
Chapter 11

Conservation Planning on Grazing Lands

Contents	600.1103	Conservation Planning Process	
		k) Evaluation of Results	
		Montana Procedures for Doing Rangeland Monitoring	MT11-15(1)
<hr/>			
	Exhibits	MT11-101 Rangeland Utilization Estimate Worksheet--Key Forage Plant Method (Montana NRCS Form--MT-ECS-119)	MT11EX-15(7)
		MT11-101A Rangeland Utilization Estimate--Key Forage Plant Method Instructions (Montana NRCS Form--MT-ECS-119)	MT11EX-15(9)
		MT11-101B EXAMPLE--Rangeland Utilization Estimate-- Key Forage Plant Method (Montana NRCS Form--MT-ECS-119)	MT11EX-15(11)
<hr/>			
		MT11-102 Rangeland Monitoring Fact Sheet	MT11EX-15(13)
<hr/>			
		MT11-105 Grazing Rotation Schedule Worksheet (Montana NRCS Form--MT-CPA-18C)	MT11EX-15(33)

Exhibits (Continued)File alphabetically at the end of Chapter 11, *Exhibits**Retrieve at share point site (NRCS Employees only)*

CH11	Forage, Roughage and Livestock Balance Worksheet (MT-ECS-18B) (Pages-4)	MT11EX
CH11	Instructions-Forage, Roughage and Livestock Balance Worksheet (MT-ECS-18B) (Pages-2)	MT11EX
CH11	Example-Forage, Roughage and Livestock Balance Worksheet (MT-ECS-18B) (Pages-4)	MT11EX

CH11	Grazing Land Inventory Summary Sheet (MT-ECS-18A) (Pages-6)	MT11EX
CH11	Instructions-Grazing Land Inventory Summary Sheet (MT-ECS-18A) (Pages-1)	MT11EX
CH11	Example-Grazing Land Inventory Summary Sheet (MT-ECS-18A) (Pages-2)	MT11EX

CH11	Monitoring Study Location and Documentation Worksheet (MT-ECS-118A) (Pages-1)	MT11EX
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CH11	Rangeland Monitoring Worksheet (MT-ECS-118) (Pages-1)	MT11EX
CH11	Rangeland Monitoring Worksheet Instructions (MT-ECS-118) (Pages-1)	MT11EX
CH11	Example-Rangeland Monitoring Worksheet (MT-ECS-118) (Pages-1)	MT11EX

CH. 11, Exhibit--Forage, Roughage and Livestock Balance Worksheet

UNITED STATES DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

MT-ECS-18B
May 2010

Present - Forage, Roughage and Livestock Balance Worksheet

Producer: _____ Planned by: _____ Date: _____

Section B: Present Forage Availability and Grazing Needs - Page 1

TABLE 1. Present Grazing and Harvested Roughage Available.

Forage Source	Acres	Total AUMs	Harvested Roughage	Acres	Total Tons	Total AUMs
Rangeland			Hay Source #1			
Dryland Pasture			Hay Source #2			
Irrigated Pasture			Silage			
Hayland Aftermath			Other:			
Crop Aftermath						
Leased Grazing			TOTAL		0	(2)
Other			Excess to be sold: <input type="text"/>			
TOTAL		(1)	Excess to emergency reserve: <input type="text"/>			

TABLE 2. Present Forage and Harvested Roughage Balance.

AUMs from Forage (1)		Animal Units by Month Available from Forage:
AUMs from Roughage (2)		AUMs Forage (1) <input type="text"/> / # Months Grazed <input type="text"/> = <input type="text"/> AUs
Total AUMs (3)		
Total AUMs (3) <input type="text"/> / 12 Months = <input type="text"/> AUs (4) Present from Forage and Roughage by Month		Animal Units by Month Available from Roughage:
		AUMs Roughage (2) <input type="text"/> / # Months fed <input type="text"/> = <input type="text"/> AUs

TABLE 3. Grazing Needs Inventory (Livestock and Wildlife)

Kind and Class of Animal, Including Wildlife					AUs by MONTH (5)											
Animal	AUE	Number	AUs	TOTAL AUMs	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Cow/calf *																
Cow, dry **																
Yearlings ***																
Heifers ***																
Bull, mature	1.70															
Ewes	0.17															
Lambs, weaned	0.12															
Rams	0.25															
Horse	1.25															
Deer	0.17															
Elk	0.50															
Antelope	0.13															
TOTAL																

Notes: The general rule of thumb for animal unit month (AUM) forage requirements for a 1000 pound cow is 915 pounds. Reference: NRPH Chapter 6.

