

# MATADOR MULTIPLE-USE MANAGEMENT PLAN

## I. General Information

### A. Location

This plan was prepared as a model to show the public multiple-use management derived through an Allotment Management Plan. The plan was written by BLM in cooperation with the Department of State Lands and Marion Cross of the Matador Cattle Company with the grazing system designed by August L. Hormay. There was input into the plan by the Soil Conservation Service, Forest Service, Western Montana College, University of Montana, Bureau of Sports Fisheries and Wildlife, Extension Service, Montana State University, Resource Councils, Beaverhead Conservation District, private parties, Montana Fish and Game Department and the Sierra Club.

The Matador Allotment is approximately 30 miles south of Dillon, Montana, in the Blacktail Planning Unit. The National Resource Lands are administered by Section 15 of the Taylor Grazing Act and the state lands by 81-102 through 81-2808 Revised Codes of Montana.

The allotment is located on Little Sage Creek and Basin Creek drainages. The acreage is as follows:

Status	Acre	AUMs
NRL	39,442	8,643
State	26,312	7,900
Private	<u>12,436</u>	<u>1,000</u>
	78,190	17,543

### B. History

See Attached history.

### C. Resource Data

The topography consists of steep rolling hills to mountains and somewhat broad valleys. The elevation varies from a maximum of 8795 feet and a minimum of 6400 feet. The soils consist mainly of deep, well drained silty clay loams in the valleys to shallow silty loams on the ridges. The average annual precipitation is 10 to 14" annually with some areas receiving 20".

Vegetative types include:

Type	Acre	%
4-Artr-Agsp-Feid	26,780	33.0
1-Agsp-Feid	48,120	63.0
2-CAREX	620	.8
6-Psme	1,390	1.7
5-Cele	<u>1,280</u>	<u>1.5</u>
	78,190	100.0
	-1-	

Name of Area: Matador Allotment

Size: 88,553 acres

Location: Montana - Dillon District, BLM  
25 to 30 miles southeast of Dillon  
10 miles east of Dell, Montana

Elevation: 6200' to 8600'

<u>Land Ownership:</u>	Acres	%
Federal (NRL)	41,780	47
State	30,929	35
Private	15,844	18
Total	88,553	100

<u>Vegetative Types:</u>	Acres	%
Sagebrush	26,120	29.5
Grass	59,143	66.8
meadow	620	.7
conifer	1,390	1.6
mt. shrub.	1,280	1.4
Total	88,553	100.0

Climate:

	J.	F.	M.	A.	M.	J.	J.	A.	S.	O.	N.	D.
PRECIP.	.33	.29	.55	.93	1.77	2.11	1.08	.93	.96	.87	.41	.33
TEMP.	16.0	19.1	26.2	38.7	47.5	54.5	63.1	62.4	53.0	43.2	28.2	20.4

Highest Temperature 98°      Lowest Temperature 40°  
All precipitation and temperature data from Lima Station.

Geology:

The rocks and sediments which outcrop within the boundaries of this allotment range in geologic age from Pre-Cambrian gneiss, schist, and related rocks (from 600 million to 3 billion years old) to recent sediments.

Natural Water:

A few live streams, springs and seeps. No lake

## Land Uses:

### Indians

The Shoshone Indians hunted buffalo and other wildlife in the area as they migrated from the Salmon River each year in search of food.

### Trappers, Explorers and Miners

Trappers probably visited the area in the early 1800's. Lewis and Clark explored up the Beaverhead River and surrounding areas in 1805.

### Livestock

The history of livestock use of the allotment as described by old timers started in the early 1900's. Early livestock use was in June and July and again September and October. Mr. J. E. Morse used the planning unit about 1908 with 3,000 sheep.

Early accounts indicate that livestock use of the allotment was light. Old timers say in the mid 40's there was so much grass it couldn't be grazed off.

### Mid-40's to 1974 - Cattle and Sheep Use

About 9000 AUMs yearly

### Big Game

	<u>APPROXIMATE NUMBERS</u>	
	<u>Before Livestock Grazing</u>	<u>At Present</u>
Deer	Abundant	200+
Antelope	Abundant	350-400 (wt)
Sage Grouse	Abundant	Population large
	(No valid figure can be determined)	but unknown

### Recreation

Hunting--Deer, antelope, sage grouse; sightseeing; rock hounding

### Mining

None

**Memorandum**DEPARTMENT OF THE INTERIOR  
BUREAU OF LAND MANAGEMENT

IN REPLY REFER TO:

To : The Files

Date: September 3, 1974

FROM : Lewis Myers, Wildlife Biologist

SUBJECT: Browse Transects, Matodor Allotment

In August, 1973, we established ten sagebrush transects in the Sage Creek drainage. This area has a history of sheep and antelope winter use. Sheep winter use no longer occurs. This is a principal winter range for antelope which summer in the Centennial Valley. Data from ten transects are summarized below.

Transect	Dead Crown	Canopy Coverage	Height	Age Classes			
				S	Y	M	D
W-13-1	8.3%	7.0%	1.5'	0%	0%	63%	37%
W-13-2	30.7%	8.5%	1.4'	0%	0%	45%	55%
W-13-3	38.9%	4.6%	0.9'	0%	0%	31%	69%
W-13-4	23.9%	7.0%	0.8'	0%	0%	51%	49%
W-13-5	32.9%	7.0%	1.5'	0%	0%	37%	63%
* W-13-6	9.2%	21.2%	0.5'	32%	27%	23%	17%
W-13-7	27.9%	14.3%	1.5'	0%	0%	45%	55%
W-13-8	19.1%	8.8%	0.9'	0%	2%	56%	42%
*W-13-9	19.4%	12.8%	0.7'	0%	0%	61%	39%
*W-13-10	19.3%	10.4%	0.4'	0%	0%	63%	37%
	<u>22.9%</u>	<u>12.5%</u>		<u>62%</u>	<u>47.5%</u>	<u>46.3%</u>	

\**Artemisia arbuscula*, others *A. tridentata*

FISH POPULATION SAMPLES - BLACKTAIL PLANNING UNIT  
BLM & MDF&G - DILLON DISTRICTS, SEPT. 5, 1974, L. Myers, N. Peterson

Stream	Sections No./Length Total	Whitefish No. Avg.L.	Rainbow No. Avg.L.	Brook T. No. Avg.L.	Cutthroat No. Avg.L.	Cut X Rbow No. Avg.L.	White Sucker No. Avg.L.	Long-nosed Sucker No. Avg.L.	Mottled Sculpin	Long-nosed Dace
Big Sage Creek NE $\frac{1}{4}$ NE $\frac{1}{4}$ Sec 15, T12S R8W Conductivity = 390	1/250	7 10.8 (8.7-125)	45 6.3 (2.5-13.4)	4 8.2 (6.3-10.3)	- --	- --	5 10.4 (9.4-11.8)	9 6.5 (3.8-9.8)	observed	---
Big Sage Creek NE $\frac{1}{4}$ SE $\frac{1}{4}$ Sec 27, T11S R8W Conductivity = 330	2/400	2 10.2 (8.1-12.3)	50 8.0 (2.3-13.4)	4 9.3 (2.9-13.7)	- --	1 11.5	- --	8 10.4 (6.7-13.5)	observed	observed
Big Sage Creek SW $\frac{1}{4}$ NE $\frac{1}{4}$ Sec 8, T11S R8W Conductivity = 200	1/200	- --	1 5.2	3 7.7 (6.4-8.6)	- --	2 5.4 (5.0-5.8)	- --	- --	observed	---
Long Creek NE $\frac{1}{4}$ NE $\frac{1}{4}$ Sec 15, T11S R9W Conductivity = 340	1/200	- --	6 8.7 (4.5-11.1)	1 8.2	3 8.8 (8.4-9.3)	11 7.8 (4.5-12.9)	- --	- --	observed	---
Big Sage Creek SW $\frac{1}{4}$ NE $\frac{1}{4}$ Sec 34, T12S R8W Conductivity = 390	1/200	16 8.8 (6.2-11.9)	3 11.8 (10.0-17.2)	- --	- --	- --	65 9.3 (3.8-14.1)	20 7.6 (5.1-10.5)	observed	---
Basin Creek NW $\frac{1}{4}$ NE $\frac{1}{4}$ Sec 36, T12S R7W Conductivity = 280	spot- samples	- --	- --	- --	6 9.1 (5.8-10.6)	- --	- --	- --	-	---
Basin Creek (2 mile above confluence with Big Sage Creek)	1/300	- --	- --	- --	- --	- --	- --	- --	observed	---
Little Basin Creek SW $\frac{1}{4}$ NE $\frac{1}{4}$ Sec 1, T13S R7W Conductivity = 84	1/200	- --	- --	- --	3 9.7 (8.8-10.3)	1 8.5	- --	- --	-	---

# MATADOR ALLOTMENT ANIMAL LIST

## COMMON NAME

## MAJOR FOOD

## SIGNIFICANCE IN ALLOTMENT

### A. MAMMALS

#### 1. Game Mammals

Pronghorn

Mule Deer

Elk

Forbs, Artr, Arar

Forbs, Artr, Chvi, Cele

Agsp, Feld, Fesc

18,000 acres of crucial winter habitat

Summer habitat @ higher elevations; two winter habitats

Small portion of a winter range for up to 100

#### 2. Other Mammals

Mountain lion

Bobcat

Coyote

Wolf

Red Fox

Badger

Short-tailed Weasel

Long-tailed Weasel

Mink

Striped Skunk

V. Water Shrew

Vagrant Shrew

Little Brown Bat

Richardson Ground Squirrel

Golden-mantled Ground Squirrel

Yellowpine Chipmunk

Least Chipmunk

Red Squirrel

Yellow-bellied Marmot

Northern Pocket Gopher

Great Basin Pocket Mouse

Western Deer Mouse

Meadow Vole

Long-tailed Vole

Montane Vole

Bushy-tailed Wood Rat

Beaver

Porcupine

Muskrat

Snowshoe Hare

Mountain Cottontail

Black-tailed jackrabbit

White-tailed jackrabbit

Small mammals, deer, elk

Rabbits, rodents, occas. deer, antelope

" " " "

Small mammals, deer, elk

Small mammals

Ground squirrels, small rodents

Small mammals

Small mammals

Fish, muskrat, amphibians, insects, rodents

Insects, small mammals, fruit

Insects, worms, mice

Insects, worms, mice

Flying insects

Greens, seeds

Seeds, fruits, insects

" " " "

" " " "

" " " "

Greens, clovers, vetches

Roots and tubers

Grass, seeds

Grass, seeds

Nearly all green plant materials

Greens, bark

Greens, bark

Fruit, seeds, bark, forbs, grasses

Aspen, cottonwood, willow

Bark, shrubs, forbs

Aquatic emergent plants

Bark and twigs, aspen, alder, conifer.

Sagebrush, rabbitbrush grasses

Forbs, Sagebrush, rabbitbrush

Grasses, sagebrush

Very rare

Uncommon

Very common

A few unconfirmed observations

Common

Common

Uncommon, Timbered and riparian areas

Common in riparian areas

Common along perennial streams

Prob. restricted to lower Sage Creek

Riparian areas

Common, meadows and moist woodlands

Prob. Common

Abundant throughout allotment

Common in timbered areas

" " " "

Common in sage-grasslands

Common in timbered areas

Common in rocky areas

Common except woodlands and thin soils

An unconfirmed possibility

Found in nearly all habitats

Prob. common in meadows, streambanks

Prob. common in variety of habitats

Sage grasslands

Common, sage, woodland

Common in all streams

Common in variety of habitats

Sage Creek only

Common in timbered areas

Common in brushy draws

Restricted to S.W. portion

Common in grasslands

# MATADOR ALLOTMENT ANIMAL LIST

COMMON NAME	MAJOR FOOD	SIGNIFICANCE IN ALLOTMENT
<b>B. BIRDS</b>		
1. Game Birds		
Sage Grouse	Forbs, insects, sagebrush	Major species, several breeding complexes
Hungarian Partridge	Grain, grass seeds, weed seeds	Sporadic occurrence, grassy and riparian areas
Blue Grouse	Buds, needles, green forbs, berries	Limited occurrence due to limited conifer
2. Non-Game Birds		
Killdeer	Insects	Common near water margins, wet flats
Common Snipe	Insects, worms, snails, aquatic plants	Uncommon, streams
Rock Dove	Weed seeds, grass seeds, grain	Common, feral bird near ranches
Mourning Dove	Weed seeds, grass seeds, grain	Primarily a migrant
C. Nighthawk	Flying insects	Common
Kingfisher	Fishes, frogs, lizards	Sage Cr., Basin Cr., Little Basin Cr., Long Cr.
Flicker	Ants, other insects	Common in woodland areas
E. Kingbird	Insects	Common, riparian and agricultural areas
W. Kingbird	Insects	Common, rangeland and agricultural areas
Willow Flycatcher	Insects	Status unknown
Horned Lark	Insects, weed seeds	Common, rangeland, roadsides
Violet Green Swallow	Flying insects	Status Unknown
Tree Swallow	" "	" "
Rough-winged Swallow	" "	" "
Barn Swallow	" "	" "
Cliff Swallow	" "	" "
Stellar's Jay	Conifer seeds, fruits, insects	Limited occurrence due to limited conifer habitat
Black-billed Magpie	Carion, grasshoppers, seeds and fruits	Common, resident
C. Crow	Carion, insects, seeds, fruits	Uncommon
Clark's Nutcracker	Conifer seeds, insects	Limited to conifer habitat
Black-capped Chickadee	Insects, insect eggs	Common, conifer and riparian
Red-breasted Nuthatch	Bark insects, fruits	Limited to conifer habitats
House Wren	Primarily insects	Status unknown
Rock Wren	" "	" "
Sage Thrasher	Beetles, grasshoppers, other insects	Prob. common in sage-grasslands
American Robin	Insects, fruit, worms	Widespread, wherever food occurs
Hermit Thrush	Insects, fruit	Status unknown, conifer and riparian
Mt. Bluebird	Beetles, grasshoppers, other insects	Common breeding species
Ruby-crowned Kinglet	Insects, insect eggs	Limited to conifer habitat
Starling	Insects, fruits	Common, riparian and agricultural habitats

MATADOR ALLOTMENT ANIMAL LIST

COMMON NAME

MAJOR FOOD

SIGNIFICANCE IN ALLOTMENT

Warbling Vireo	Caterpillars, Insects	Status unknown
Yellow Warbler	Insects	Common in riparian habitats
Yellow-rumped Warbler	"	Status unknown
MacGillivray's Warbler	"	"
C. Yellowthroat	"	"
Wilson's Warbler	"	"
House Sparrow	Seeds	Common near ranchers, agriculture
W. Meadowlark	Insects, seeds	Common in meadows, prairies, rangelands
Yellow-headed Blackbird	Grain, seeds, Insects	Common in meadows, marshes, streams
Red-winged Blackbird	"	"
Brewer's Blackbird	"	"
Brown-headed Cowbird	"	"
W. Tanager	Fruit, Insects	Status unknown
Lazuli Bunting	Insects, seeds of weedy plants	Status unknown
Cassin's finch	Buds, Seeds, Fruits	"
House Finch	Seeds, Fruits	"
Gray-crowned rosy finch	Seeds	"
Black Rosy Finch	Seeds, Insects	"
Pine Siskin	Conifer and weed seeds	"
Am. Goldfinch	Weed seeds, Insects	"
Green-tailed Towhee	Insects	Common, open conifer, brushy areas
Savannah Sparrow	Weed seeds, Insects	Common, rangeland and all open areas
Vesper Sparrow	Seeds, Insects	Common, open country, sage grass
Dark-eyed Junco	Seeds, Insects	Uncommon, open conifer
Chipping Sparrow	"	Uncommon, open conifer, riparian
Brewer's Sparrow	"	Common, sage grass
White-crowned Sparrow	"	Common, sage grass, riparian
McGowan's Longspur	"	Common, open rangelands
3. Predatory Birds		
Goshawk	Small Mammals	Rare in allotment
Cooper's Hawk	Birds, small mammals	"
Red-tailed Hawk	Rabbits, small mammals	Common resident
Swainson's Hawk	"	"
Rough-legged Hawk	"	"
Ferruginous Hawk	"	"
Golden Eagle	"	Winter concentration, yearlong



MATADOR ALLOTMENT ANIMAL LIST

COMMON NAME	MAJOR FOOD	SIGNIFICANCE	IN ALLOTMENT
Bald Eagle	Fish, rabbits, small mammals	Rare Winter Visitor	
Marsh Hawk	Small mammals, birds	Common resident	
Prairie Falcon	" "	" "	
American Kestrel	Insects, small mammals, small birds	Confirmed, variety of habitats	
Great Horned Owl	Rabbits, rodents, birds	Confirmed, open country	
Short-eared Owl	Small mammals, birds		
C. Amphibians			
Spadefoot Toad	Insects	Unconfirmed, prob. in loose, sandy soils	
Western Toad	Insects	Common, wet meadows, marshes, near streams	
Boreal Chorus Frog	Insects	Unconfirmed " "	
Leopard Frog	Insects	Unconfirmed " "	
Spotted Frog	Insects	Common, streams and ponds	
Tiger Salamander	Aquatic Invertebrates	Unconfirmed, streams and ponds	
D. Reptiles			
Prairie Rattlesnake	Rodents, Birds, frogs	Fairly common, rocky areas, rangelands	
Common Garter Snake	Frogs, toads, snails, insects	Prob. common, near streams and ponds	
Western Garter Snake	Frogs, toads, mice, fish, insects	Prob. common, near aquatic habitats and in rangelands	
Bull Snake	Rodents, rabbits, birds	Common in rangelands	
Rubber Boa	Small mammals, reptiles, insects	Unconfirmed, moist areas near conifers	
Sagebrush Lizard	Insects, spiders	Unconfirmed, open sage-grasslands	
Northern Alligator Lizard	" "	Unconfirmed, prob. in conifer woodlands	
E. Fishes			
Cutthroat Trout	Aquatic invertebrates, fish	Much reduced, Long Cr., Basin Cr., Little Basin Cr.	
Rainbow Trout	" "	Common, Sage Cr., Long Cr.	
Long-nosed sucker	Algae, detritus, aquatic invertebrates	Common, Lower Sage Cr.	
White Sucker	" "	" " Cr.	
Mountain Whitefish	Aquatic Invertebrates	Common, Sage Cr.	
Mottled Sculpin	" "	Common, all streams	
Long-nose Dace	" "	Sage Cr.	

