jun	11-Jun
15	12-Jun	28-Jun

The field office should request grazing records from the producer. Records of this type are valuable in order to complete the follow-up process and determine alternatives for possible adjustments to the system for the next grazing season.

Practice Certification

The applied grazing rotation will be evaluated based upon the grazing records provided by the client and monitoring data collected during on-site follow-up. Although the rotation is evaluated pasture-by-pasture, the overall determination will be for the entire system.

Question 1. Were recovery periods adequate for each pasture? If a pasture was grazed more than once during the grazing season, did the days recovery between grazing events meet the minimum guidelines shown in the "Recovery Period Guidelines" table? If grazed only once, recovery guidelines do not apply to that pasture.

Question 2. Was season of use changed for each pasture, as appropriate? This does not apply to "special use" pastures such as crested wheatgrass used only for spring pasture or Russian wildrye used only for fall pasture.

Question 3. Was monitoring data collected and reviewed with the client? This may include photo point, degree of use for key species, utilization based upon landscape appearance or other approved monitoring technique.

Question 4. Did degree of use meet the client's goals? Based upon the on-site monitoring data collected, did degree of use (rangeland) or minimum leaf length (pastureland) meet the client's goals?

Question 5. The grazing system as applied, meets Prescribed Grazing (528) certification requirements. Based upon the information provided and monitoring data, did the entire rotational system meet the criteria of the Prescribed Grazing practice?

If the first three questions are answered "Yes", the applied rotation meets Prescribed Grazing practice criteria. If either of the first two questions are answered "No" but a technically sound explanation can be documented in the comments section and question 3 is answered "Yes", the criteria would be met. If either of the first two questions are answered "No" without benefit of an acceptable explanation or monitoring data is not collected, then the Prescribed Grazing criteria is **not** met. If question 4 is answered "No", but the rest of the criteria was met, the rotation meets practice criteria. Planner should document in the comments section the changes that will be made to next year's grazing plan to attain the client's degree of use goals.

Forage Production Clipping Worksheet

Name: _____ **County:** _____ **Date:** _____ **Assisted by:** _____

Current Year's Precipitation (choose one) _____

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q
Field No. / Trans ID	ESD, FSG or Annual Forage Type	Total Clipped Wet (Grams)	Bag Weight (Grams)	Total Forage Weight (Grams) (C - D)	Percent Dry Matter*	Total Dry Matter (E x F)	Frame Size Factor **	Pounds of Forage per Acre (G x H)	Growth Curve Adjustment Factor	Adjusted Production lbs/ac (I / J)	Grazing Adjustment Factor	Final Adjusted Production lbs/ ac K/(1-L)	Harvest Efficiency Factor ***	Lbs of Grazeable Forage Allowed (M x N)	AUM per Acre (O / 913)	Grazing Days per Acre (P x 30.5)
Example	CySu	70	6	64	0.35	22.4	50	1120	0.6	1867	0.3	2667	0.35	933	1.02	31.2
	NS															

* Refer to exhibit 4-2 of the National Range and Pasture Handbook

** For a 1.92 square foot frame, multiply weight in grams by 50. See Chapter 4, Part 600.0401(c) of the National Range and Pasture Handbook for additiional frame sizes and conversion factors.

*** Rangeland Pastures: 25%. Tame pastures: 35-50% depending on level of grazing management

Forage Production Clipping Worksheet

Name: _____ **County:** _____ **Date:** _____ **Assisted by:** _____

Current Year's Precipitation (choose one)

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q
Field No. / Trans ID	ESD, FSG or Annual Forage Type	Total Clipped Wet (Grams)	Bag Weight (Grams)	Total Forage Weight (Grams) (C - D)	Percent Dry Matter*	Total Dry Matter (E x F)	Frame Size Factor **	Pounds of Forage per Acre (G x H)	Growth Curve Adjustment Factor	Adjusted Production lbs/ac (I / J)	Grazing Adjustment Factor	Final Adjusted Production lbs/ac K/(1-L)	Harvest Efficiency Factor ***	Lbs of Grazeable Forage Allowed (M x N)	AUM per Acre (O / 913)	Grazing Days per Acre (P x 30.5)
Ex	CySu	70	6	64	0.35	22.4	50	1120	0.6	1867	0.3	2667	0.35	933	1.02	31.2

* Refer to exhibit 4-2 of the National Range and Pasture Handbook

** For a 1.92 square foot frame, multiply weight in grams by 50. See Chapter 4, Part 600.0401(c) of the National Range and Pasture Handbook for additiional frame sizes and conversion factors.