* For lactating cows, use a 0.1 of an animal unit per 100# of body weight plus 0.1 for the calf to figure AUE.

(For example, A 1200# cow with calf would be 1.3 AU).

** For a dry cow, multiply the AU factor of the cow, without the .1 added in for the calf, by .83 to get the AUE.

(For example, A 1200# cow would be 1.2 x .83 = 1 AU).

*** For yearling cattle and heifers, figure 0.1 of an AU per 100# of body weight.

(For example, A 950# yearling would be 0.95 AU).

CH. 11, Exhibit--Forage, Roughage and Livestock Balance Worksheet

UNITED STATES DEPARTMENT OF AGRICULTURE
 NATURAL RESOURCES CONSERVATION SERVICE

MT-ECS-18B
 May 2010

***Present* - FORAGE, ROUGHAGE AND LIVESTOCK BALANCE WORKSHEET**

Section B: Present Forage Availability and Grazing Needs - Page 2

TABLE 4. Production vs. Needs.

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	TOTAL
Total Grazable AUMs Available(1) per month													
Total Roughage AUMs Available(2) per month													
Total AUMs Needed (5) per month													
Balance + or -													

NOTES:

TABLE 5. Wildlife Use Information.

Wildlife Species Present:				
Key Areas for:	Field(s)	Acres	Months of Use	Additional Information
Foraging				
Hiding Cover				
Thermal Cover				
Riparian Areas				
Calving/Fawning				
Strutting Grounds				
Other				

CH. 11, Exhibit--Forage, Roughage and Livestock Balance Worksheet

UNITED STATES DEPARTMENT OF AGRICULTURE
 NATURAL RESOURCES CONSERVATION SERVICE

MT-ECS-18B
 May 2010

Planned - Forage, Roughage and Livestock Balance Worksheet

Producer: _____ Planned by: _____ Date: _____

Section B: Planned Forage Availability and Grazing Needs - Page 3

TABLE 6. Planned Grazing and Harvested Roughage Available After Conservation Practices.

Forage Source	Acres	Total AUMs	Harvested Roughage	Acres	Total Tons	Total AUMs
Rangeland			Hay Source #1			
Dryland Pasture			Hay Source #2			
Irrigated Pasture			Silage			
Hayland Aftermath			Other:			
Crop Aftermath						
Leased Grazing						
Other						
TOTAL		(6)	TOTAL			(7)

TABLE 7. Planned Forage and Harvested Roughage Balance After Conservation Practices.

AUMs from Forage (6)		Animal Units by Month Available from Forage:
AUMs from Roughage (7)		AUMs Forage (6) <input type="text"/> / # Months Grazed <input type="text"/> = <input type="text"/> AUs
Total AUMs (8)		
Total AUMs (8) <input type="text"/> / 12 Months = <input type="text"/> AUs (9) Present		Animal Units by Month Available from Roughage:
from Forage and Roughage by Month		AUMs Roughage (7) <input type="text"/> / # Months fed <input type="text"/> = <input type="text"/> AUs

TABLE 8. Planned Stocking Rates to Balance Livestock with Forage Resources by Month

Kind and Class of Animal, Including Wildlife					AUs by MONTH (10)											
Animal	AUE	Number	AUs	TOTAL AUMs	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Cow/calf *																
Cow, dry **																
Yearlings ***																
Heifers ***																
Bull, mature	1.7															
Ewes	0.17															
Lambs, weaned	0.12															
Rams	0.25															
Horse	1.25															
Deer	0.17															
Elk	0.5															
Antelope	0.13															
TOTAL																

Notes: The general rule of thumb for animal unit month (AUM) forage requirements for a 1000 pound cow is 915 pounds. Reference: NRPH Chapter 6.

* For lactating cows, use a 0.1 of an animal unit per 100# of body weight plus 0.1 for the calf to figure AUE.
 (For example, A 1200# cow with calf would be 1.3 AU).

** For a dry cow, multiply the AU factor of the cow, without the .1 added in for the calf, by .83 to get the AUE.
 (For example, A 1200# cow would be 1.2 x .83 = 1 AU).

*** For yearling cattle and heifers, Figure 0.1 of an AU per 100# of body weight.
 (For example, A 950# yearling would be 0.95 AU).