## MATADOR ALLOTMENT--PLANT LIFE--PHENOLOGY

SCIENTIFIC NAME	COMMON NAME	SYMBOL	START GROWTH	FLOWERS	SEED RIPE	REGROWTH GRAZED -2
GRASSES AND GRASS LIKE						
Agropyron dasystachyum	thickspike wheatgrass	Agda	5/5	7/15	8/20	
A. smithii	western w.	Agsm				
A. spicatum	bluebunch w.	Agsp	4/10	6/5	8/5	6/5
A. subsecundum	bearded w.	Agsu	5/5	7/10	8/20	
A. trachycaulium	slender w.	Agtr	5/5	7/10	8/20	
Agrostis alba	red top bentgrass	Agal				
A. scabra	ticklegass b.	Agsc				
Bouteloua gracilis	blue grama	Bogr				
Bromus anomalus	nodding bromegrass	Bran				
B. marginatus	mountain b.	Brma	5/5	7/10	8/20	
Calamagrostis montanensis	plains reedgrass	Camo				
Danthonia intermedia	timber oatgrass	Dain	5/5	7/10	8/20	
Deschampsia cespitosa	tufted hairgrass	Dece				
Distichlis stricta	inland saltgrass	Dist				
Elymus cinereus	great basin wild rye	Elci	5/5	7/25	8/20	
Festuca idahoensis	Idaho fescue	Feld	5/5	7/20	8/15	
Glyceria grandis	american mannagrass	Glgr				
Hesperochloa kingii	spike fescue	Heki				
Hordeum jubatum	foxtail barley	Hoju				
Koeleria cristata	junegrass	Kocr	5/1	6/10	7/5	
Muhlenbergia richardsonis	mat muhly	Muri				

MATADOR ALLOTMENT--PLANT LIFE--PHENOLOGY

SCIENTIFIC NAME	COMMON	SYMBOL	START GROWTH	FLOWERS	SEED RIPE	REGROWTH GRAZED TO
<i>Oryzopsis hymenoides</i>	indian ricegrass	Orhy	5/5	7/20	8/15	
<i>Phleum pratense</i>	timothy	Phpr				
<i>Poa juncifolia</i>	alkali-bluegrass	Poju				
<i>P. nervosa</i>	wheeler b.	Pone				
<i>P. pratensis</i>	kentucky b.	Popr	5/1	7/5	8/15	
<i>P. secunda</i>	sandberg b.	Pose	5/1	6/10	7/5	
<i>Puccinellia</i> spp.	alkali grass	Pucc				
<i>Sitanion hystrix</i>	squirreltail	Sihy				
<i>Stipa columbiana</i>	columbia needlegress	Stco	5/5	6/15	7/15	
<i>S. comata</i>	needle-and-thread grass	Stco2	5/1	6/10	7/15	
<i>S. richardsonii</i>	richardson needlegress	Strl				
<i>S. viridula</i>	green needlegress	Stvl				
<i>Trisetum canescens</i>	tall trisetum	Trca	5/5	7/20	8/20	
<i>Carex festivella</i>	ovalhead sedge	Cafe				
<i>C. nebraskensis</i>	nebraska s.	Cane				
<i>C. rossii</i>	ross s.	Caro				
<i>C. rostrata</i>	beaked s.	Caro2				
<i>Juncus balticus</i>	baltic rush	Juba				
FORBS AND LOWER PLANTS						
<i>Achillea lanulosa</i>	yarrow	Acla				
<i>Agoseris glauca</i>	pole agoseris	Aggl				
<i>Allium cernuum</i>	hoddling onion	Alce				
<i>Androsace septentrionalis</i>	northern androsace rockjasmine	Anse				

MATADOR ALLOTMENT--PLANT LIFE--PHENOLOGY

SCIENTIFIC NAME	COMMON NAME	SYMBOL	START GROWTH	FLOWERS	SEED RIPE	REGROWTH GRAZED
Anemone multifida	ball anemone	Annu				
Antennaria anaphaloides	pussytoes	Anan				
A. parvifolia	small-leaf p.	Anpa				
A. rosea	rose p.	Anro				
Aquilegia flavescens	yellow columbine	Aqfl				
Arabis spp.	rock cress	ARAB				
Arenaria congesta	balthead sandwort	Arco				
Arnica cordifolia	heartleaf arnica	Arcoz				
Artemisia ludoviciana	cudweed sagewort	Arlu				
Aster conspicuus	showy aster	Asco				
A. falcatus	—	Asfa				
A. laevis	smooth aster	Asla				
Astragalus miser	timber milkvetch	Asml				
A. tefefarius		Aste				
Balsamorhiza sagittata	arrowleaf balsomroot	Basa				
Campanula rotundifolia	roundleaf harebell	Caro				
Castilleja linariaefolia	wyoming indian paintbrush	Call				
Cerastium arvense	field chickweed	Cear				
Chenopodium leptophyllum	slimleaf goosefoot	Chle				
Chrysopsis villosa	hairy goldenaster	Chvl				
Cirsium arvense	canada thistle	Ciar				
C. undulatum	wavyleaf thistle	Ciun				

MATADOR ALLOTMENT--PLANT LIFE--PHENOLOGY

SCIENTIFIC NAME	COMMON NAME	SYMBOL	START GROWTH	FLOWERS	SEED RIPE	REGRANT- GRAZED
Comandra umbellata	bastard toad-flax	Coum				
Crepis acuminata	tapertip hawk's-beard	Crac				
C. runcinata	dandelion hawk's-beard	Crru				
Cryptantha celosloides		Crce				
Cynoglossum officinale	common hound's tongue	Cyof				
Delphinium geyeri	geyer larkspur	Dege				
D. glaucescens	glaucous l.	Degl				
Descurainia sophia		Deso				
Espilobium angustifolium	fireweed	Epan				
E. paniculatum	autumn willow herb	Eppa				
Equisetum arvense	field horsetail	Eqar				
Erigeron compositus	fernleaf fleabane	Erco				
E. peregrinus	peregrine f.	Erpe				
E. pumilus	low f.	Erpu				
Eriogonum flavum	yellow buckwheat	Erfl				
E. microthecum		Ermi				
E. ovalifolium	cushion b.	Erov				
E. umbellatum	sulfer b.	Erum				
Erysimum inconspicuum	small flowered wallflower	Erin				
Fragaria virginiana	wild strawberry	Frvl				
Frasera speciosa	showy fraseria (elkweed)	Frsp				
Gallium boreale	northern bedstraw	Gabo				
Gentiana spp.	gentian	GENT				

MATADOR ALLOTMENT--PLANT LIFE--PHENOLOGY

SCIENTIFIC NAME	COMMON NAME	SYMBOL	START GROWTH	FLOWERS	SEED RIPE	REGROWTH GRAZED TO
Geranium viscosissimum	sticky geranium	Gevi				
Geum triflorum	prariesmoke	Getr				
Helianthella uniflora	oneflower helianthella	Heun				
Heuchera cylindrica	roundleaf alumroot	Heay				
Hymenoxys acaulis	stemless hymenoxys	Hyac				
Hyooscyamus niger	black henbane	Hyni				
Iris missouriensis	rocky mountain iris	Irimi				
Lappula redowskii	western stickseed	Lare				
Lesquerella alpina	alkaline bladderpod	Leal				
Linum perenne	perennial flax	Lipe				
Lithospermum ruderale	western gromwell	Liru				
Lupinus candatus L. sericeus	silky lupine	Luca Luse				
Lycchnis drummondii		Lydr				
Malva mamillaria vivipara		Mamavi				
Mentha arvensis	field mint	Mear				
Monolepis nuttalliana	nuttall monolepis	Monu				
Opuntia polyacantha	plains pricklypear	Oppo				
Orthocarpus luteus O. tenuifolius	yellow owlclover thin-leaves orthocarpus	Orlu Orte				

MATADOR ALLOTMENT--PLANT LIFE--PHENOLOGY

SCIENTIFIC NAME	COMMON NAME	SYMBOL	START GROWTH	FLOWERS	SEED RIPE	REGROWTH GRAZED TO
Osmorhiza occidentalis		Osoc				
Oxytropis sericea	white pointloco	Oxse				
Parnassia fimbriata	rocky mtn. parnassus	Pafi				
Penstemon albertinus		Peal				
P. nydbergii		Pery				
Perideridia gairdneri	Yampa	Pega				
Phacelia hastata	silver leaf phacelia	Phha				
Phlox hoodii	hoods phlox	Phho				
P. longifolia	longleaf p.	Phlo				
Polygonum douglasii	douglas knotweed	Podo				
Potentilla anserina	silverwild cinquefoil	Poan				
P. arguta	tall c.	Poar				
P. glandulosa	gland c.	Pogl				
P. gracilis	northwest c.	Pogr				
P. pennsylvanica	pennsylvania c.	Pope				
P. plattensis		Popl				
Pyrola spp.	wintergreen	Pywl				
P. secunda		Pyse				
Ranunculus acris	tall buttercup	Raac				
R. glaberrimus	sagebrush b.	Ragl				
Rumex crispus	curby dock	Rucr				
Salsola kali	russian thistle	Saka				
Saxifraga rhomboidea	diamondleaf saxifrage	Sarh				
Sedum stenopetalum	yellow stonecrop	Sest				
Selaginella densa	small clubmoss	Seda				

MATADOR ALLOTMENT--PLANT LIFE--PHENOLOGY

SCIENTIFIC NAME	COMMON NAME	SYMBOL	START GROWTH	FLOWERS	SEED RIPE	REGROWTH GRAZED TO
Senecio canus S. debilis	wooly groundsel	Seca Sede				
Smilacina stellata	starry solomon's seal	Smst				
Solidago spp.	goldenrod	SOLI				
Stanleya viridiflora	--	Stvf				
Taraxacum laevigatum	smooth dandelion	Tala				
Thalictrum occidentale	western meadow rue	Thoc				
Thermopsis rhombifolia	prairie thermopsis	Thrh				
Thlaspi arvense	fanweed	Thar				
Townsendia spp.	townsendia	TOWN				
Triglochin polustre	--	Trpa				
Urtica dioica	stinging nettle	Urdi				
Valeriana edulis	edible valerian	Vaed				
Veronica americana	american speedwell	Veam				
Viola spp.	violet	VIOL				
Zigadenus elegans	mountain death camas	Ziel				
WOODY PLANTS						
Amelanchier alnifolia	serviceberry	AnaI				
Artemisia arbuscula	low sagebrush	Arar				

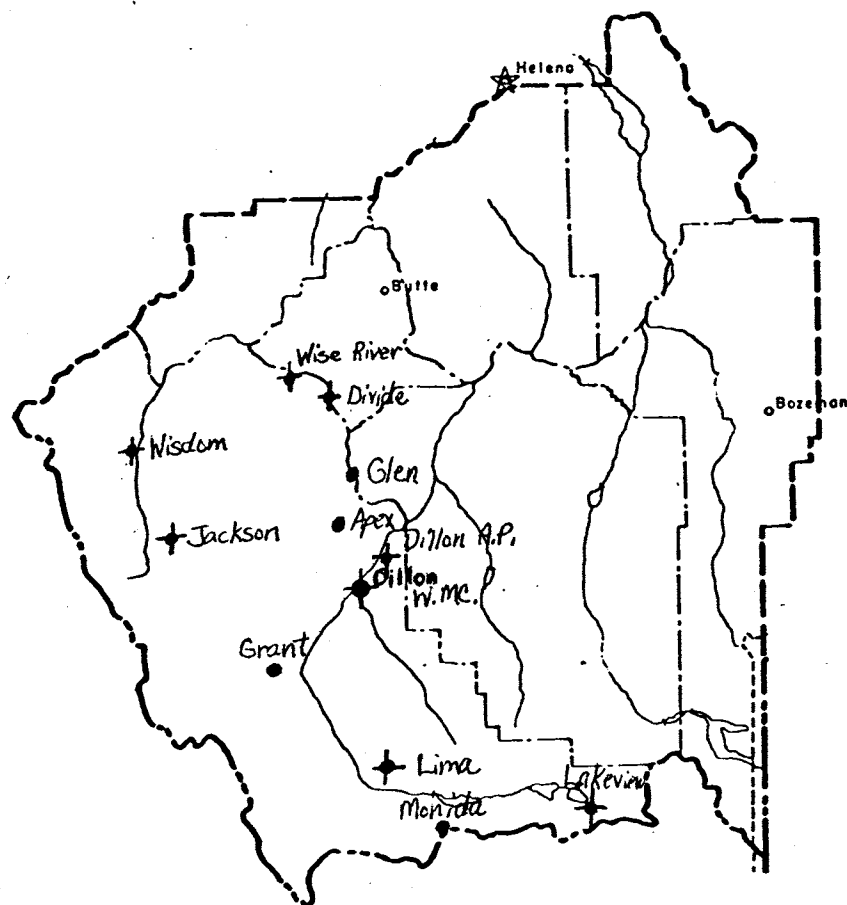


MATADOR ALLOTMENT--PLANT LIFE--PHENOLOGY

SCIENTIFIC NAME	COMMON NAME	SYMBOL	START GROWTH	FLOWERS	SEED RIPE	REGROWTH GRAZED TO
Artemisia cana	silver s.	Area				
A. frigidula	fringed s.	Arfr				
A. tridentata	big s.	Artr				
A. tridentata vasyana	mountain big s.	Artrva				
Atriplex nuttallii	nuttall saltbrush	Atnu				
Cercocarpus ledifolius	curlleaf mtn. mahogany	Cele				
Chrysothamnus nauseosus	rubber rabbitbrush	Chma				
C. viscidiflorus	douglas r.	Chvi				
Eurotia lanata	common winterfat	Eula				
Gutierrezia sarothrae	broom snakeweed	Gusa				
Juniperus communis	common juniper	Juco				
Leptodactylon pungens	granite gilia	Lepu				
Pinus contorta	lodgepole pine	Pico				
P. flexilis	limber pine	Pifl				
Populus angustifolia	narrowleaf cottonwood	Poan				
P. tremuloides	quaking aspen	Potr				
Potentilla fruticosa	shrubby cinquefoil	Pofr				
Prunus virginiana	chokecherry	Pruf				
Pseudotsuga menziesii	douglas fir	Psdo				
Ribes aureum	golden current	Riau				
R. cereum	wax or squaw c.	Rice				

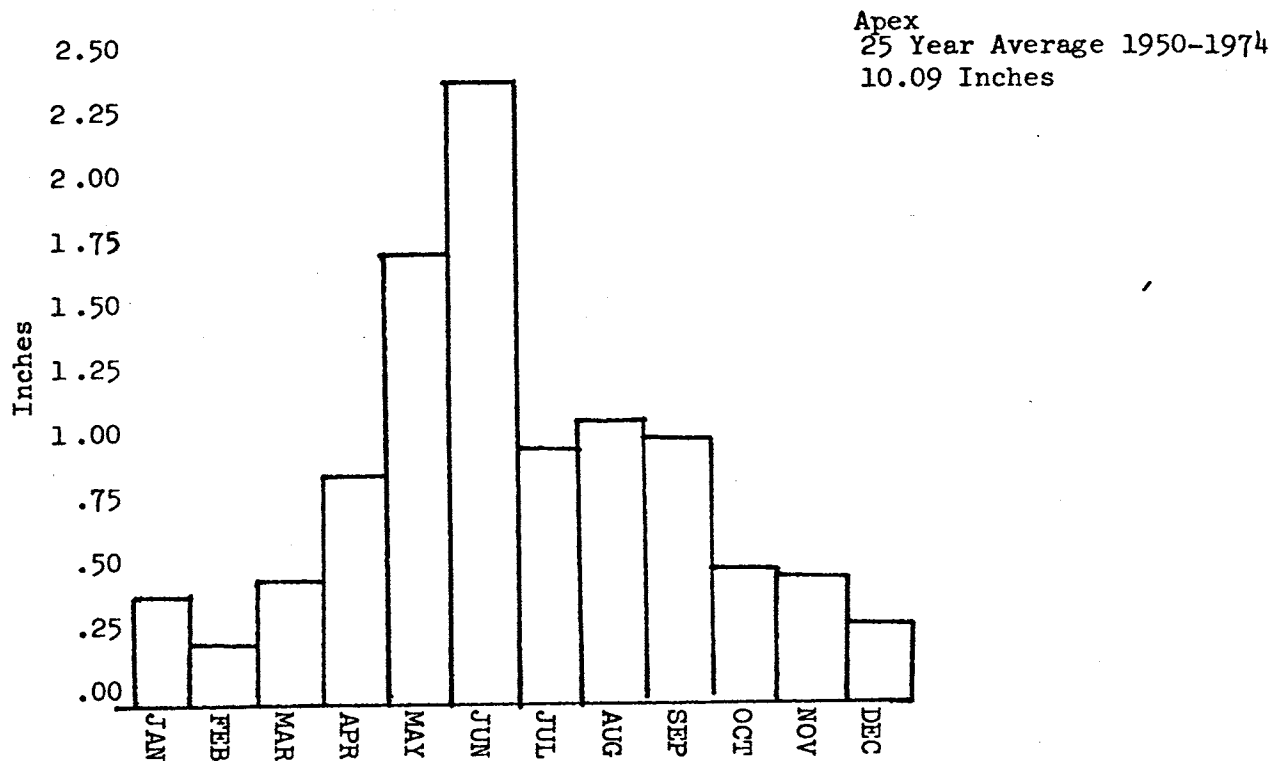
MATADOR ALLOTMENT--PLANT LIFE--PHENOLOGY

SCIENTIFIC NAME	COMMON NAME	SYMBOL	START GROWTH	FLOWERS	SEED RIPE	REGROWTH # GRAZED TO:
<i>Rosa acicularis</i>	prickly rose	Roac				
<i>Rubus ideaus</i>	red raspberry	Ruid				
<i>Salix spp.</i>	willow	SALI				
<i>Sarcobatus vermiculatus</i>	black greasewood	Save				
<i>Shepherdia canadensis</i>	russet buffaloberry	Shca				
<i>Spiraea betulifolia</i>	white spiraea	Sphe				
<i>Symphoricarpos albus</i>	snowberry	Syal				
<i>Tetradymia canescens</i>	spineless horsebrush	Teca				