*** Rangeland Pastures: 25%. Tame pastures: 35-50% depending on level of grazing management

Percent of air-dry matter in harvested plant material at various stages of growth. (NRPH chapter 4, exhibit 4-2)	Before Heading; initial growth to boot stage (%)	Headed out; boot state to flowering (%)	Seed ripe; leaf tips partly dry (%)	Leaves dry; stems partly dry (%)	Apparent dormancy (%)
Cool season grasses	35	45	60	85	95
Warm season grasses					
tall	30	45	60	85	95
mid	40	55	65	90	95
short	45	60	80	90	95
	Initial growth to flowering (%)	Flowering to seed maturity (%)	Seed ripe; leaf tips dry (%)	Leaves dry; stems drying (%)	Dry (%)
Forbs					
succulent	15	35	60	90	100
leafy	20	40	60	90	100
fibrous leaves or mat	30	50	75	90	100
	New leaf and twig growth until leaves are full size (%)	Older and full-size green leaves (%)	Green fuit (%)	Dry fuit (%)	
Deciduous shrubs	35	50	30	85	
	New growth pads and fruits (%)	Older pads (%)	Old growth in dry years (%)		
Cactus					
pricklypear and barrel	10	10	15+		

	Growth curve number: ND5406	Growth curve number: ND5410
	Growth curve name: Cool-season grasses.	Growth curve name: Warm-season grasses.
JAN	0	0
FEB	0	0
MAR	3	0
APR	10	3
MAY	35	22
JUN	35	30
JUL	5	30
AUG	2	8
SEP	8	5
OCT	2	2
NOV	0	0
DEC	0	0

Ecological Site	Abbreviation
Clayey	Cy
Clayey Terrace	CyT
Claypan	Cp
Closed Depression	CD
Limy Sands	Lsa
Limy Subirrigated	LSb
Loamy	Ly
Loamy Overflow	LyOv
Loamy Terrace	LyT
Saline Lowland	SL
Sands	Sa
Sandy	Sy
Sandy Claypan	SyCp
Sandy Terrace	SyT
Savannah	Sv
Shallow Clayey	SwCy
Shallow Gravel	SwG
Shallow Loamy	SwLy

Percent of air-dry matter in harvested plant material at various stages of growth. (NRPH chapter 4, exhibit 4-2)	Before Heading; initial growth to boot stage (%)	Headed out; boot state to flowering (%)	Seed ripe; leaf tips partly dry (%)	Leaves dry; stems partly dry (%)	Apparent dormancy (%)
Cool season grasses	35	45	60	85	95
Warm season grasses					
tall	30	45	60	85	95
mid	40	55	65	90	95
short	45	60	80	90	95
	Initial growth to flowering (%)	Flowering to seed maturity (%)	Seed ripe; leaf tips dry (%)	Leaves dry; stems drying (%)	Dry (%)
Forbs					
succulent	15	35	60	90	100
leafy	20	40	60	90	100
fibrous leaves or mat	30	50	75	90	100
	New leaf and twig growth until leaves are full size (%)	Older and full-size green leaves (%)	Green fuit (%)	Dry fuit (%)	
Deciduous shrubs	35	50	30	85	
	New growth pads and fruits (%)	Older pads (%)	Old growth in dry years (%)		
Cactus					
pricklypear and barrel	10	10	15+		

	Growth curve number: ND5406	Growth curve number: ND5410
	Growth curve name: Cool-season grasses.	Growth curve name: Warm-season grasses.
JAN	0	0
FEB	0	0
MAR	3	0
APR	10	3
MAY	35	22
JUN	35	30
JUL	5	30
AUG	2	8
SEP	8	5
OCT	2	2
NOV	0	0
DEC	0	0

Ecological Site	Abbreviation
Clayey	Cy
Clayey Terrace	CyT
Claypan	Cp
Closed Depression	CD
Limy Sands	Lsa
Limy Subirrigated	LSb
Loamy	Ly
Loamy Overflow	LyOv
Loamy Terrace	LyT
Saline Lowland	SL
Sands	Sa
Sandy	Sy
Sandy Claypan	SyCp
Sandy Terrace	SyT
Savannah	Sv
Shallow Clayey	SwCy
Shallow Gravel	SwG
Shallow Loamy	SwLy

								Shallow Sandy	SwSy		
								Subirrigated	Sb		
								Subirrigated Sands	SbSa		
								Thin Clayey	Tcy		
								Thin Claypan	TCp		
								Thin Loamy	Tly		
								Thin Sands	Tsa		
								Very Shallow	VS		
								Wet Land	WL		
								Wet Meadow	WM		
								FSG	**Abbreviation**		
								Wet	Wt		
								Loam	Lm		
								Steep Loam	SLm		
								Droughty Loam	DLm		
								Very Droughty Loam	VDLm		
								Clayey Subsoil	CySu		
								Sand	Sa		
								Limy Upland	LUp		
								Overflow	Ov		
								Subirrigated	Sb		
								Claypan	Cp		
								Saline	Sl		
								Shallow	Sw		
								Not Suited	NS		