CH. 11, Exhibit--Forage, Roughage and Livestock Balance Worksheet

UNITED STATES DEPARTMENT OF AGRICULTURE
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MT-ECS-18B
 May 2010

***Planned-* FORAGE, ROUGHAGE AND LIVESTOCK BALANCE WORKSHEET**

Section B: Planned Forage Availability and Grazing Needs - Page 4

TABLE 9. Production vs. Needs.

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	TOTAL
Total Grazable AUMs Available (6) per month													
Total Roughage AUMs Available (7) per month													
Total AUMs Needed (9) per month													
Balance + or -													

NOTES:

TABLE 10. Wildlife Use Information.

Wildlife Species Present:				
Key Areas for:	Field(s)	Acres	Months of Use	Additional Information
Foraging				
Hiding Cover				
Thermal Cover				
Riparian Areas				
Calving/Fawning				
Strutting Grounds				
Other				

INSTRUCTIONS--FORAGE, ROUGHAGE AND LIVESTOCK BALANCE WORKSHEET**SECTION A: Present Forage Availability and Grazing Needs*****Table 1 – Present Grazing and Harvested Roughage Available:***

This table records what the **current** situation is for the producer. The left side of the table records forage sources, acres, and AUMs; and represent amounts taken from the Grazing Land Forage Inventory Summary Sheet, MT-CPA-18A (total of Column I).

The right side of the table records harvested roughage type, acres, and AUMs; and are usually obtained from producer records/interviews. Any hay/silage to be sold should be recorded, as well as any excess hay/silage that will be set aside for emergency reserve.

Total the AUMs from grazing (1) and roughage (2).

Table 2 – Present Forage and Harvested Roughage Balance:

The AUMs from forage and roughage transfer down from Table 1, and are totaled together (3). This amount represents the total AUMs presently available to the producer.

The total AUMs (3) are divided by 12 months, and the resulting number represents Animal Units (AUs) (4) available each month.

Animal Units by Month Available from Forage: The AUMs from Forage (1) are divided by the number of months grazed. The resulting number represents how many animal units are available for each month grazed from the forage sources.

Animal Units by Month Available from Roughage: The AUMs from Roughage (2) are divided by the number of months fed. The resulting number represents how many animal units are available for each month fed from the roughage sources.

Table 3 – Grazing Needs Inventory:

In the Number column, enter the current number of livestock and wildlife present on the operation.

The Animal Units (AUs) figure is found by multiplying the number of livestock/wildlife type by the AUE figure. Instructions for cows, calves, yearlings, and heifers are found below the table. All values in the AUE column can be adjusted based on the specific animal needs and requirements.

Total AUMs are found by multiplying AUs by the number of months that class of animal is in the operation. For example, if a producer had ten yearlings weighing 950 pounds, the AUE would be .95, and $.95 \text{ AUE} \times 10 = 9.5 \text{ AUs}$. If the yearlings are only kept for 9 months, then $9.5 \text{ AUs} \times 9 \text{ mo} = 85.5 \text{ AUMs}$.

AUs / MONTH are found by taking the AUs of each animal class and placing that number in each month column that the animal is in the operation. This procedure should be done for all classes of livestock/wildlife present on the operation, and total the AUs for each month at the bottom. The numbers may vary, depending on whether different animal classes are retained in the operation for the whole year or not.

Table 4 – Production vs. Needs:

This table compares how much forage and roughage is available versus how much is needed. In the Total grazable AUMs available per month row and the total roughage AUMs available per month row, enter the appropriate AU/Month figure present from Table 2.

In the Total AUs Needed row, enter the monthly figures from the bottom of Table 3. These numbers should self populate if using an electronic version.

The last row will be the difference between AUs forage and roughage available and total AUs Needed. Subtract row three (Needed) from rows 1 and 2 (Forage and Roughage Available). If the resulting number is positive, then forage

availability vs. needs is potentially balanced*. If the resulting number is negative, then forage available does not meet forage needs. The possibility exists for the entire year to be out of balance, or just a few months.

***Caution should be taken when looking at overall AUs available and AUs needed. Table 4 may show a balance between production and needs, but are the AUs available when needed?**

Table 5 – Wildlife Use Information: This table provides documentation space for wildlife species present and habitat availability for each species. Enter field number(s) and acres containing the different key areas, and also document when the use occurs.