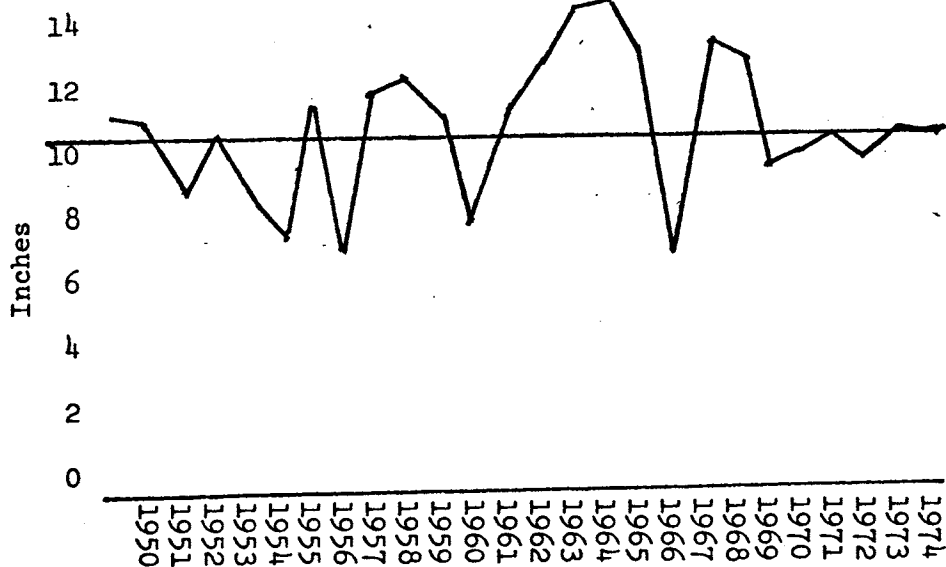


### LEGEND

- Precipitation Only
- ✦ Precipitation and Temperature



Total Monthly Precipitation  
25-Year Average

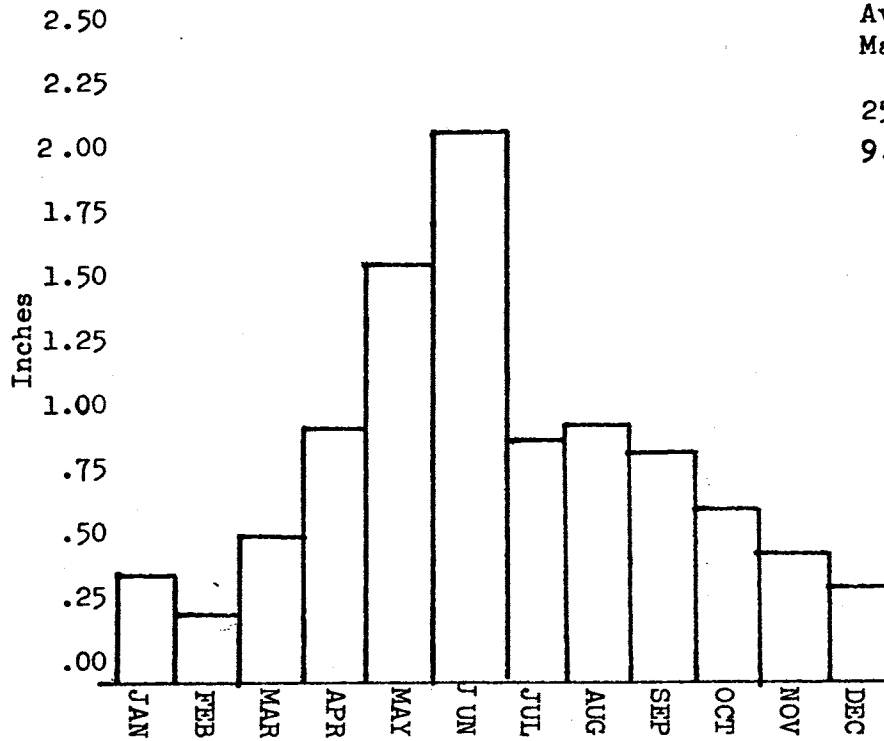


Total Precipitation  
Yearly Average

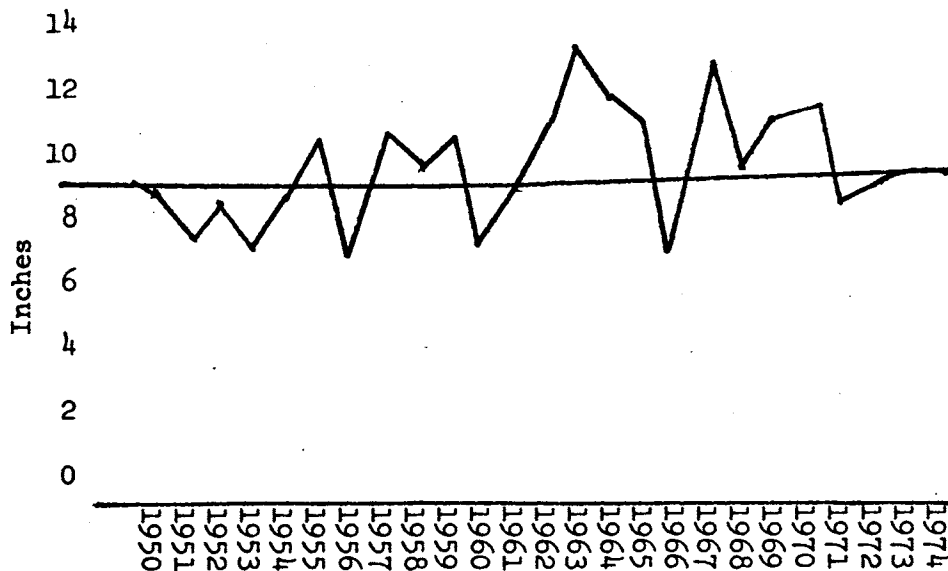
Dillon F.A.A. Airport

Average Frost-Free Days- 106  
May 28 - September 11

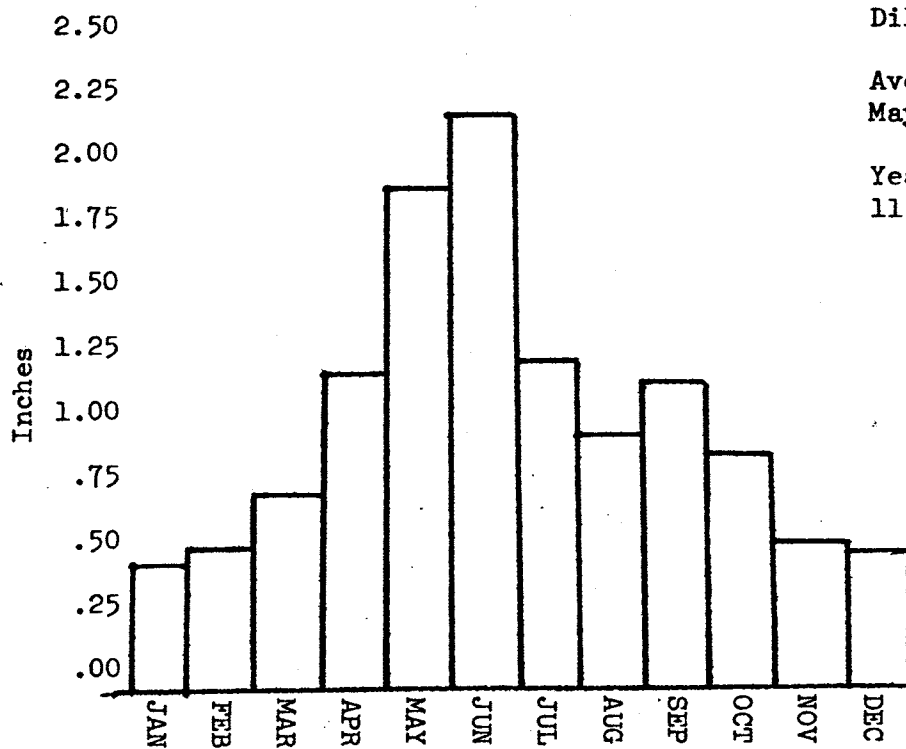
25 Year Average 1950-1974  
9.42 Inches



Total Monthly Precipitation  
25-Year Average



Total Precipitation  
Yearly Average

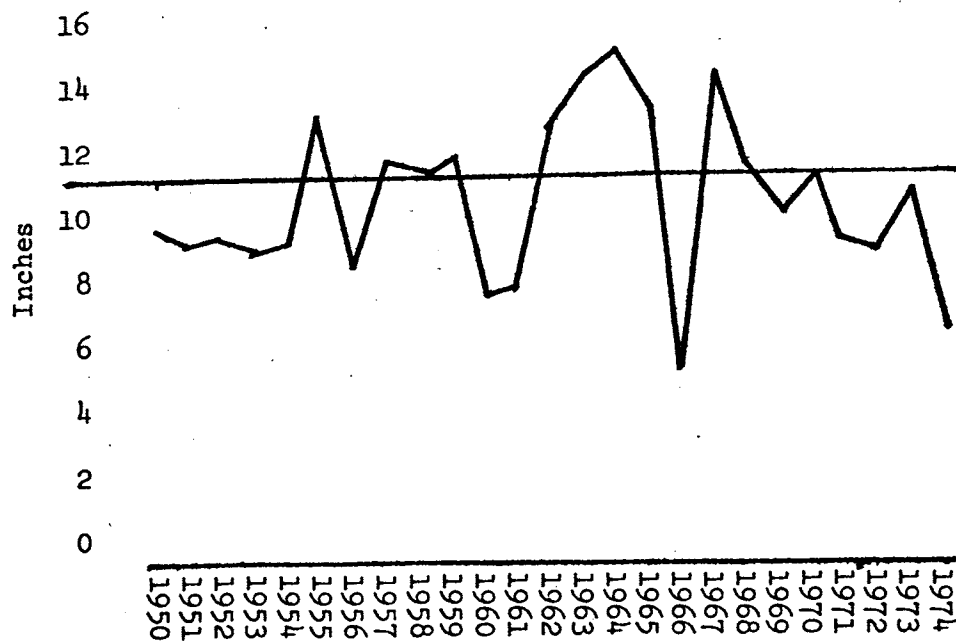


Dillon W.M.C.

Average Frost-Free Days- 106  
May 28 - September 11

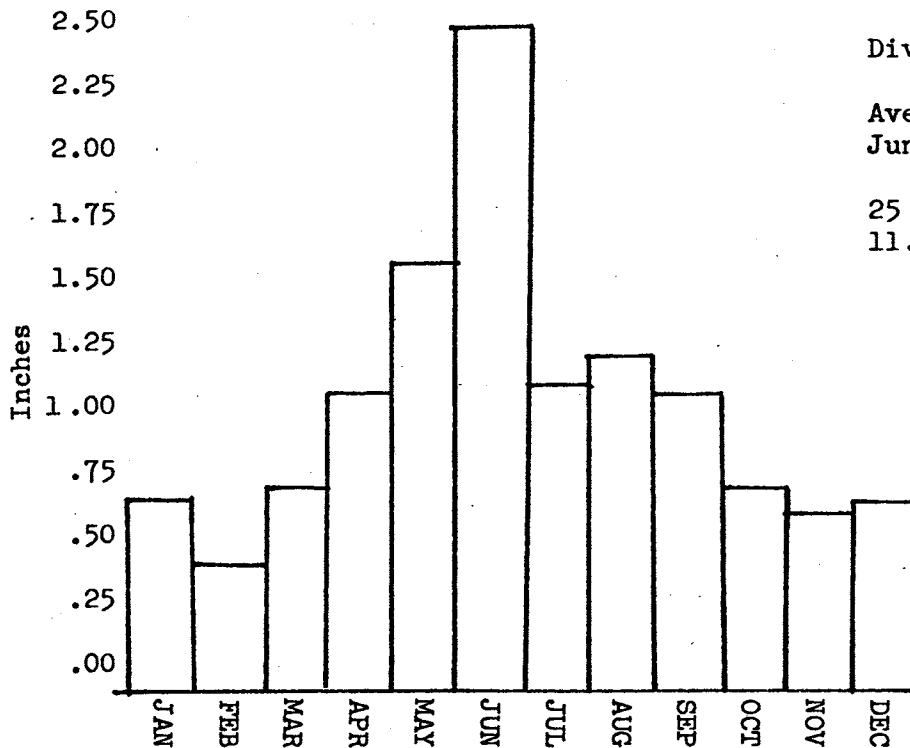
Yearly Average Precipitation  
11.34 Inches

Total Monthly Precipitation

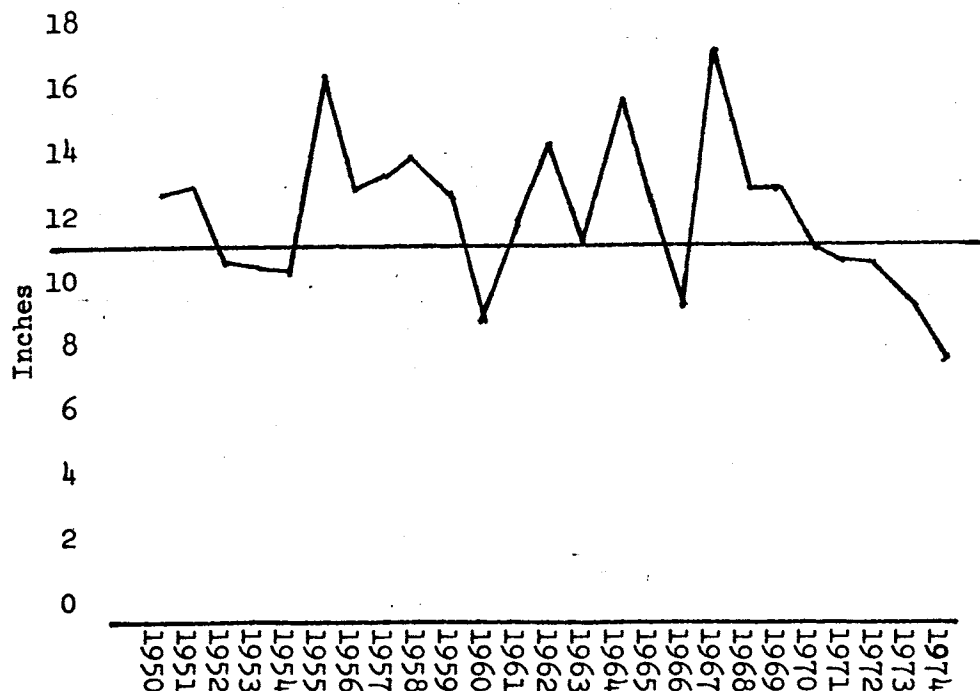


Total Precipitation

Yearly Average



Total Monthly Precipitation  
25-Year Average

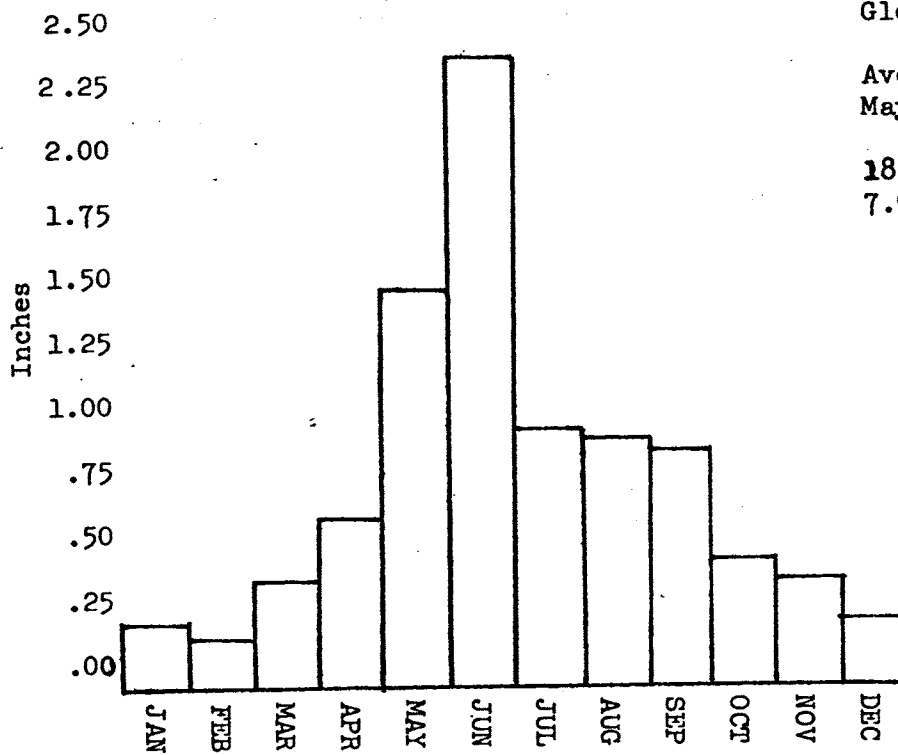


Total Precipitation  
Yearly Average

Divide

Average Frost-Free Days- 92  
June 11 - September 11

25 Year Average 1950-1974  
11.82 Inches Precipitation

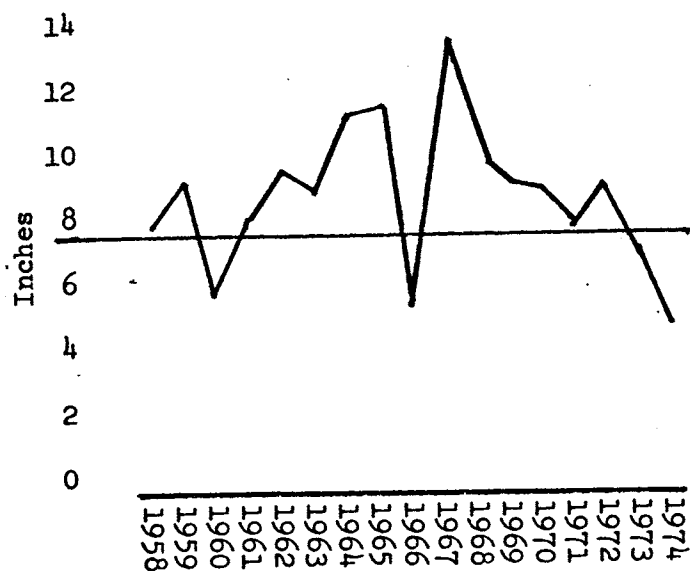


Glen

Average Frost-Free Days-92  
May 31 - August 31

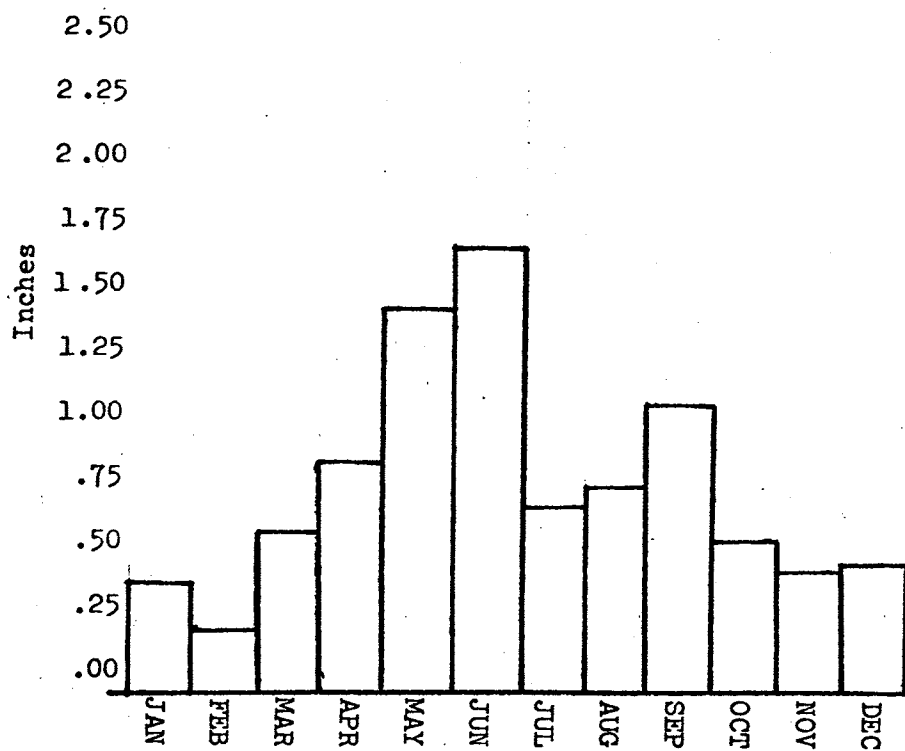
18 Year Average 1958-1974  
7.93 Inches Precipitation