SECTION B: Planned Forage Availability and Grazing Needs

Table 6 – Planned Grazing and Harvested Roughage Available After Conservation Practices:

Table 6 is filled out in the same manner as Table 1 in Section A, but reflects forage amounts available after conservation practices are installed.

Table 7 – Planned Forage and Harvested Roughage Balance After Conservation Practices:

The AUMs from forage and roughage transfer down from Table 6, and are totaled together (8). This figure represents the total planned AUMs available to the producer after conservation practices are installed.

The total AUMs (8) are divided by 12 months, and the resulting number represents planned Animal Units (AUs) (9) available each month.

Animal Units by Month Available from Forage: The AUMs from Forage (6) are divided by the number of months planned to graze. The resulting number represents how many animal units are available to graze by month from the forage sources.

Animal Units by Month Available from Roughage: The AUMS from Roughage (7) are divided by the number of months planned to feed. The resulting number represents how many animal units are available to feed by month from the roughage sources.

Table 8 – Planned Stocking Rates to Balance Livestock with Forage Resources by Month:

This table is filled out the same as Table 3, but reflects adjustments of animal numbers to balance with forage resources. Depending on planned conservation practices, numbers in this table may stay the same as the existing numbers, or may increase or decrease to balance with the forage supply. Follow the same procedure for filling out this table as for Table 3 in Section A.

Table 9 – Production vs. Needs:

This table compares how much planned forage will be available versus how much is needed. In the Total AUs Available row, enter the figure from Table 7, AUs Present (9).

In the Total AUs Needed row, enter the monthly figures from the bottom of Table 8.

The last row will be the difference between AUs Available and AUs Needed. Subtract row three (Needed) from rows 1 and 2 (Forage and Roughage Available). If the resulting number is positive, then forage availability vs. needs is potentially balanced*. If the resulting number is negative, then forage available does not meet forage needs. The possibility exists for the entire year to be out of balance, or just a few months.

***Even though conservation practices are installed with the intent to balance forage availability and needs, the planner still needs to check back to Table 7 and see if the AUs are available during the various forage seasons.**

Table 10 – Wildlife Use Information: This table provides documentation space for wildlife species present and habitat availability for each species. Enter field number(s) and acres containing the different key areas, and also document when the use occurs. Enter any changes reflecting improvements due to planned conservation practices.

CH. 11, Exhibit--Example-Forage, Roughage and Livestock Balance Worksheet

UNITED STATES DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

MT-ECS-18B
May 2010

Present - Forage, Roughage and Livestock Balance Worksheet (EXAMPLE)

Producer: _____ Planned by: _____ Date: 1/25/2010

Section B: Present Forage Availability and Grazing Needs - Page 1

TABLE 1. Present Grazing and Harvested Roughage Available.

Forage Source	Acres	Total AUMs	Harvested Roughage	Acres	Total Tons	Total AUMs
Rangeland	6229.0	969.0	Hay Source #1	341.0	257	561.7
Dryland Pasture	533.0	189.0	Hay Source #2	290.0	145	316.9
Irrigated Pasture			Silage			
Hayland Aftermath	341.0	68.0	Other:			
Crop Aftermath	59.0	12.0				
Leased Grazing			TOTAL		402	(2) 878.7
Other			Excess to be sold: _____			
TOTAL	7162.0	1238.0 (1)	Excess to emergency reserve: _____			

TABLE 2. Present Forage and Harvested Roughage Balance.

AUMs from Forage (1)	1238.0	Animal Units by Month Available from Forage:	
AUMs from Roughage (2)	878.7	AUMs Forage (1)	<u>1238</u> / # Months Grazed <u>8.5</u> = <u>145.6</u> AUs
Total AUMs (3)	2116.7		
Total AUMs (3) <u>2116.7</u> / 12 Months =	<u>176.4</u> AUs (4) Present	Animal Units by Month Available from Roughage:	
from Forage and Roughage by Month		AUMs Roughage (2)	<u>878.7</u> / # Months fed <u>3.5</u> = <u>251.1</u> AUs

TABLE 3. Grazing Needs Inventory (Livestock and Wildlife)

Kind and Class of Animal, Including Wildlife					AUs by MONTH (5)											
Animal	AUE	Number	AUs	TOTAL AUMs	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Cow/calf *	1.40	77.0	107.8	754.6				107.8	107.8	107.8	107.8	107.8	107.8	107.8		
Cow, dry **	1.08	77.0	83.2	416.0	83.2	83.2	83.2								83.2	83.2
Yearlings ***																
Heifers ***	0.90	20.0	18.0	216.0	18.0	18.0	18.0	18.0	18.0	18.0	18.0	18.0	18.0	18.0	18.0	18.0
Bull, mature	1.70	8.0	13.6	163.2	13.6	13.6	13.6	13.6	13.6	13.6	13.6	13.6	13.6	13.6	13.6	13.6
Ewes	0.17															
Lambs, weaned	0.12															
Rams	0.25															
Horse	1.25	5.0	6.3	75.6	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3
Deer	0.17															
Elk	0.50															
Antelope	0.13															
Young cow/calf	1.20	54.0	64.8	453.6				64.8	64.8	64.8	64.8	64.8	64.8	64.8		
Young cow/dry	0.91	54.0	49.1	245.5	49.1	49.1	49.1								49.1	49.1
TOTAL				2324.5	170.2	170.2	170.2	210.5	210.5	210.5	210.5	210.5	210.5	210.5	170.2	170.2

Notes: The general rule of thumb for animal unit month (AUM) forage requirements for a 1000 pound cow is 915 pounds. Reference: NRPH, Chapter 6.

* For lactating cows, use a 0.1 of an animal unit per 100# of body weight plus 0.1 for the calf to figure AUE.

(For example, A 1200# cow with calf would be 1.3 AU).

** For a dry cow, multiply the AU factor of the cow, without the .1 added in for the calf, by .83 to get the AUE.

(For example, A 1200# cow would be 1.2 x .83 = 1 AU).

*** For yearling cattle and heifers, Figure 0.1 of an AU per 100# of body weight.

(For example, A 950# yearling would be 0.95 AU).

CH. 11, Exhibit--Example-Forage, Roughage and Livestock Balance Worksheet

UNITED STATES DEPARTMENT OF AGRICULTURE
 NATURAL RESOURCES CONSERVATION SERVICE

MT-ECS-18B
 May 2010

Present - FORAGE, ROUGHAGE AND LIVESTOCK BALANCE WORKSHEET (EXAMPLE)

Section B: Present Forage Availability and Grazing Needs - Page 2

TABLE 4. Production vs. Needs.

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	TOTAL
Total Grazable AUMs Available(1) per month	145.6	72.8				145.6	145.6	145.6	145.6	145.6	145.6	145.6	1237.6
Total Roughage AUMs Available(2) per month		125.5	251.1	251.1	251.1								878.8
Total AUMs Needed (5) per month	170.2	170.2	170.2	210.5	210.5	210.5	210.5	210.5	210.5	210.5	170.2	170.2	2324.5
Balance + or -	-24.6	28.1	80.9	40.6	40.6	-64.9	-64.9	-64.9	-64.9	-64.9	-24.6	-24.6	-208.1

NOTES: There is currently enough roughage for the 3.5 months fed. 3.5 months is not long enough for most winters. More grazing AUMs are needed.

TABLE 5. Wildlife Use Information.

Wildlife Species Present:				
Key Areas for:	Field(s)	Acres	Months of Use	Additional Information
Foraging				
Hiding Cover				
Thermal Cover				
Riparian Areas				
Calving/Fawning				
Strutting Grounds				
Other				

CH. 11, Exhibit--Example-Forage, Roughage and Livestock Balance Worksheet

UNITED STATES DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

MT-ECS-18B
May 2010

Planned - Forage, Roughage and Livestock Balance Worksheet (EXAMPLE)

Producer: Rancher Joe Planned by: Range Con Luhan Date: 1/25/2010

Section B: Planned Forage Availability and Grazing Needs - Page 3

TABLE 6. Planned Grazing and Harvested Roughage Available After Conservation Practices.

Forage Source	Acres	Total AUMs	Harvested Roughage	Acres	Total Tons	Total AUMs
Rangeland	6229.0	1096.0	Hay Source #1	341.0	257	561.7
Dryland Pasture	533.0	189.0	Hay Source #2	290.0	145	316.9
Irrigated Pasture			Silage			
Hayland Aftermath	341.0	68.0	Other:			
Crop Aftermath	59.0	12.0				
Leased Grazing		125.0				
Other						
TOTAL	7162.0	1490.0 (6)	TOTAL	631	402	(7) 878.7

TABLE 7. Planned Forage and Harvested Roughage Balance After Conservation Practices.