Total Monthly Precipitation  
18-Year Average

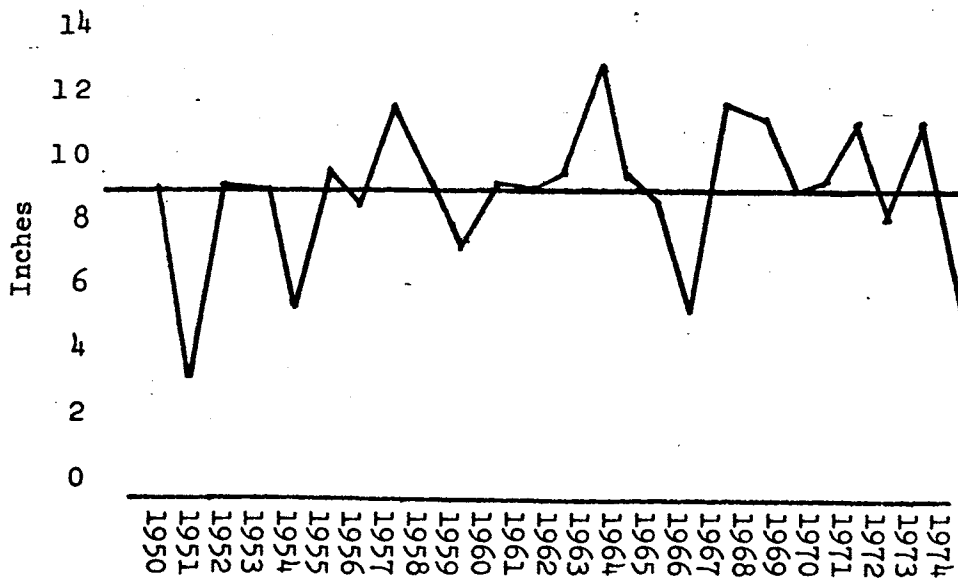


Total Precipitation  
Yearly Average

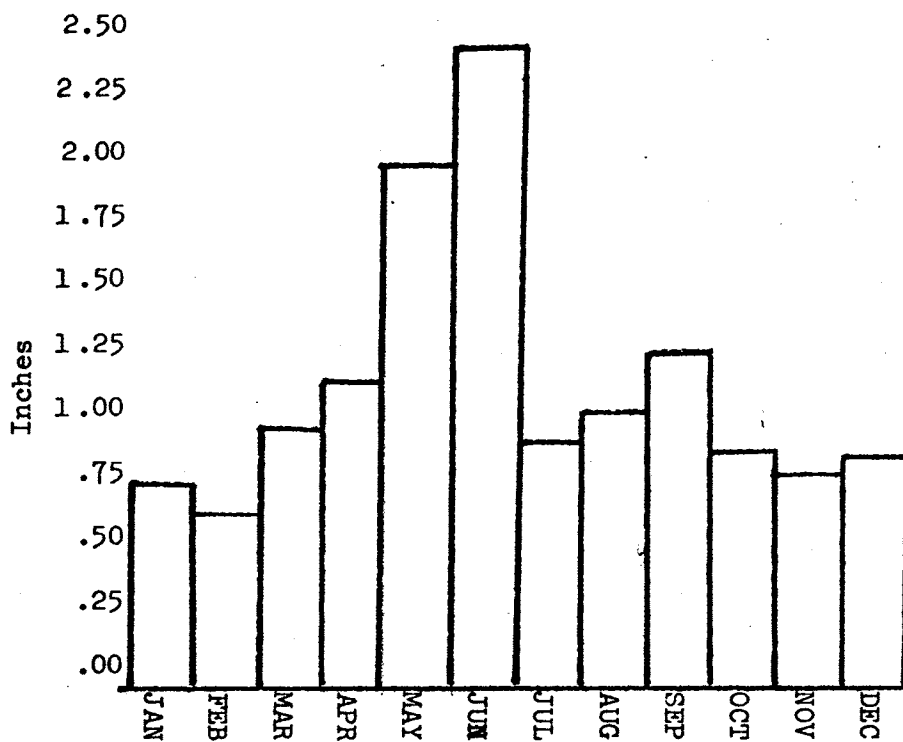




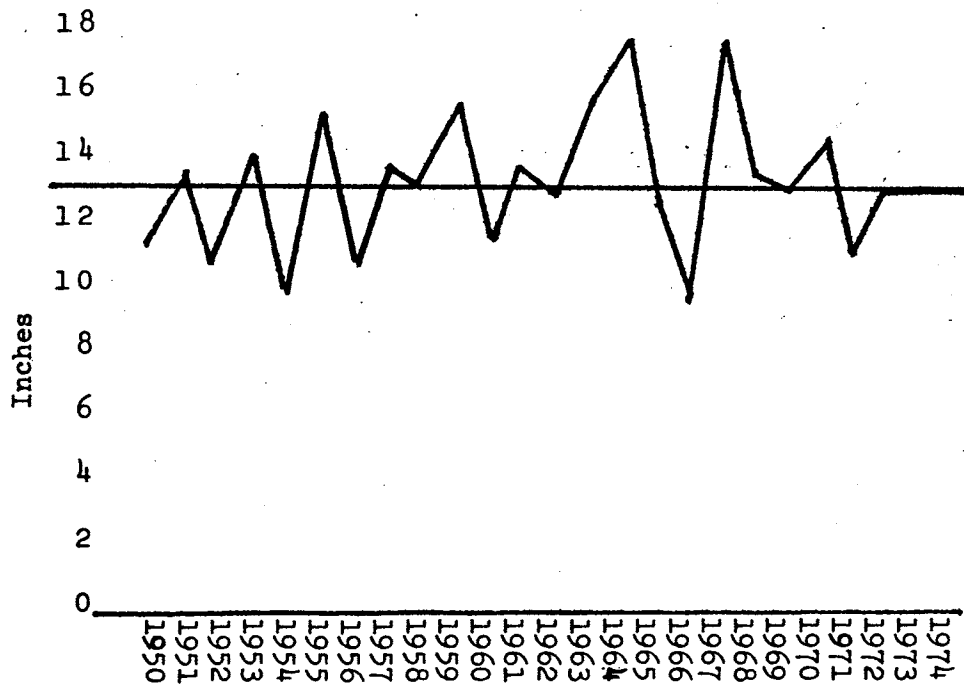
Total Monthly Precipitation  
25-Year Average



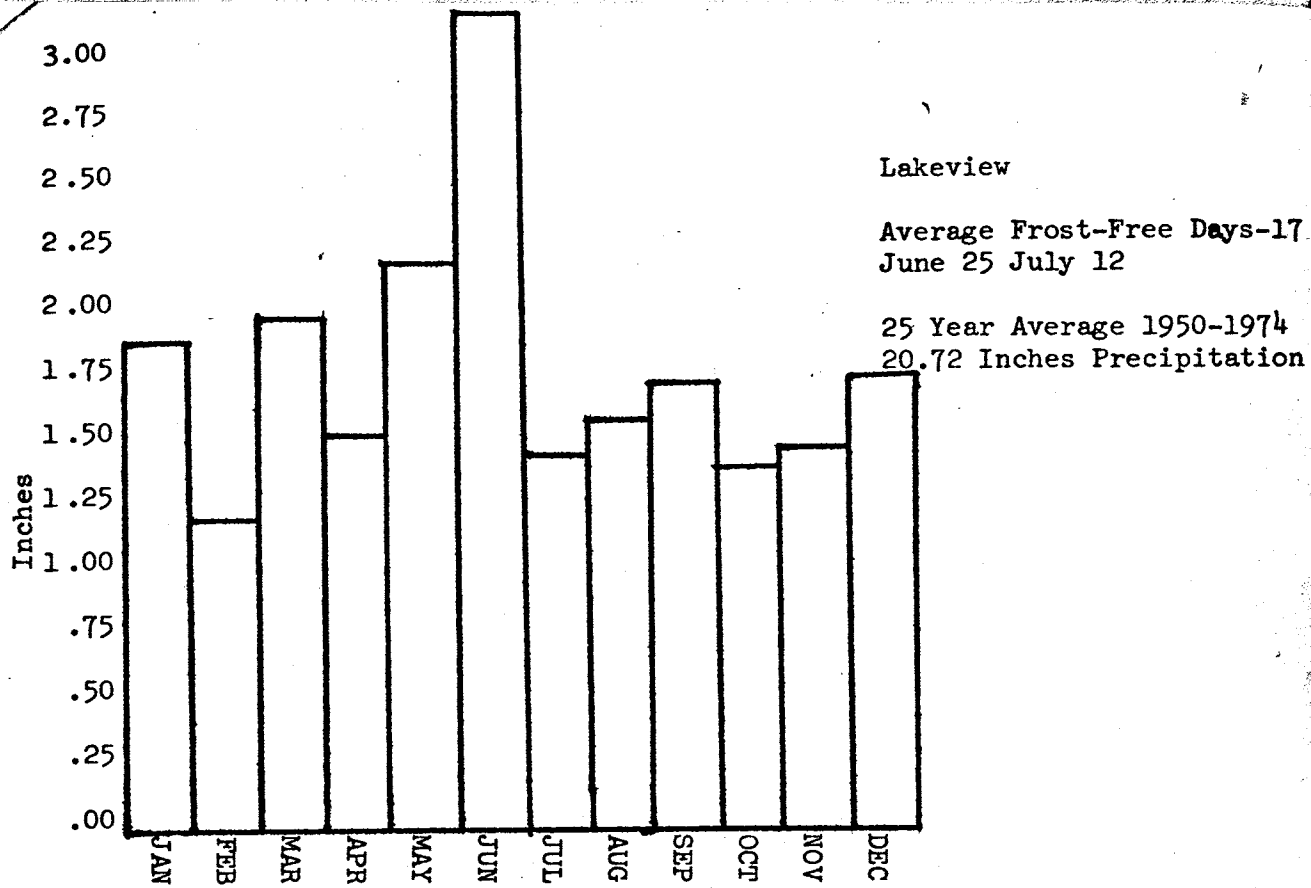
Total Precipitation  
Yearly Average



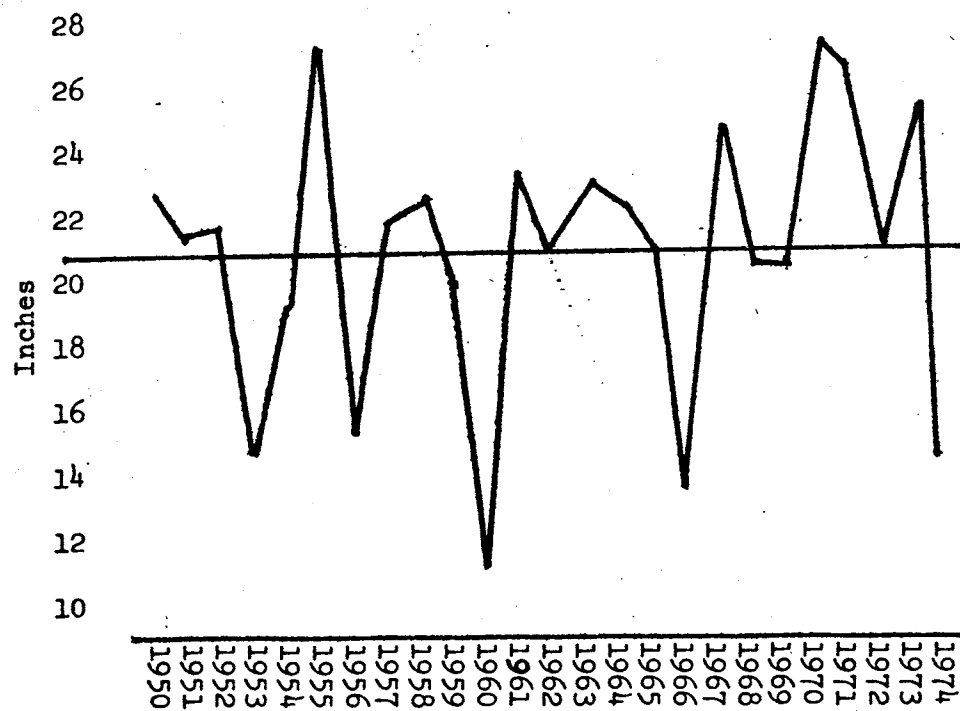
Total Monthly Precipitation  
25-Year Average



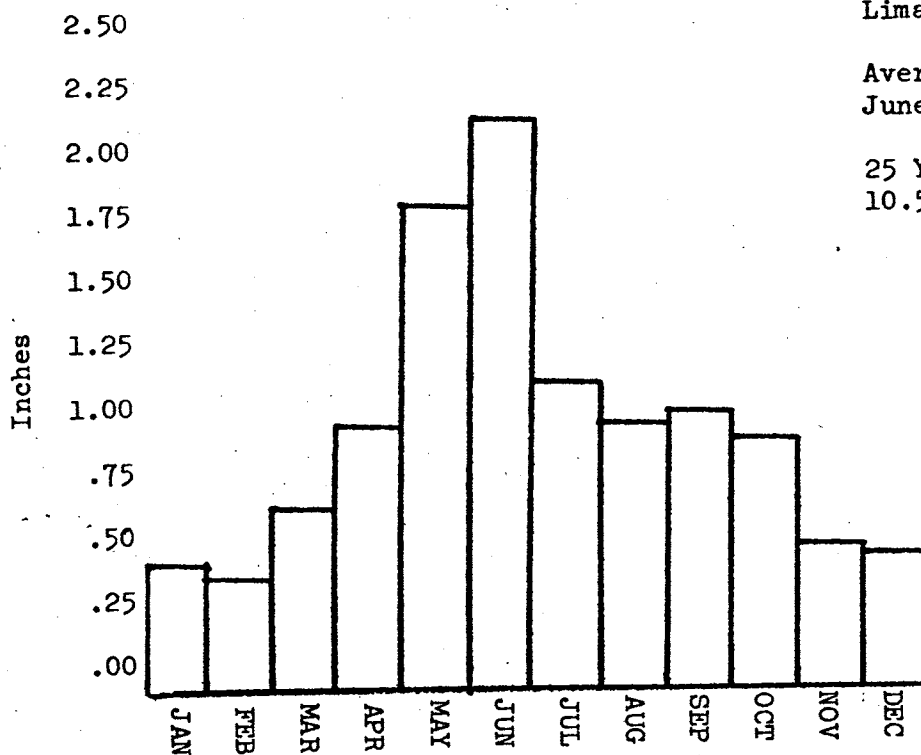
Total Precipitation  
Yearly Average



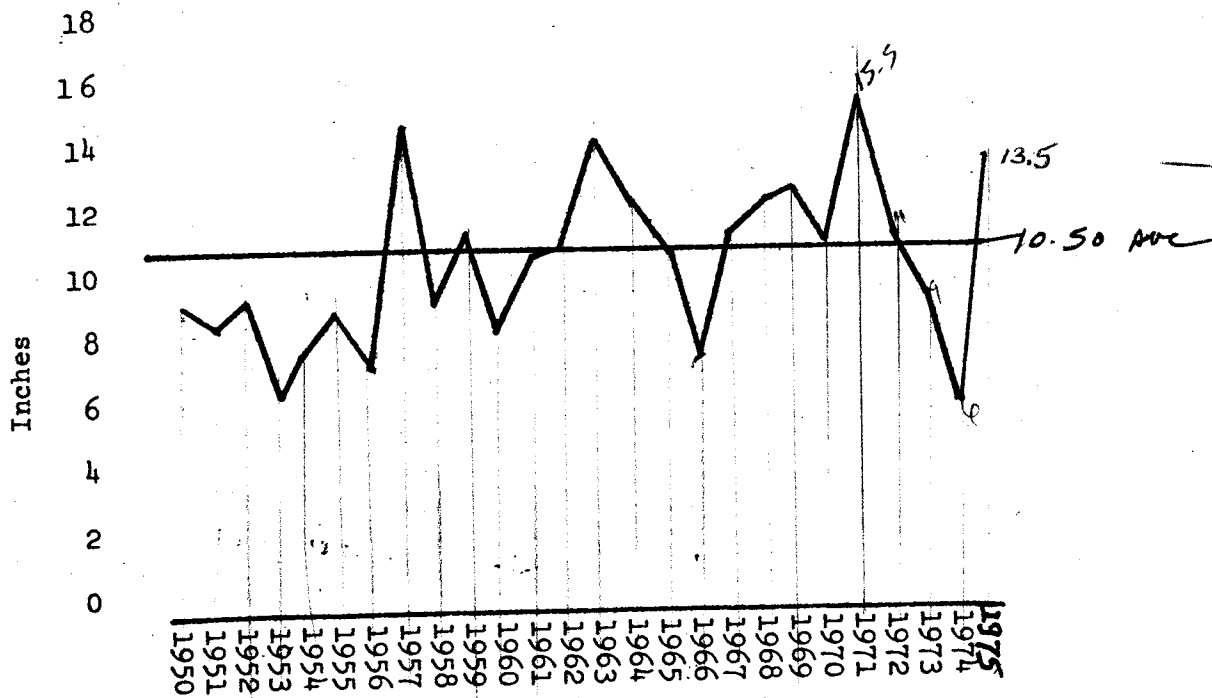
Total Monthly Precipitation  
25-Year Average