AUMs from Forage (6)	1490.0	Animal Units by Month Available from Forage: AUMs Forage (6) <input type="text" value="1490"/> / # Months Grazed <input type="text" value="7.5"/> = <input type="text" value="198.7"/> AUs
AUMs from Roughage (7)	878.7	
Total AUMs (8)	2368.7	
Total AUMs (8) <input type="text" value="2368.7"/> / 12 Months = <input type="text" value="197.4"/> AUs (9) Present from Forage and Roughage by Month		Animal Units by Month Available from Roughage: AUMs Roughage (7) <input type="text" value="878.7"/> / # Months fed <input type="text" value="4.5"/> = <input type="text" value="195.3"/> AUs

TABLE 8. Planned Stocking Rates to Balance Livestock with Forage Resources by Month

Kind and Class of Animal, Including Wildlife					AUs by MONTH (10)											
Animal	AUE	Number	AUs	TOTAL AUMs	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Cow/calf *	1.40	77.0	107.8	754.6				107.8	107.8	107.8	107.8	107.8	107.8	107.8		
Cow, dry **	1.08	77.0	83.2	416.0	83.2	83.2	83.2								83.2	83.2
Yearlings ***																
Heifers ***	0.90	20.0	18.0	216.0	18.0	18.0	18.0	18.0	18.0	18.0	18.0	18.0	18.0	18.0	18.0	18.0
Bull, mature	1.70	8.0	13.6	163.2	13.6	13.6	13.6	13.6	13.6	13.6	13.6	13.6	13.6	13.6	13.6	13.6
Ewes	0.17															
Lambs, weaned	0.12															
Rams	0.25															
Horse	1.25	5.0	6.3	75.6	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3
Deer	0.17															
Elk	0.50															
Antelope	0.13															
Young cow/calf	1.20	54.0	64.8	453.6				64.8	64.8	64.8	64.8	64.8	64.8	64.8		
Young cow/dry	0.91	54.0	49.1	245.5	49.1	49.1	49.1								49.1	49.1
TOTAL				2324.5	170.2	170.2	170.2	210.5	170.2	170.2						

Notes: The general rule of thumb for animal unit month (AUM) forage requirements for a 1000 pound cow is 915 pounds. Reference: NRPH Chapter 6.

* For lactating cows, use a 0.1 of an animal unit per 100# of body weight plus 0.1 for the calf to figure AUE.

(For example, A 1200# cow with calf would be 1.3 AU).

** For a dry cow, multiply the AU factor of the cow, without the .1 added in for the calf, by .83 to get the AUE.

(For example, A 1200# cow would be 1.2 x .83 = 1 AU).

*** For yearling cattle and heifers, Figure 0.1 of an AU per 100# of body weight.

(For example, A 950# yearling would be 0.95 AU).

CH.11, Exhibit--Example-Forage, Roughage and Livestock Balance Worksheet

UNITED STATES DEPARTMENT OF AGRICULTURE
 NATURAL RESOURCES CONSERVATION SERVICE

MT-ECS-18B
 May 2010

Planned - FORAGE, ROUGHAGE AND LIVESTOCK BALANCE WORKSHEET (EXAMPLE)

Section B: Planned Forage Availability and Grazing Needs - Page 4

TABLE 9. Production vs. Needs.

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	TOTAL
Total Grazable AUMs Available (6) per month	99.3					198.7	198.7	198.7	198.7	198.7	198.7	198.7	1490.2
Total Roughage AUMs Available (7) per month	97.6	195.3	195.3	195.3	195.3								878.8
Total AUMs Needed (9) per month	170.2	170.2	170.2	210.5	210.5	210.5	210.5	210.5	210.5	210.5	170.2	170.2	2324.5
Balance + or -	26.7	25.1	25.1	-15.2	-15.2	-11.8	-11.8	-11.8	-11.8	-11.8	28.5	28.5	44.5

NOTES: The producer had enough roughage to increase feeding by one month. Stock water development increased the graziability of the big pasture by 100 AUMs. With the current stocking rate 125 AUMs are still needed. The producer is able to lease 125 AUM from his cousin.

TABLE 10. Wildlife Use Information.

Wildlife Species Present:				
Key Areas for:	Field(s)	Acres	Months of Use	Additional Information
Foraging				
Hiding Cover				
Thermal Cover				
Riparian Areas				
Calving/Fawning				
Strutting Grounds				
Other				

INSTRUCTIONS--GRAZING LAND INVENTORY SUMMARY SHEET**Heading Information:**

Fill in as applicable. MLRA information for Montana can be found at <http://www.mt.nrcs.usda.gov/technical/ecs/range/ecolsites/>.

Column A – Field Number: Enter field number from conservation plan and/or map. If a field has multiple ecological sites/land uses, the field number only needs to be entered once.

Column B – Acres: Enter the **TOTAL** acres of the respective field. If a field has multiple ecological sites/land uses, the total acres only need to be entered once.

Column C – Ecological Site or Land Use: Enter each ecological site or land use (i.e., pasture) occurring in each field. Column C subdivides Column A based on ecological sites and land uses. An ecological site may be listed several times within each field if the Similarity Index (S.I.) class is different between each one (see example).

Column D – Similarity Index (S.I.) Class or Pasture Condition: Enter values from clipping and inventory worksheets. Column D subdivides column C. For example, a field may contain a large Silty site, but a field visit/inventory determines two different S.I.'s exist for the Silty site, thus the Silty site would be listed twice in Column C, and each respective S.I. class in Column D.

Column E – Acres/Similarity Index or Pasture Condition: Enter acres of each S.I. class. Column E subdivides Column B. The total acres in Column E for each field should equal the total acres of the field in Column B.

Column F – Plant Community, Notes on Grazability, Usable Forage: List dominant plant species on the site; also include grazability notes, i.e., heavy use areas, ungrazed areas, limiting slope/terrain, etc. Enter, in lbs/acre, the consumable forage for the class of livestock to be grazed. Consumable forage is preferred and desired forage for a specific class of livestock.

Column G – Stocking Rate: Enter as AUMs/acre. This number can be acquired from several sources, such as clipping/inventory data (ECS-2), soil surveys, forage suitability group descriptions, or ecological site descriptions. $((\text{Lbs/acre} \times \text{harvest efficiency of } .25) / 915 = \text{AUM/acre})$

Column H – Grazability Adjustment Factor: This value adjusts the stocking rate based on landscape or attributes which limit livestock ability to graze, such as distance to water, slope, barriers, terrain, or site preference. Express this number as a decimal, for example, if a site is only 75% grazable due to rough terrain, then .75 would be entered here.

Column I – Total AUMs: This value is obtained by multiplying Columns E, G, and H. The value represents the AUMs for the specific ecological site with a specific S.I. within a field.

Column J – Total AUMs/Field: This figure is a running total of Column I. While Column I represents AUMs for each ecological site in a field, Column J is the total of **all** AUMs in the field.

Column K – Unused AUMs: This figure is obtained by multiplying Columns E and G, and then subtracting Column I from the product. This value takes into account AUMs which are not being utilized by livestock, due to factors listed above in Column H instructions. Figures may indicate areas where grazing efficiency may be increased by improving livestock distribution.

Total Acres – This figure is the total acres from column B. The total from all additional pages is displayed on the first page.

Total AUMs – This figure is the total AUMs for all the fields. The total from all additional pages is displayed on the first page.

CH. 11, Exhibits--Example-Grazing Land Inventory Summary Sheet

UNITED STATES DEPARTMENT OF AGRICULTURE
 NATURAL RESOURCES CONSERVATION SERVICE

MT-ECS-18A
 5/2010

EXAMPLE-GRAZING LAND INVENTORY SUMMARY SHEET

Producer: _____ Ranch/Range Unit: 3 Date: 1/25/2010
 Completed By: _____ MLRA/LRU: 58AA Mean Annual Precipitation: 12"