Total Precipitation  
Yearly Average

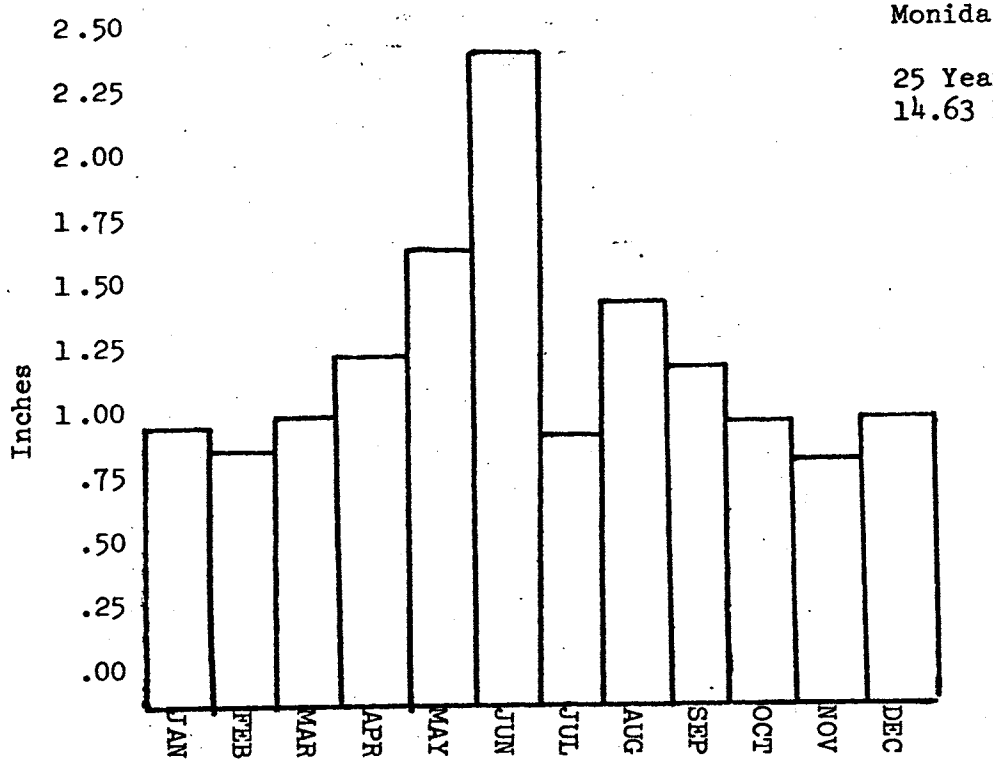


Total Monthly Precipitation  
25-Year Average

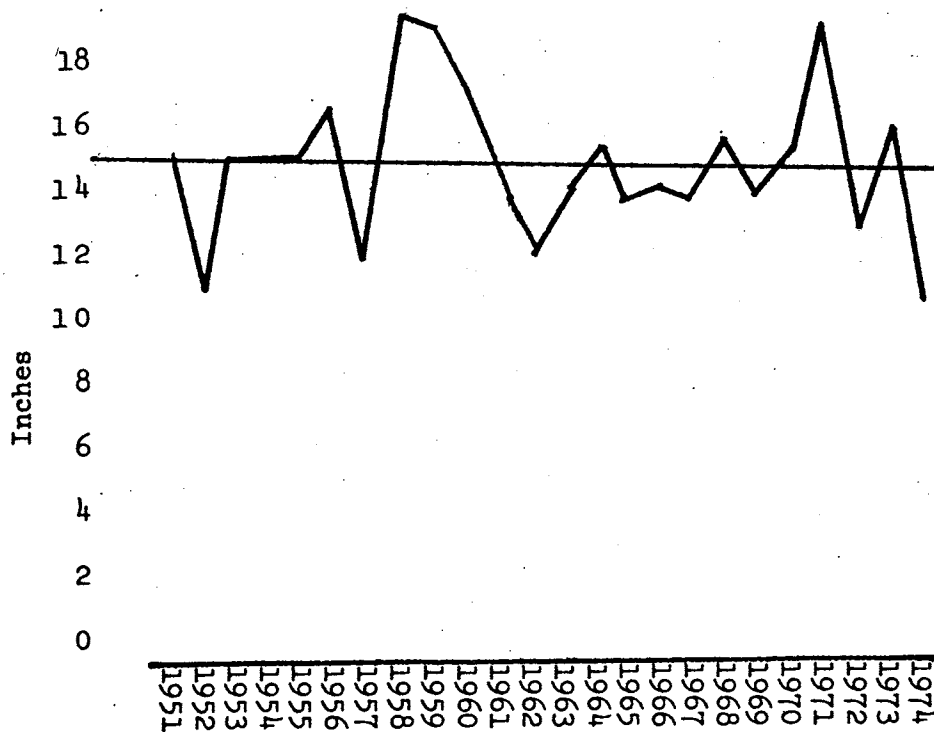


Total Precipitation  
Yearly Average

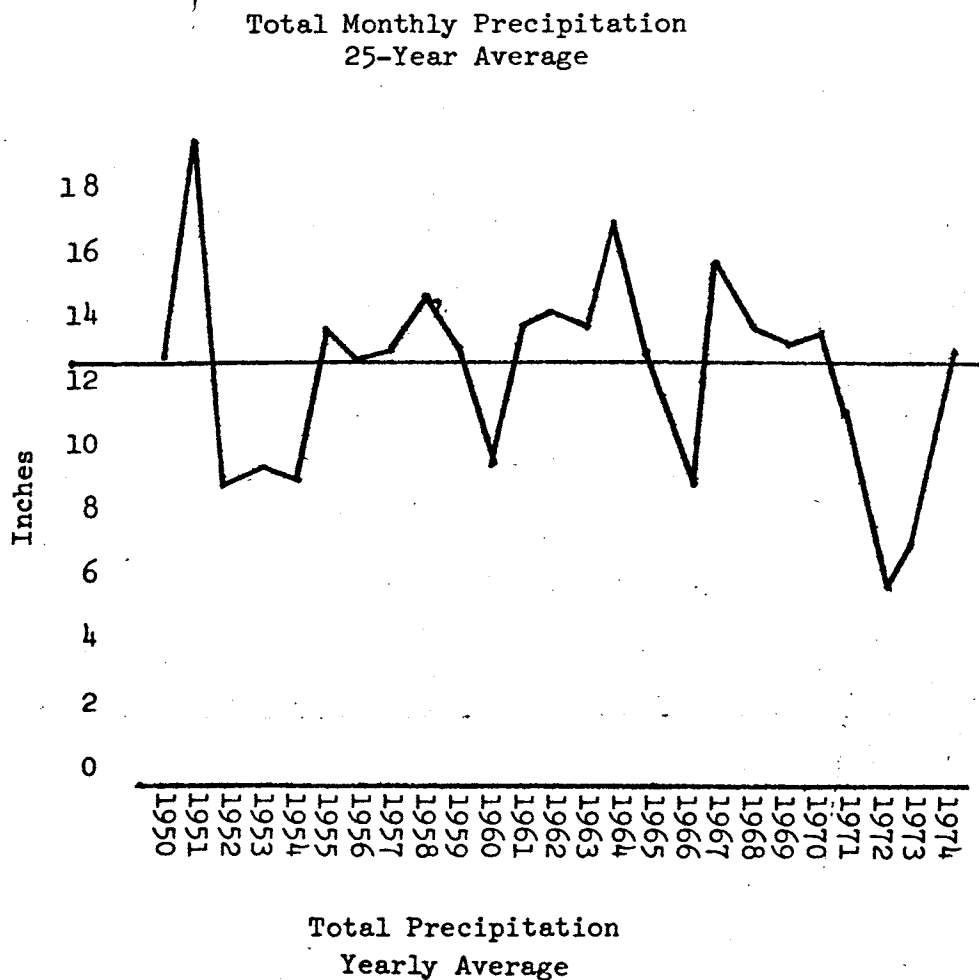
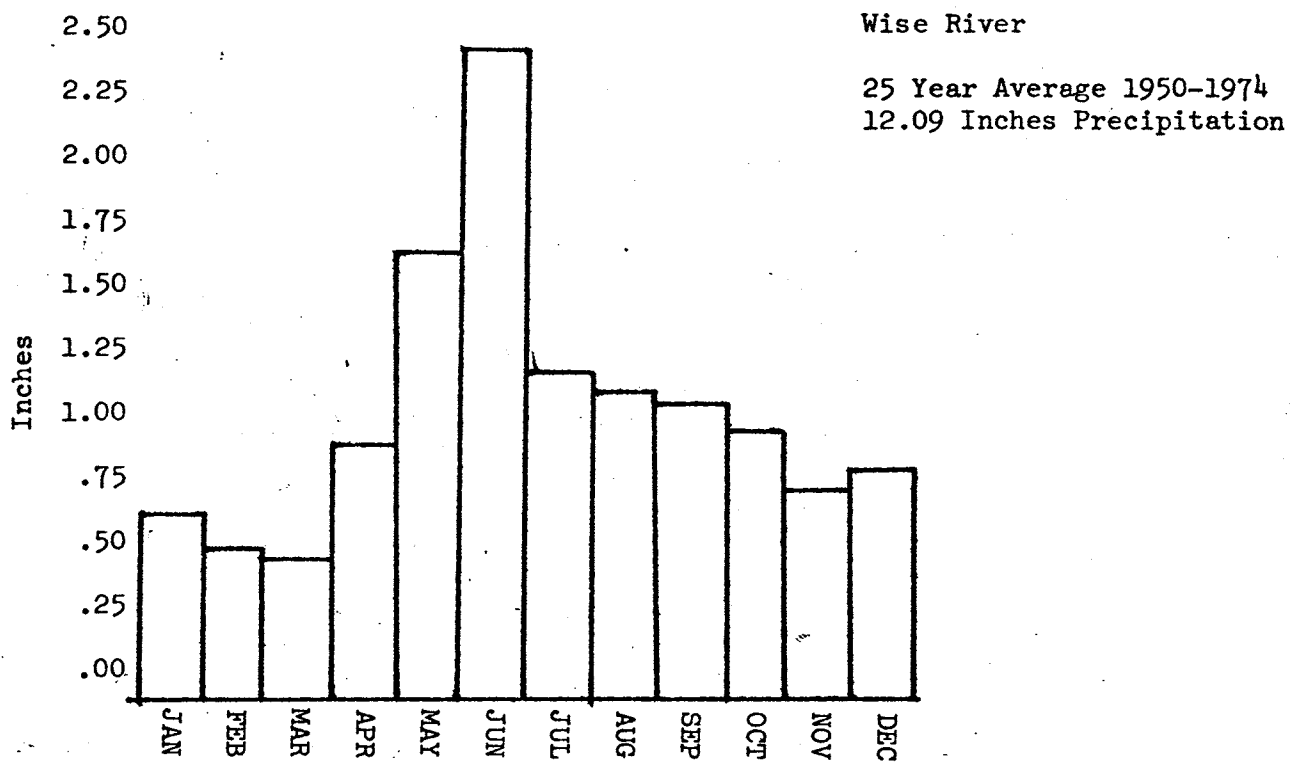
1974 6"  
1975 13.5  
1976 13+

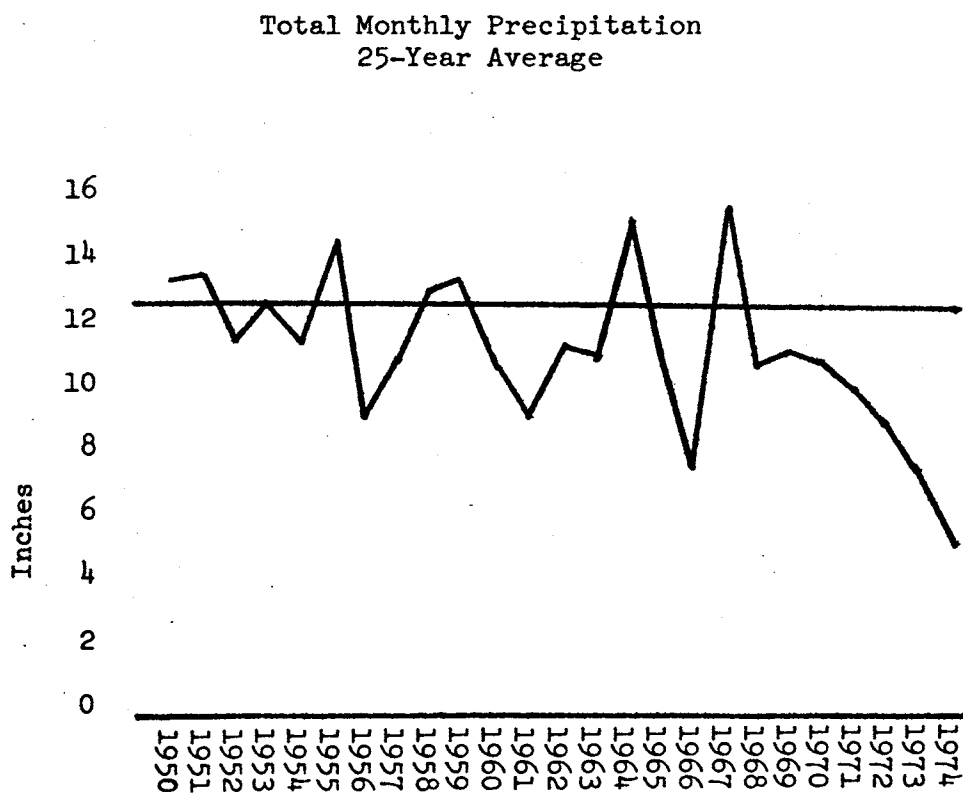
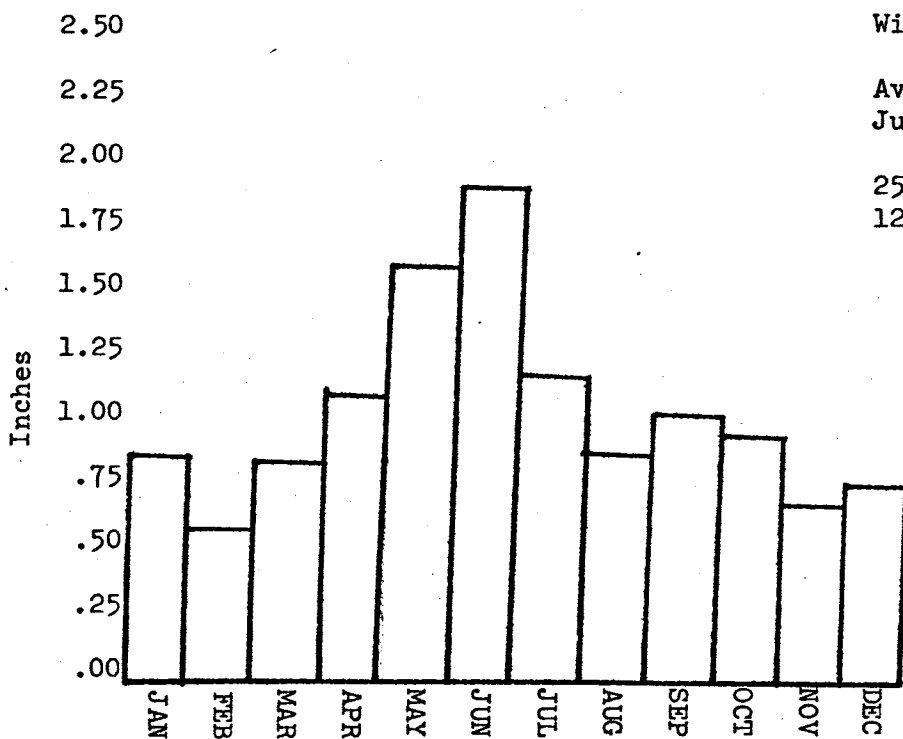


Total Monthly Precipitation  
25-Year Average



Total Precipitation  
Yearly Average



















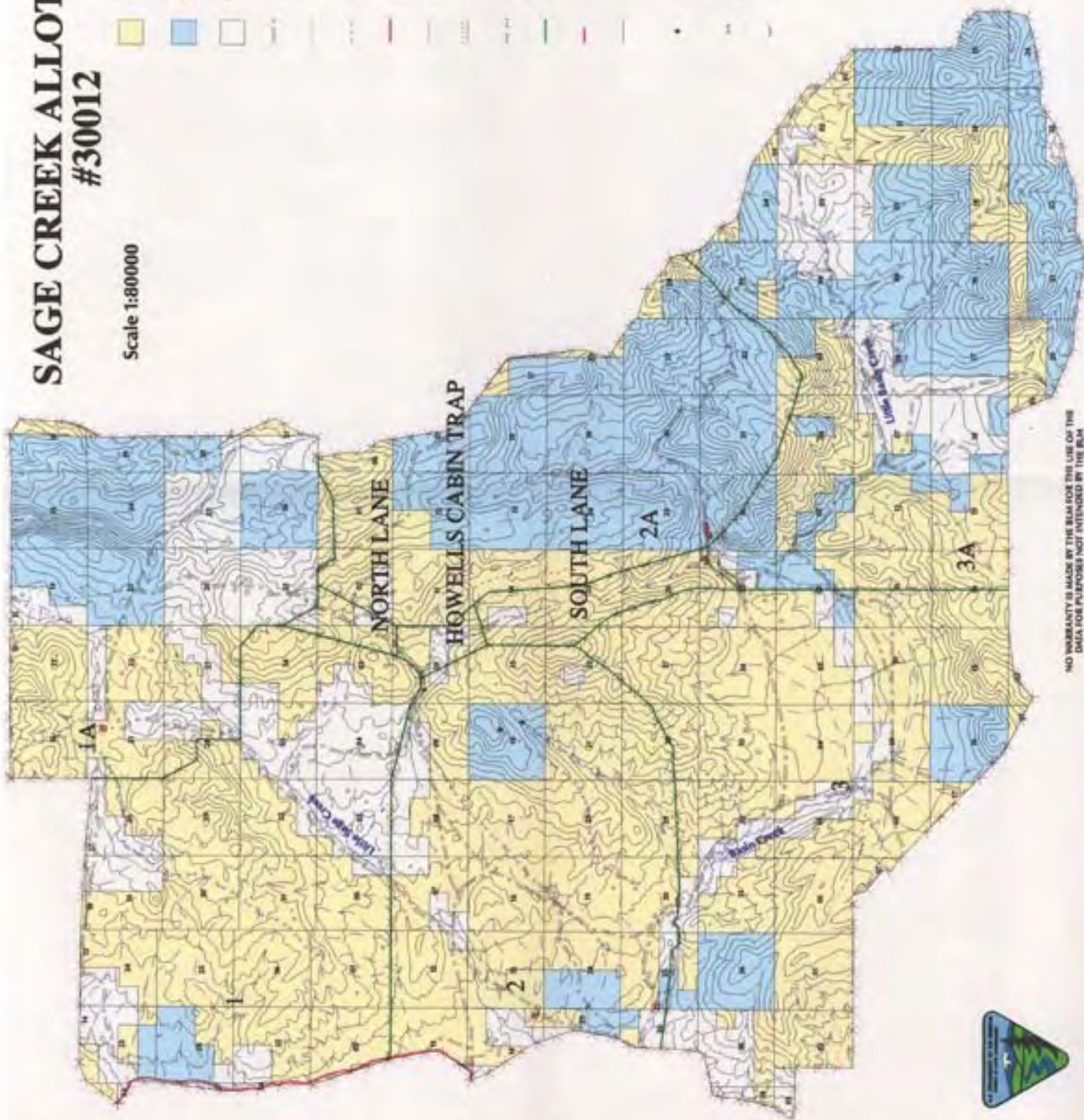


Total Precipitation  
Yearly Average

# SAGE CREEK ALLOTMENT #30012

Scale 1:80000

	Bureau of Land Management Land
	State Land
	Private Land
	Unimproved
	4 wheel drive
	Trail
	Light Duty
	Fence
	Natural Barrier
	Water Pipe
	Pasture
	Intermittent
	Perennial
	Developed Spring
	Cattleguard
	Stocktank



NO WARRANTY IS MADE BY THE BLM FOR THE USE OF THE DATA FOR PURPOSES NOT INTENDED BY THE BLM





Plan  
Sage Creek Allotment  
3/14/75

Matador Multiple-Use  
Management Plan  
Dillon District

Submitted By:

Steve B. Wilkinson  
Steve B. Wilkinson  
Area Manager

Prepared By:

Charles Plumb 3/14/75  
Charles Plumb  
Natural Resource Specialist

## MATADOR MULTIPLE-USE MANAGEMENT PLAN

### I. General Information

#### A. Location

This plan was prepared as a model to show the public multiple-use management derived through an Allotment Management Plan. The plan was written by BLM in cooperation with the Department of State Lands and Marion Cross of the Matador Cattle Company with the grazing system designed by August L. Hormay. There was input into the plan by the Soil Conservation Service, Forest Service, Western Montana College, University of Montana, Bureau of Sports Fisheries and Wildlife, Extension Service, Montana State University, Resource Councils, Beaverhead Conservation District, private parties, Montana Fish and Game Department and the Sierra Club.

The Matador Allotment is approximately 30 miles south of Dillon, Montana, in the Blacktail Planning Unit. The National Resource Lands are administered by Section 15 of the Taylor Grazing Act and the state lands by 81-102 through 81-2808 Revised Codes of Montana.

The allotment is located on Little Sage Creek and Basin Creek drainages. The acreage is as follows:

<u>Status</u>	<u>Acres</u>	<u>AUMs</u>
NRL	39,442	8,643
State	26,312	7,900
Private	<u>12,436</u>	<u>1,000</u>
	78,190	17,543

#### B. History

See Attached history.

#### C. Resource Data

The topography consists of steep rolling hills to mountains and somewhat broad valleys. The elevation varies from a maximum of 8795 feet and a minimum of 6400 feet. The soils consist mainly of deep, well drained silty clay loams in the valleys to shallow silty loams on the ridges. The average annual precipitation is 10 to 14" annually with some areas receiving 20".

Vegetative types include:

<u>Type</u>	<u>Acres</u>	<u>%</u>
4-Artr-Agsp-Feid	26,780	33.0
1-Agsp-Feid	48,120	63.0
2-CAREX	620	.8
6-Psme	1,390	1.7
5-Cele	<u>1,280</u>	<u>1.5</u>
	78,190	100.0

#### D. Livestock Management Items

The Matador Cattle Company is a cow/calf operation. Normally calves are weaned in mid-October. Those to be retained as replacements are placed on feed for the winter months, the remainder are sold.

Present Section 15 carrying capacity on National Resource Lands within the allotment is approximately 8,643 AUMs in accordance with the 1952 Missouri River Basin Survey. However, this survey has been determined to be liberal. School Trust Lands within the allotment have a carrying capacity of an estimated 7,900 AUMs. Matador lands have an estimated 1,000 AUMs. In the past the allotment has been used spring, summer, fall with 3,000 sheep and 2,100 cattle.

#### E. Coordination

##### 1. Grazing

The area has a history of grazing by sheep, cattle and horses. Range condition is good on some small areas, but for the most part it is unsatisfactory. Generally, the range trend is static. With a rest rotation grazing system, range condition will improve resulting in an upward trend and give the Matador Cattle Company greater capabilities of management and better utilization of the forage.

##### 2. Watershed

The erosion class for the allotment is mostly slight with large areas showing moderate erosion. Erosion is presently occurring because of the low density of deep rooted fibrous perennial grasses. The balance between sagebrush and perennial grasses is in favor of the sagebrush. Gully erosion is slight, sheet erosion is moderate and wind erosion is present, but at an unknown rate. Rest rotation will improve ground cover and decrease erosion.

##### 3. Wildlife

A. Mule deer--The Vinegar Hill -- Chris Cabin area is utilized by deer during early winter and is considered a crucial area. About two-thirds of the area is grass-sage habitat and one-third mahogany-Douglas fir. The mahogany portion is in unsatisfactory condition as a result of past heavy deer use and domestic sheep use. Present deer use is greatly reduced though the mahogany has made no appreciable recovery. Nearly all mahogany plants are decadent.

Significant deer summer use occurs along the eastern side of the pasture (see map). This is attributable to somewhat mesic conditions and presence of forbs. The habitat is sage-grass forb inter-spersed with willow and aspen draws and small pockets of Douglas fir.

B. Antelope -- The Sage Creek -- Little Sage Creek area (see map) comprises a crucial antelope winter range. This 18,000 acre area comprises 64% of all known crucial winter range for herd 330, the largest herd in southwestern Montana. MDF&G believes 800-1,000 antelope winter here. BLM has observed 300 antelope in a portion of Little Sage Creek alone.

The animals move through Basin Creek, enroute to winter range in Sage Creek. They remain in Basin Creek until snow covers the low sage, then move up Basin Creek into Sage Creek. During mild winters, several hundred winter in Basin Creek.

C. Elk -- A small portion of a winter range for approximately 100 elk lies within the pasture 1 (see map). This portion of the winter range is not judged to be crucial.

D. Sage Grouse -- These birds occur on the allotment, but more information is needed pertaining to seasonal distribution. A major wintering area occurs near the confluence of Sage and Little Sage Creeks. A major breeding complex occurs in Basin Creek.

E. Fisheries -- Big Sage habitat quality is fairly good above the confluence with Little Sage Creek. A highly productive fishery is present, containing rainbow trout, mountain whitefish, brook trout, cutthroat-rainbow hybrids, white and long-nosed suckers, sculpin, and long-nosed dace.

Below the confluence with the Little Sage Creek drainage, Big Sage Creek is primarily a sucker fishery. Trout are rare. This is primarily attributable to sedimentation and partial dewatering. Large quantities of sediment evidently originate from watersheds within the Matador pastures.

Basin and Little Basin Creeks are contained entirely within the Sage Creek drainage. Each is a cutthroat fishery. Cutthroat in Upper Basin appear to be non-hybrid representatives of the native subspecies. Their protection and maintenance should receive a high priority.

Little Basin Creek supports cutthroat and cutthroat-rainbow hybrid populations. Habitat quality is poor. Woody stream bank vegetation is minimal. Sedimentation has changed substrate nature, food productivity, and spawning habitat.

Both streams are degraded due to livestock trampling, willow destruction, bank erosion, and sedimentation from sheet erosion.

#### 4. Recreation

The primary recreation on the allotment is hunting. The areas are accessible at Little Sage Creek in the western portion and Basin Creek in the eastern portion. There is presently some ORV use, principally for hunting purposes.

5. Mining

There is no known mining activity presently on the allotment.

6. Forestry

Major timber species in the allotment are Douglas fir and lodgepole pine. Because of the scattered and limited supply, future cutting will probably be limited for use in the local area for corrals and fences.

## OBJECTIVES

### II. The objectives of this plan are:

1. To increase the livestock grazing capacity from the present 8,643 AUMs to 10,500 AUMs. The production of livestock, to supply red meat for our nation's consumers, will be a major factor in the Matador Multiple-Use Management Plan. Wildlife and other uses will benefit from livestock grazing. The livestock will trample seed into the soil, thereby promoting more forage and a better soil cover. Livestock will also remove stifling old growth on plants, thus increasing plant vigor and production of useable herbage. Grazing will stimulate adventitious growth, higher quality forage and reduce fire hazard. The overall capacity of the range will be increased more rapidly with managed livestock grazing than if no grazing was permitted. Therefore, it is recognized that livestock will play the major role in the Multiple-Use Management Plan.
2. To increase the density and vigor of all grasses for livestock and wildlife.
3. To increase the distribution of livestock.
4. To increase the present forb composition from a trace to an amount the allotment will produce for summer antelope and sage grouse.
5. To maintain a sagebrush-rabbitbrush canopy cover composition of 7% to 20% on crucial antelope winter habitat in the Little Sage area (see URA). \*\*
6. To reduce dead crown or Artemesia arbuscula to 15% in Big Basin for antelope winter and sage grouse spring and summer. \*\*
7. To maintain the present canopy cover of 25% in the sagebrush draws on Vinegar Hill for deer winter use, and sage grouse nesting.
8. To reduce Big Sagebrush dead crown to 15% allotment wide. \*\*
9. To maintain 10% to 20% (present) sagebrush canopy cover on sage grouse wintering, breeding, nesting and brooding areas. \*\*
10. To provide woody riparian vegetation along Little Basin and Lower Basin Creeks to maintain a water temperature of not more than 70° F. to benefit the fishery.
11. To maintain a soil surface factor (SSF) of at least 21 on range sites that have that potential.
12. To reduce sediment in Little Sage Creek and Basin Creek to a level of not more than 0.1 mi/per liter.
13. Public access that is reasonable will be provided for hunting, sight-seeing, rock hounding, and other compatible forms of recreation on National Resource Lands.

\*\* The Montana Department of State Lands reserves the right to consider the removal of sagebrush on State lands within the allotment with consideration given to critical wildlife habitats.

### III Key Species

Bluebunch Wheatgrass  
Idaho fescue  
Columbia needlegrass  
Needle-and-thread grass  
Basin wildrye  
Western wheatgrass  
Junegrass  
Kentucky bluegrass  
Tall lark spur

### IV Grazing System

The grazing system for the allotment is as follows:

	May 15	August 1	November 15
A	GRAZE		
B	REST FOR VIGOR		GRAZE
C	REST		

Treatment A is a normal grazing season for livestock production and while grazing, the animals will cause some ground litter. Treatment B is a rest for vigor until seed ripe time, then the pasture is grazed for seed spreading and trampling. Treatment C is a total season long rest for establishment of seedlings, vigor in plants, more ground litter to decrease erosion and provide more organic matter.

Treatment A will be followed by Treatment B to trample seed, then Treatment C will follow to allow for a rest.

This system will be used with approximately 2,000 head of cattle. During the initial year, the allotment will probably be grazed with about 1,500 head of cattle. However, stocking rate will eventually be determined using vegetation and watershed condition and trend forage utilization, livestock condition and climate. The rate will be closely coordinated between those a party to the plan.

	1-1a	2-2a	3-3a
1975	A	B	C
1976	B	C	A
1977	C	A	B
1978	Return to 1975 and repeat schedule.		

1977

8795

WINDY

Pasture 1a

Pasture 1

Treatment C

Treatment C

Pasture 2

Treatment A

Pasture 2a

Treatment A

Pasture 3

Treatment B

Pasture 3a

Treatment B

Rocky River

R6W

R7W

R6W

LIMA

7775V

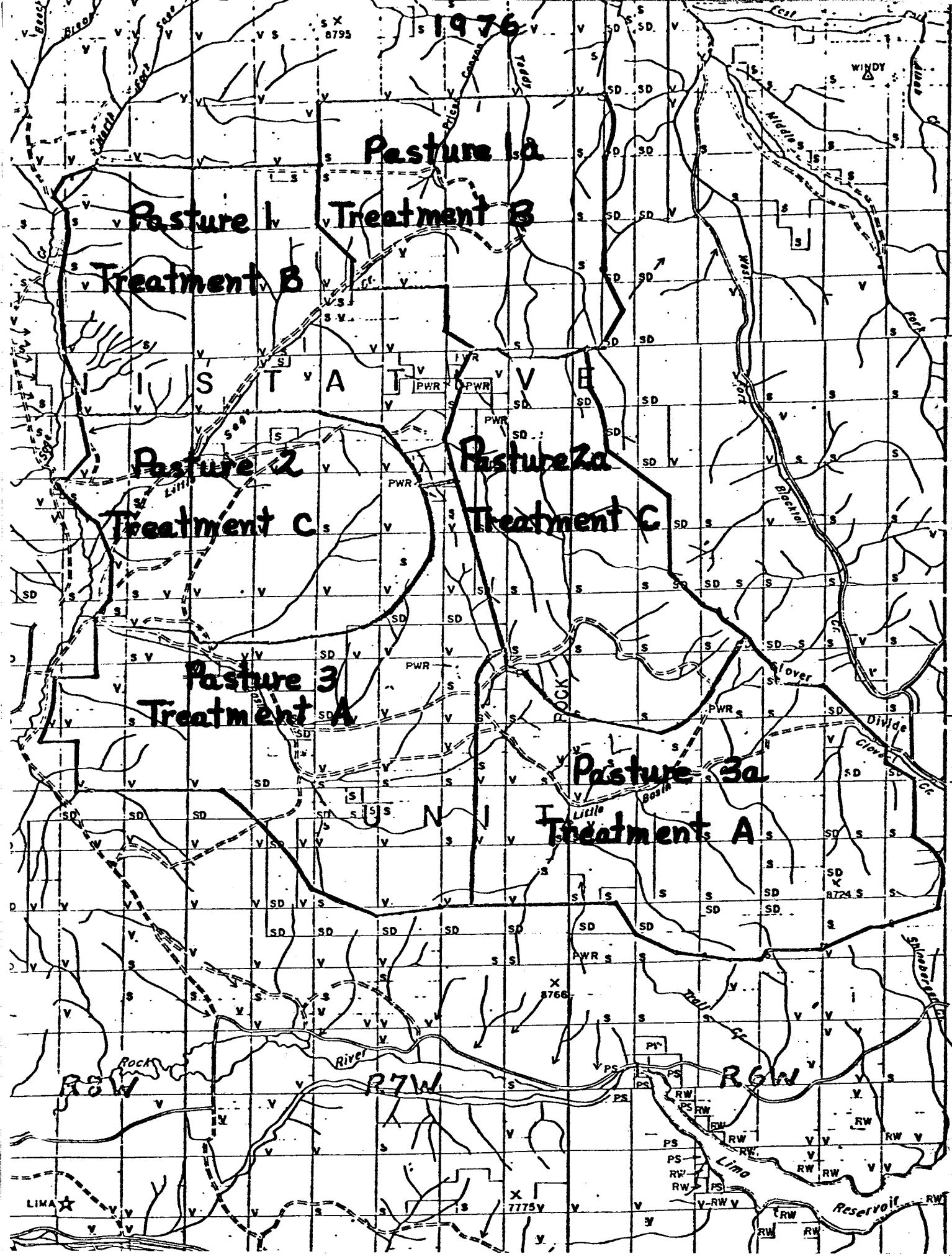
Limo

Reservoir



1976

S X 8793



Gates can be left open to the pastures which are used early after cattle have moved to the second pasture.

To meet the objectives, it is necessary to:

1. Rest to restore vegetative vigor.
2. Allow for production of ripe viable seed.
3. Allow for seedling establishment.

These can be accomplished by implementing and adhering to a rest rotation system of grazing management.

When pastures 2a and 3a are under sequence A, these pastures will be grazed about June 15, due to tall lark spur infestation. There is no lark spur problem in pasture 1a.

Pasture carrying capacity is approximated using Missouri River Basin Studies as follows:

	<u>**Total AUMs</u>	<u>State AUMs</u>	<u>National Resource Land AUMs</u>
Pasture 1 =	2,251	302	1,949 (87% of total)
Pasture 1a =	1,860	1,345	515 (28% of total)
Pasture 2 =	2,394	526	1,868 (78% of total)
Pasture 2a =	3,337	2,683	654 (20% of total)
Pasture 3 =	3,062	569	2,493 (21% of total)
Pasture 3a =	<u>3,639</u>	<u>2,475</u>	<u>1,164</u> (32% of total)
	16,543	7,900	*8,643

\*\* Total AUMs includes BLM, State, and private lands.

This allotment is outside the established grazing district boundary so the appropriate regulations are Section 15 of the Taylor Grazing Act and CFR 4120.

Fees will be payable before issuance of a lease according to CFR 4125.1-1 (m)(ii)(3) and be determined by the carrying capacity above.\*

\* 8,643 AUMs x current grazing fee = annual fee.

"Annual billing for State leases will be as specified by terms of leases between Matador Cattle Company and the State Land Department." For 1975 only, Matador will graze about 3,200 head of sheep; 2,200 of which will be in pasture 1a, for about 40 days from May 15 to June 30. Then another 1,000 head in pasture 3a from June 1 to June 10, then onto pasture 2a from June 10 to July 10. This will be the last year Matador will graze sheep on this allotment, as they are going out of the sheep business.

#### V. Evaluation

This plan will be evaluated on the basis of studies, which are determined essential to effectively monitor the system. Adjustments in this plan will be primarily based on these studies.

Actual use: Will be obtained annually by the livestock operator of the numbers of livestock in each pasture.

Utilization: Will be taken by using the BLM's key forage plant method when grazing ends on a pasture.

Trend: Photo studies will be conducted annually at least in the rest pasture.

Agreement

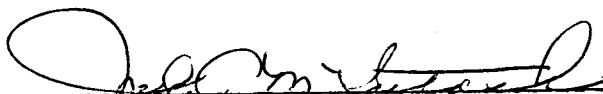
The range user will be responsible for keeping actual use records and filing them with the Bureau of Land Management Area Manager and Department of State Lands after each grazing season. This information is used for evaluating the plan and determining if a change in the stocking rate is necessary. Changes in the stocking rate may be made with the agreement of the operator, BLM, and the Department of State Lands.

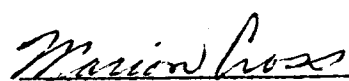
We the undersigned, concur in the management objectives set forth in this plan. We will, to the best of our abilities, carry out the provisions of this plan.


Revisions in the plan may be made with the agreement of the operator, BLM, and the Department of State Lands. Revisions will be noted on the revised pages with the date that revision becomes effective.