A	B	C	D	E	F	G	H	I	J	K
Field #	Acres	Ecosite or Landuse	S.I. Class or Pasture Condition ^{1/}	Acres/ S.I. or Pasture Condition	Plant Community, Notes on Grazability, Usable Forage ^{2/} (lbs/acre)	Stocking Rate (AUM/ac)	Grazability Adjust. Factor ^{3/} %	Total AUMs (ExGxH)	Total AUMs/ Field	Unused AUMs ^{4/} (ExG-I)
1	200	Loamy	25-34%	75	Western wheatgrass & short grasses. Heavy use near reservoir. #350	0.10	1.00	7.50		0.0
		Loamy	35-44%	25	# 450	0.12	1.00	3.00		0.0
		Clayey	35-44%	75	Prairie junegrass, some green needlegrass #450	0.12	1.00	9.00		0.0
		Shallow Loamy	45-54%	25	Steep slopes #600	0.16	0.75	3.00		1.0
									22.50	
2	150	Loamy	35-44%	100	wheatern wheatgrass, needle and thread #450	0.12	0.90	10.80		1.2
		Loamy Steep	55-64%	50	steep slopes lower use #750	0.20	0.75	7.50		2.5
									18.30	
3	85	Loamy	25-24%	50	Heavy use near reservoir #300	0.08	1.00	4.00		0.0
		Loamy Steep	55-64%	25	steep slopes lower use #550	0.15	0.80	3.00		0.8
		Overflow	<25%	10	Very heavy use, western, rose, blue grama #450	0.12	1.00	1.20		0.0
									8.20	
4	175	Loamy	25-34%	25	Heavy use near reservoir #400	0.11	1.00	2.75		0.0
		Loamy Steep	55-64%	75	steep slopes lower use #900	0.25	0.50	9.38		9.4
		Shallow Loamy	65-75%	50	Upper ridge, high condition #580	0.16	0.50	4.00		4.0
		Very Shallow	65-75%	25	Upper ridge, high condition #400	0.11	0.50	1.38		1.4
									17.51	
5	200	Loamy	25-34%	75	Western wheatgrass & short grasses. Heavy use near reservoir. #350	0.10	1.00	7.50		0.0
		Loamy	35-44%	25	# 450	0.12	1.00	3.00		0.0
		Clayey	35-44%	75	Prairie junegrass, some green needlegrass #450	0.12	1.00	9.00		0.0
		Shallow Loamy	45-54%	25	Steep slopes #600	0.16	0.75	3.00		1.0
									22.50	

Total Acres	895.0	Totals are for all fields					Total AUMs =	97.2			21.2
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Notes: Usuable forage was ocular estimated

^{1/} Similarity Index Classes: A= >75%, B= 65-75%, C= 55-64%, D= 45-54%, E= 35-44%, F= 25-34%, G= <25%.
^{2/} Usable Forage: Enter the total pounds per acre (dry weight) of consumable forage for the class of livestock to be grazed.
^{3/} Grazability Adjustment Factor: A value used to adjust the recommended stocking rate for landscape or other attributes which limit livestock ability to capture forage, such as distance to water, slope, barriers, terrain, or site preference. (Express as a decimal, ex., 75% = 0.75)
^{4/} Unused AUMs: These are based on grazability factors that prohibit livestock from utilizing all usable forage. These can be used to highlight areas where grazing efficiency may be increased by improving livestock distribution.

CH. 11, Exhibits--Monitoring Study Location and Documentation Worksheet

United States Department of Agriculture
 Natural Resources Conservation Service

MT-ECS-118A
 May 2010

Monitoring Study Location and Documentation Worksheet			
Ranch Name		Pasture	
Study Method		Study Number	
County		Ecological Site	
MLRA and LRU		Potential or Historic Plant Community – 2 to 3 spp.	
Date Established	Establishment by (Name)		Soil Component or MU
Elevation	Slope	Aspect	Aerial Photo Reference
Location: GPS Coord.	Township:	Range:	Section:
Key Species – Present Community Species			
1.		4.	
2.		5.	
3.		6.	
Distance and bearing between reference post or reference point and the transect location stake, beginning of transect, or plot.			
Distance and bearing between location stake and bearing stake.			
Transect Bearing		Vertical Distance Between Ground and Aligned Tape	
Length of Transect		Plot/Frame Size	
Sampling Interval		Total Number of Samples	
Notes: (Description of study location, diagram of transect/plot layout, description of photo points, etc. If more space is needed, use other side of worksheet.)			

Note: Depending on the study method, fill in the blocks that apply when a study is established. This documentation enables the examiners to conduct follow-up studies in a consistent manner to provide comparable data for analysis, interpretation, and evaluation.

RANGELAND MONITORING WORKSHEET INSTRUCTIONS

- A. Enter Field number.
- B. Enter monitoring transect number. Number photo and cover monitoring plots in the same location as 1A, 1B, etc.
- C. Check the type of monitoring plot: photograph, cover transect, or other method (name a specific method).
- D. List the LRU symbol and the rangeland or riparian ecological site the transect is located in.
- E. Enter the monitoring transect number from above.
- F. Enter date the transect is scheduled to be installed.
- G. List the consecutive years that transects should be recorded.
- H. Check individual years that transects are scheduled to be recorded in (in this case with an X).
- I. When monitoring is completed for a scheduled year – insert a checkmark in the appropriate column.
- J. NRCS signature.
- K. Cooperator signature.