Approved by:

Signed:

  
District Manager Date  
Bureau of Land Management

 3/14/75  
Matador Cattle Co. Date

 4/8/75  
Commissioner Date  
Department of State Lands  
(State of Montana)

# Matador Montana Dillon RA

Form 4112-2  
(August 1968)

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
BUREAU OF LAND MANAGEMENT

District

Dillon

Date

Examiner

PHENOLOGICAL DATA, GRAZING TREATMENT, FORMULA  
AND  
YEARLY GRAZING SCHEDULE WORKSHEET

Allotment Matador						Key Species Bluebunch Wheatgrass					
SPECIES	COMPO- SITION  PER- CENT	FORAGE VALUE* (check one)				DEVELOPMENT STAGES					
		EX	GD	FR	PR	START GROWTH	FLOWERING	PEAK OF FLOWERING	SEED RIPE	SEED DIS- SEMINATE	REGROWTH**
Grasses											
Agsp ✓		X				4/10	6/5		8/5		
Elci ✓				X		5/5	7/25		8/20		
Feid			X			5/5	7/20		8/15		
Kocr			X			5/1	6/10		7/5		
Popr			X			5/1	7/5		8/15		
Stco			X			5/15	6/15		7/15		
Stcol			X			5/1	6/10		7/15		
Forbs											
Leoc					X	April	June		July		
Shrubs											
Artr ✓											
Arar ✓											
TOTAL	100										

Remarks

\* Forage value for livestock (L) and/or wildlife (W) Ex = Excellent Gd = Good Fr = Fair Pr = Poor  
\*\* How late in spring species can be grazed and still produce grazeable leaves, twigs, or seed-producing flower stalks

# GRAZING FORMULA

TREATMENT	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEP.	OCT.	NOV.	DEC.
A - Full Graze												
B - Seed Trample					REST							
C - Rest for Reprod.						R	E	S	T			

## YEARLY GRAZING SCHEDULE

MANAGEMENT UNIT	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEP.	OCT.	NOV.	DEC.
First Year 1975	Pasture 1-1a											
	Pasture 2-2a				REST							
	Pasture 3-3a					R	E	S	T			
Second Year 1976	Pasture 1-1a				REST							
	Pasture 2-2a					R	E	S	T			
	Pasture 3-3a											
Third Year 1977	Pasture 1-1a					R	E	S	T			
	Pasture 2-2a											
	Pasture 3-3a				REST							
Fourth Year 1978	Pasture 1-1a											
	Pasture 2-2a				REST							
	Pasture 3-3a					R	E	S	T			
Fifth Year 1979	Pasture 1-1a				REST							
	Pasture 2-2a					R	E	S	T			
	Pasture 3-3a											
Sixth Year 1980	Pasture 1-1a					R	E	S	T			
	Pasture 2-2a											
	Pasture 3-3a				REST							

## APPENDIX AND HISTORY

# APPENDIX 1

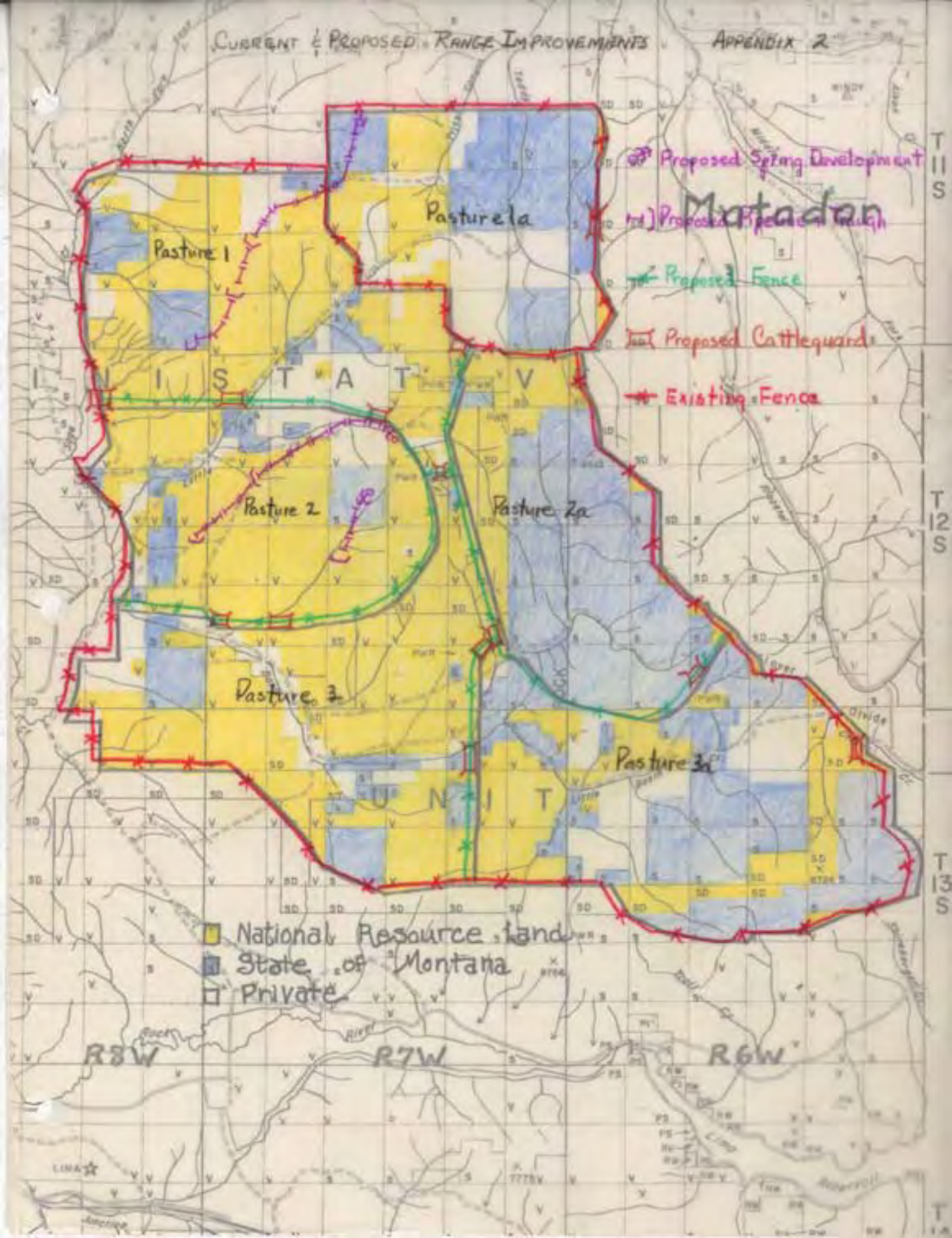
## Existing BLM Projects

Project	Condition	Maintenance	Units
D-R Fence	Fair	Permittee	3 mi.
Fence	Fair	Permittee	2 3/4 mi.
Fence	Fair	Permittee	5 3/4 mi.
Beaverhead Fence	Fair	Permittee	1 1/4 mi.
South Side Fence	Fair	Permittee	10 1/4 mi.
Teddy-Clover Fence	Fair	Permittee	7 1/4 mi.

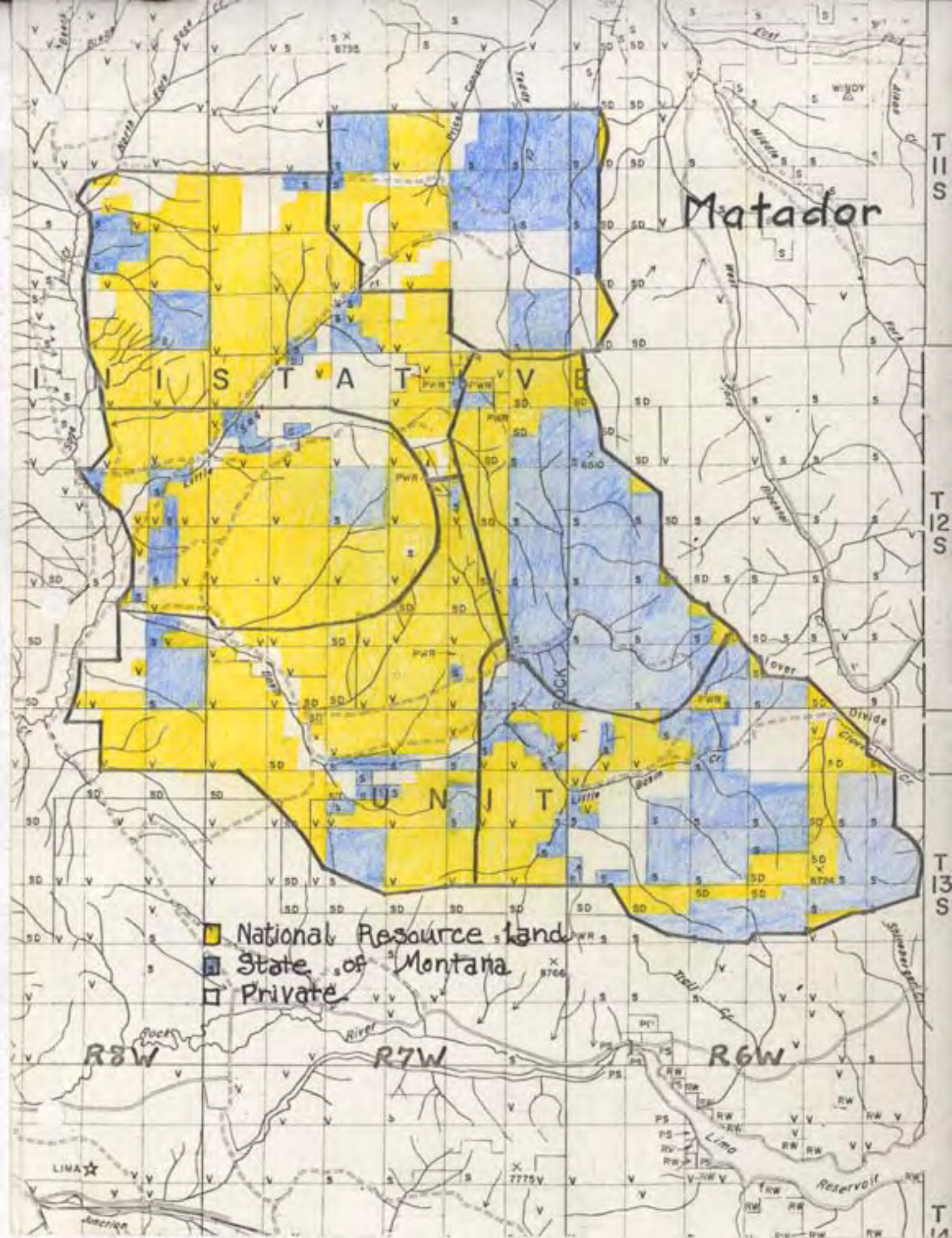
## Proposed BLM Projects

Project	Maintenance	Units
Matador Allotment Fence	Permittee	28 mi.
Cattleguards	Permittee	12 ea.
Sage Creek Spring & Pipeline	Permittee	20,300 ft.
Troughs	Permittee	2 ea.
Dry Basin Spring & Pipeline	Permittee	3,800 ft.
Troughs	Permittee	1 ea.
North Spring & Pipeline	Permittee	17,400 ft.
Troughs	Permittee	4 ea.









## H I S T O R Y

### Bureau of Land Management Planning Unit -- Sage Creek

The early history of the Bureau of Land Management Planning Unit on Sage Creek indicates a history of very little use until about 1900.

The area was used very little by wildlife. Buffalo were known to use the area some in the spring of the year.

Lewis and Clark's Journals of 1805 describe some difficulty in obtaining wildlife when they came up the Beaverhead.

The Shoshone Indians hunted buffalo and other wildlife in that area as they migrated from the Salmon River each year.

The area was apparently used very little by any type of livestock until the early 1900's.

The history of livestock use as described by Otto Christensen, an early day sheepman in the area:

A man by the name of J. E. Morse started using the area about 1908 when he bought two 3,000 head sheep bands from Steve Cook. He then expanded his sheep numbers to 20,000 head. It is known that Cook used the planning some prior to 1908.

Morse's 20,000 head of sheep would come into the area in April, lamb there, and leave in late June or July for the Centennial Valley, and they would come back to the area in September or October and use the area until winter. Morse put up 500 ton of hay on the McKnight Ranch about 300 ton on Sage Creek. J.E. Morse owned the Pinkerton Ranch and the Ajax Ranch in the Big Hole where he wintered most of his sheep.

Howard Morse acquired the place from J. E. Morse and ran it for about twenty-five years. It was during this period that the Taylor Grazing Act came into existence (1934) and began restricting use on the open range.

A stock drive way was constructed through much of the unit which was a quarter of a mile wide until it reached Clover Creek where it became one mile wide. Mr. Otto Christensen helped stake the stock drive way.

After Howard Morse, a fellow by the name of Salt used the area for a couple of years. A man by the name of Lacy bought the unit from Salt and ran it for ten to fifteen years. He went broke and the Matador then acquired the unit. Lacy ran about 10,000 head of sheep while he had the unit. All during this early history sheep were the principal users of the unit. Very few cattle used the area.

Otto Christensen says in the mid-40's there was so much grass it couldn't be grazed off. His account indicates the early use was light. There was always lots of grass and he says the water holes used to be a swamp.

The Teddy Creek Unit was homesteaded by a fellow by the name of Frank Landon about 1900. Frank Landon worked for the Poindexter and Orr (P and O) and when he died in the early 30's he willed his homestead to Poindexter and Orr.

Freeland Mace bought the Poindexter and Orr (P and O) in the late 1930's, owned the unit for ten years and sold out to the Rock Island Refining Company. Rock Island also acquired the Cook Sheep Company about that time.

During the area's early history, about 1863, a wagon road was established through the planning unit. It was a branch off the Corrine, Utah-Bannack Stage Road which became the more direct route to Virginia City.

The trail left the main Corrine-Utah-Bannack Trail below Monida, went up the Red Rock River a short distance where it crossed the River, then went up Sage Creek, then up Little Sage Creek through the unit, down Price's Canyon and then over the Sweet Water, and down to Alder and Virginia City.

1975 Plan

25050-5-052

# ENVIRONMENTAL ANALYSIS

I have reviewed the analysis on:

Matador Multiple Use Plan

Chap 1220 - 3806  
at/or 1260 - 3806

when typed report 1 in each activity

- ☒ Wildlife Biologist LM
- ☒ Geologist
- ☒ Forester
- ☒ Recreation Specialist
- ☐ Nat. Resource Specialist
- ☒ Realty Specialist
- ☒ Engineering
- ☒ Chief, RPM & O
- ☒ Environmental Coordinator

I have no comments	Comments are attached
JCB	See my comments in the typed report on FAR
	DM
	EAT
	DEW

1975

25050-5-052

## Matador Multiple Use Plan

### I. Description of the Proposed Action and Alternatives

A. Formulation of a multiple use management plan on the Matador Allotment. The purpose of this plan is to improve forage conditions for wildlife and livestock and at the same time consider other resources on National Resource Lands. A three pasture rest-rotation grazing system will be used to manage and improve forage conditions. There will be a need to construct new fencing, pipelines and install cattle guards.

#### B. Alternatives

1. No AMP. Continue with present licensing practice.
2. Apply a grazing system using the present licensing on the allotment.
3. Eliminate livestock on the allotment.

### II. Description of Existing Environment

#### A. Land Ownership

BLM	39,442 acres
State	25,672 acres
Private	<u>12,436 acres</u>
	77,530 acres

For legal description see map figure 1.

#### B. Non-living Environmental Components

The topography consists of steep rolling hills to mountains and somewhat broad valleys. The elevation varies from a maximum of 8,795 feet and a minimum of 6,400 feet. The soils consist mainly of deep, well drained silty clay loams in the valleys to shallow silty loams on the ridges.

The average annual precipitation is 10 to 14 inches with some areas receiving 20 inches.

#### C. Living Environmental Components

##### 1. Flora



<u>Vegetative Type</u>	<u>Acres</u>	<u>%</u>
4-Artr-Agsp-Feid	26,120	33.0
1-Agsp-Feid	48,120	.0
2-Carex	620	.8
6-Psme	1,390	1.7
5-Cele	<u>1,280</u>	<u>1.5</u>
	77,530	100.0

## 2. Fauna

Fauna present are: Elk, antelope, mule deer, sage grouse, various rodents, coyotes. (see Blacktail URA)

### D. Ecological Interrelationships

The allotment is used year long by small rodents seeking food and cover among the flora.

The Vinegar Hill to Chris Cabin area, T12S R7W, Sections 22, 23, 26 and 27, are considered crucial mule deer early winter area. Mule deer summer use occurs along the allotment.

The Sage Creek - Little Sage Creek area is crucial antelope winter range. About 800-1,000 antelope winter in this area.

A small portion of a winter range for about 100 elk lies within Sage Creek area. This area is not considered critical elk winter range.

A major wintering area for sage grouse occurs near the confluence of Sage and Little Sage Creeks. A major breeding complex occurs in Basin Creek. Additional wintering and breeding areas need to be identified.

There is important fish habitat in the allotment. Big Sage Creek is an excellent rainbow fishery above the Little Sage Creek confluence. Basin and Little Basin Creeks support cutthroat trout. (See URA for more detail)

### E. Aesthetics

The natural setting has been altered by man through roads and fences, though not significantly. The proposed interior fencing and pipelines will alter the natural setting further, but the alternation will not be characterized as major.

There is no spectacular scenery in the allotment.

F. Human Values

1. Botony - No rare species are known. Photography would be minimal.
2. Zoology - Elk, deer, antelope and sage grouse could be studied in their various habitat.
3. Geology - No outstanding geological features are identified.
4. Cultural Values - The early day trail from Monida to Virginia City existed along Little Sage Creek and Price Canyon. There are remains of tepee rings found along Little Basin Creek in Pasture 3A.
5. Hunting - The allotment is used for the hunting of mule deer, antelope, and sage grouse. Access is fair.
6. Sight seeing - Not a dominant factor.
7. Economic Value - The area has a monetary value through hunting and livestock production.

III. Analysis of the Proposed Action and Alternatives

A. Proposed Action

The proposed action is to formulate a three pasture rest-rotation grazing system to improve forage and vegetation conditions. This should improve forage for wildlife and livestock, lessen runoff, improve aesthetics and recreation values.

The objectives of the plan are:

1. Increase livestock AUMs by improving forage conditions.
2. Improve wildlife habitat and fisheries, thereby improving recreational values.
3. Improve public access by providing cattle guards and better rancher-BLM relations.

The grazing system will be:

	May 15	August 1	November 15
A	Rest		
B	Seed Trample		
C	R E S T		

There will be a need to construct 27 miles of a three strand fence to provide pastures. About 8 miles of pipeline will be needed to adequately distribute the livestock and provide water for wildlife.



## B. Alternatives

1. Formulate no AMP. Using the present licensing practice would mean little management and continued degradation of resources.
2. Apply a grazing system using the present licensing practice. There would be some grazing management, but little documentation of other resource needs.
3. Eliminate livestock grazing on the allotment. Range improvements such as fencing could be removed.

## C. Environmental Impact of Proposed Action

The impact on the environment will come from the grazing system and range projects.

The grazing system will, though the resting and seed trampling, improve the vigor of the present plants and allow for more vigorous new plants. This will improve forage for wildlife and livestock, stabilize soils and provide more ground cover and improve aesthetics.

The pipelines will result in temporary disturbance to the soil and vegetation. This disturbance will be at a minimum and will eventually repair itself. Wildlife movement will not be impaired by construction of the pipelines, but aesthetics will be degraded slightly in certain areas. The fences will result in little soil and vegetation disturbance because no path will be bladed. Vehicles will do a little temporary damage. The fence will be a three wire and allow movement for wildlife. Aesthetics will be degraded slightly as well as some off road vehicle use.

## D. Environmental Impact of Alternatives

Alternative #1: Formulate no AMP, but continue with the present licensing. This would mean little or no improvement in forage or vegetative conditions. The result would be little vigor increase, accelerated erosion, less forage for wildlife and livestock and a decrease in aesthetics and recreation values.

Alternative #2: Applying a grazing system using the present licensing system would give some grazing management, but there would be no documentation of specific goals for other resource activities. This could lead to degradation of other resources values.

Alternative #3: Eliminating livestock on the allotment would result in some range improvement due to the relief provided by removal of livestock. There would no be as much seed trampling and improvement in plant vigor by removing livestock from the

allotment, especially while under an AMP. Livestock grazing in this allotment has added to the local economy and provided local jobs, and under an AMP can benefit multiple resources of the allotment.

E. Recommendations for Mitigation

1. No blading of a path for the pipelines and fences.
2. Pipeline and fences will meet BLM specifications.
3. Fences will be three strand to allow for easier wildlife movement and reduce visual impact.
4. Adjusting of grazing seasons will be made if necessary to assure upward range trend.

F. Net Residual Impacts

There will be no residual impacts.

G. Relationship Between Short-term and Long-term Productivity

1. Proposed Action: In the short-term, aesthetics vegetal cover and forage will be reduced.

In the long-term vegetal cover and forage will improve, thereby, decreasing erosion, increasing forage for wildlife and livestock and increasing recreational values.

2. Alternative #1: Formulate no AMP. In the short-term, forage and vegetal conditions will show no improvement.

In the long-term forage and vegetal conditions will worsen to where carrying capacity will drop and erosion will increase.

3. Alternative #2: The long-term and short-term relationship will be about the same as #1 above, except there will be little consideration as to the needs of other resource activities.

4. Alternative #3: Excluding livestock from the allotment will in the short-term increase ground cover and forage and decrease erosion. With no livestock in the allotment, there will be no need for fences so they could be removed. This would improve the aesthetics and ease wildlife movement. The pipelines would remain to provide water for wildlife

In the long-term with no livestock grazing system on the allotment, forage will decrease in vigor and reproduction and in size and density of key plants.

H. Irreversible and Irretrievable Commitments of Resources

There will be no irreversible nor irretrievable commitments of resources with this AMP.

IV. Persons, Groups, and Government Agencies Consulted

Soil Conservation Service  
Forest Service  
State of Montana  
Western Montana College  
University of Montana  
Bureau of Sports Fisheries and Wildlife  
Extension Service  
Montana State University  
Resource Councils  
Beaverhead Conservation District  
Private parties  
Montana Fish and Game Department  
Sierra Club

V. Intensity of Public Interest

High interest by the public, the list above and the permittee.

VI. Participation Staff

District Staff

VII. Recommendation on Environmental Statement

None required.

VIII. Signatures

Prepared by:

Charles Plumb  
Charles Plumb


2/27/75  
Date

Prepared for:

Steve B. Wilkinson  
Steve Wilkinson  
Area Manager

2-27-75  
Date

Concurred by:

  
James H. O'Connor  
Environmental Coordinator

2-27-75  
Date

Concurred by:

  
Jack A. McIntosh  
District Manager

3/28/75  
Date

# Matador Cattle Allotment - see overlay Dillon Dist BLM

The following erosion information is taken from the Watershed Conservation and Development Phase I study done in 1970. Erosion is occurring over most of the allotment in combinations of the following types: Sheet, gully, mass-wasting (slumping).

## Grasslands

- I. The lower elevation needle-and-thread grasslands are in moderate erosion class with 90% or more of the areas having experienced in excess of one inch of topsoil loss from sheet and gully erosion.
- II. The middle elevation grasslands are in a moderate erosion class. Sheet and gully erosion is presently occurring over most of the area in varying degrees. Vegetation cover is composed largely of Idaho fescue and bluebunch wheatgrass with their associated species. Plant density is still good on the sites that have not lost much topsoil. Losses of one inch or more of topsoil has occurred on an estimated 25 percent of the area. The worst erosion is in the vicinity of Little Sage Creek.
- III. The highest elevation grasslands are also in moderate erosion class. Topography varies considerably in this area from steep to gently rolling. Sheet erosion is occurring over a lot of the area, but topsoil loss of one inch or more has occurred over only about 20 percent of the area. Gully erosion is common in many of the draws and headouts are increasing in number. Vegetation density is pretty good over much of the area but vigor is starting to suffer in some areas, especially the Teddy Creek pasture on the north. Erosion is probably worse in the vicinity of Teddy Creek.

## Sagebrush--North end of allotment

This area has experienced significant erosion and much of the area is bordering on being in the "critical" erosion class. Approximately 70 percent of the area has lost one inch or more of topsoil.

## Sagebrush--South part of the allotment

These areas are in the moderate erosion class with much of the area nearly in the critical erosion class. Soils in these areas are generally quite fertile and fairly deep with capability to produce an abundance of vegetation growth annually. The areas nearest Basin Creek are the most heavily eroded and the areas along the south boundary are the least eroded. Approximately 30 percent of the area has lost one inch or more of topsoil.

## Meadow types

These types are generally areas of soil accumulation over the past years. Heavy grazing use has reduced streambank protection and allowed some of the wetter areas to become dry sites with sagebrush invading them. The meadows are reduced to wet areas along stream channels and around spring areas.

*Slumping has occurred and is occurring in the higher elevation parts of the allotment in the grassland and sagebrush types. Slumps generally occur at the head of a draw or along a steep side-slope of a draw where underground water accumulates near the surface on an impervious subsoil.*

## History Matador RR

1974 April 11 Memo to state directors  
Demonstration areas program

April 29 State Director

3 Candidates

Pryor Spur - Mystic Billings

Etchart Ranch Malta

Matador Dillon

June 19 Examined Matador

and suggested for demonstration  
area

July 30 1st tour

July 31 First plot July 2 Matador selected by State  
photos. Director

Sept 25 2nd tour Sept 27-27 First planning meeting

All interests BLM FS State SCS  
University, Environmentalists, Ext. Ser

Program for allotment agreed  
upon.

Oct 31 Plan being developed

Hope finalize by spring 1975

Montana

July 6

Grazing Schedule

Sage Creek (Matador)

Pasture

Grazing Treatment

1  
1A }

B Rest-Grazing  
after seed-ripe

2  
2A }

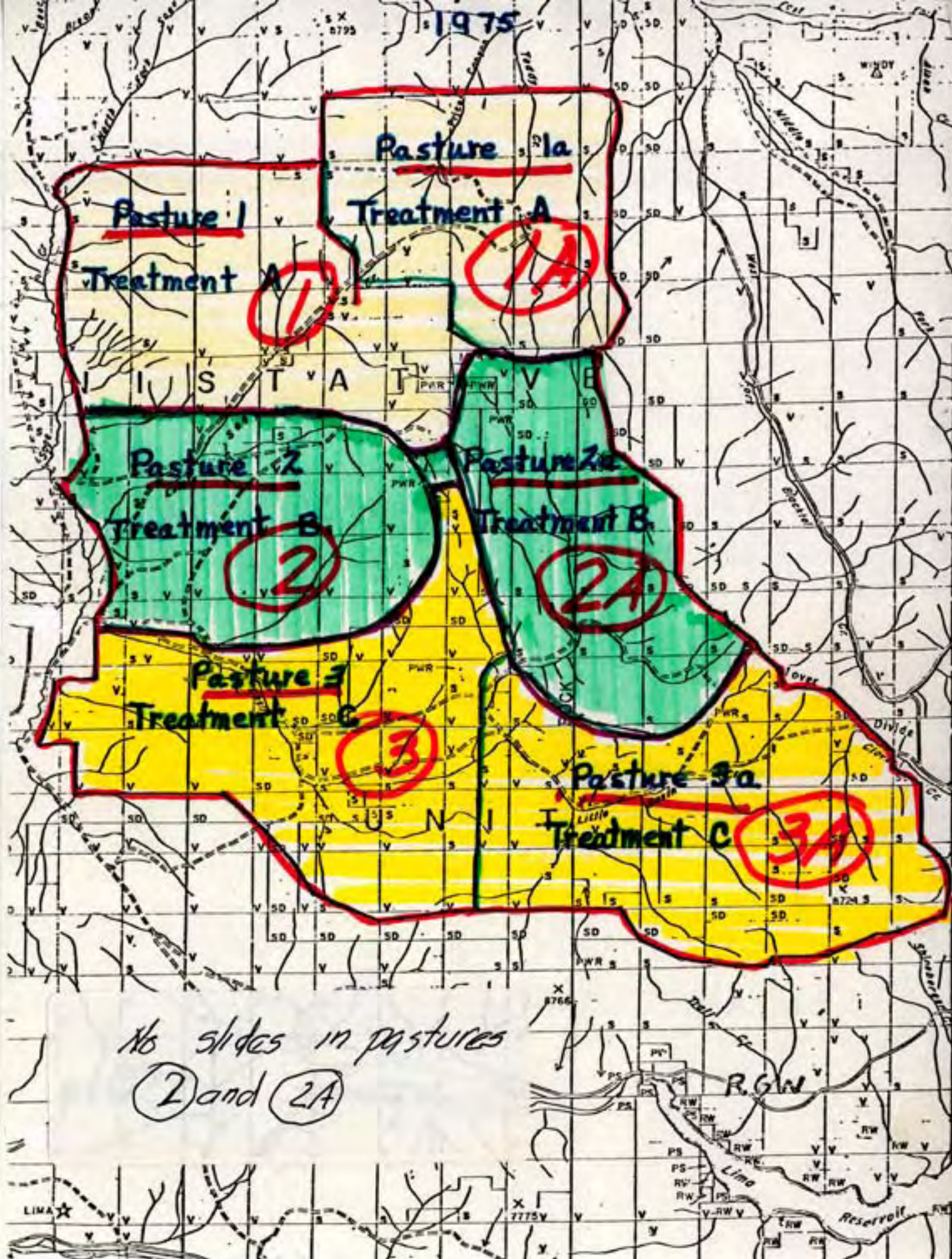
C Rest  
season long

3  
3A }

A Grazing - Rest  
after seed  
ripe



1975





# Plot Statistics

Sept 20 / 76

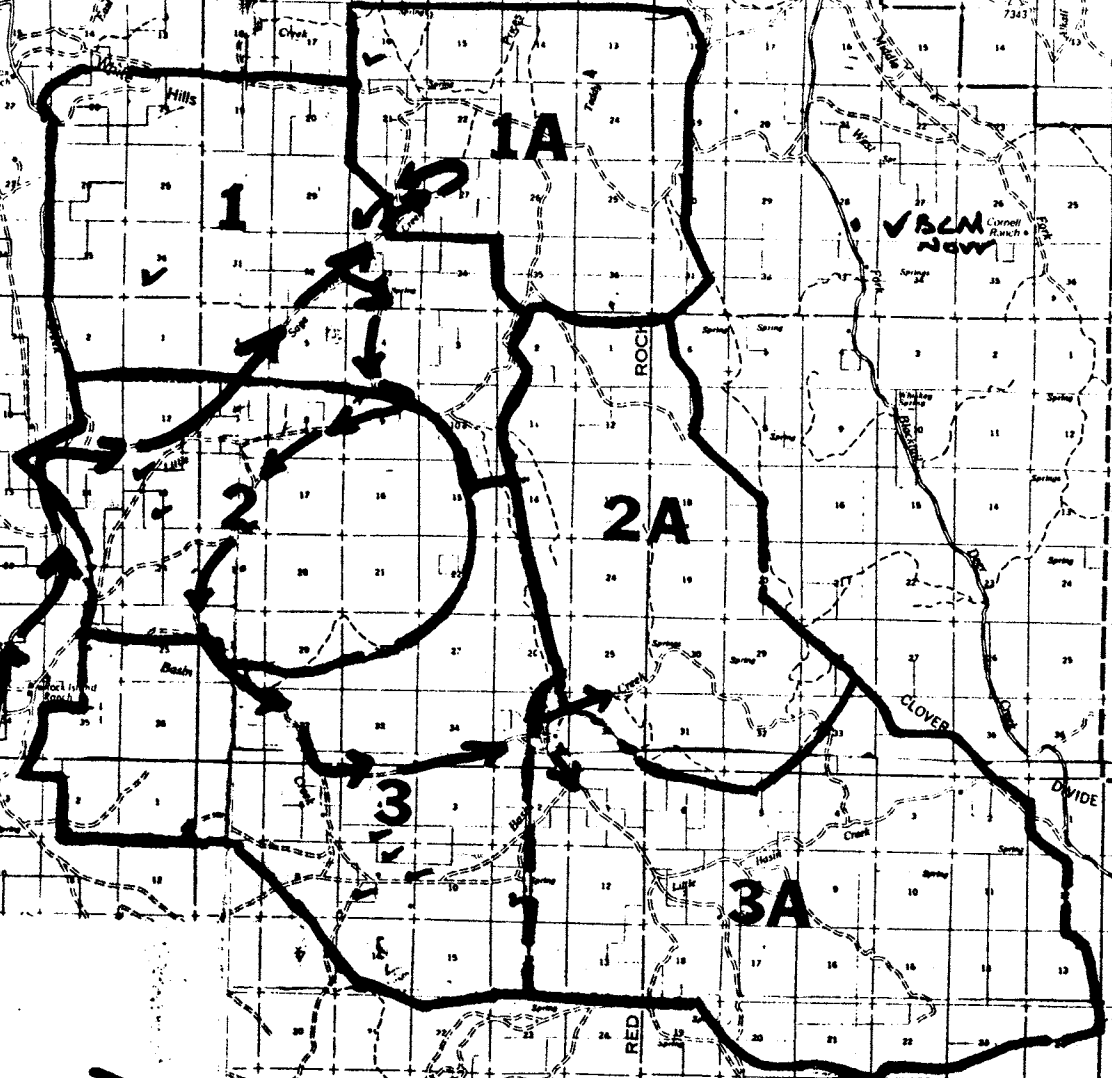
No	Posts		Stakes		Photo		Subject - Purpose			Photo	
	Quail	Type	T-1	T-2	LT	UT	Gen	Comp Density	Species	Use	time
Pegs	22		8	8	8	8	2				
Photo	5		5	5	5	5	5		Brush		
Posts	5		5	5	5	5	5				
1	✓		✓				✓	✓	CHRY ART		10 AM
2							✓		Iris		
2							✓			stream bank	
3									ART Pot Iris		
4		10		✓	6				Hillside		
5									"		
6									"		
7									Willow	Toddy Crk	
8							✓			Gully in Meadows	

**SAGE CR. MATADOR  
ALLOT.**

T 10 S  
T 11 S  
T 12 S  
T 13 S

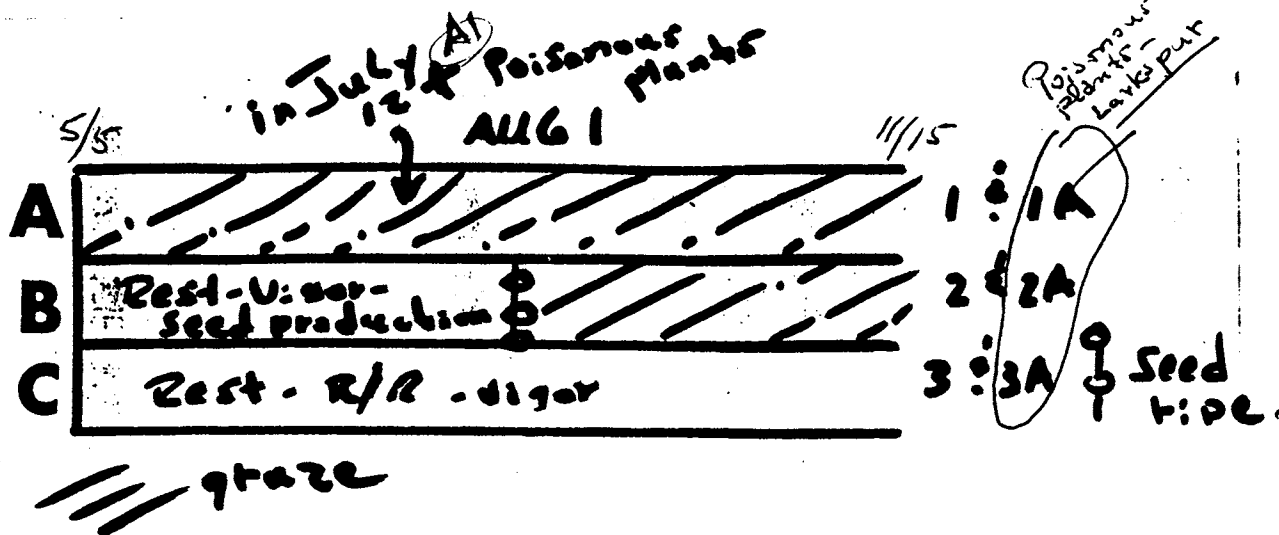
Del

your Route →  
X stop.

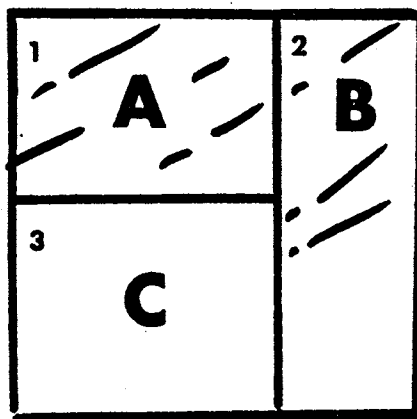


**R7W**

**R6W**



1990



Treat

Pasture

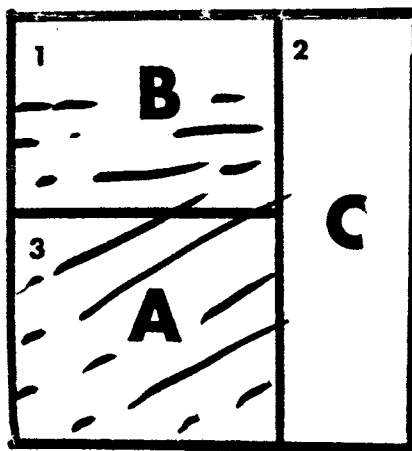
1 2 3

YR. 1990 A B C

YR. 1991 B C A

YR. 1992 C A B

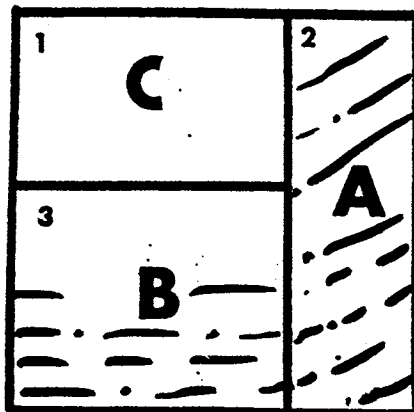
1991



FORMULA SINCE  
1976.

2000 PRS.

1992



Notes:

JDL

# Matador Plots

Pasture

Plot

1 (1A)

1

Trails

2

3

4

5

6

9-2

10

12 II

13

2

42

43

46

47

48

II

Beaver

2A

No plots

# Matador Plots (cont'd)

Pasture

Plot

3

11

18 II

Burn

40

3A

6

~~7~~

~~8~~

9

10

~~45~~

II

41

44

Sheep Flat Plot 1

Plot 45

Browse

Plot 8

# Plata dor

Past

Plots

1

~~██████████~~  
~~██████████, ██████████~~

1A

~~██████████~~  
~~(2, 3, 6, 9-2, 10, 12 II)~~  
~~██████████, ██████████~~

2

~~██████████~~  
~~(42, 43, 46, 47, 48 II Barrow)~~

2A

None

3

sheep flat

~~██████████~~, 18, II  
40 Europa

Burn?  
~~44 white sage~~

3A

~~██████████, ██████████, ██████████, ██████████, ██████████~~  
45, II, 41, 44

2

Sept 4/97

Clatador

Locations Streams

Stream Pasture Flow

Teddy Creek	1a
Price Creek	1a
Little Sage Creek	1a, 1, 2
Basin Creek	2a, 2, 3
Upper Basin Creek	2a
Little Basin Creek	3a

# Matador Grazing Schedule

Year	Pasture Treatment		
	1	2	3
1976	B	C	A
77	C	A	B
78	A	B	C
79	B	C	A
1980	C	A	B
81	A	B	C
82	B	C	A
83	C	A	B
84	A	B	C
85	B	C	A
86	C	A	B
87	A	B	C
88	B	C	A
89	C	A	B
1990	A	B	C
91	B	C	A
92	C	A	B
93	A	B	C
94	B	C	A

Treatment

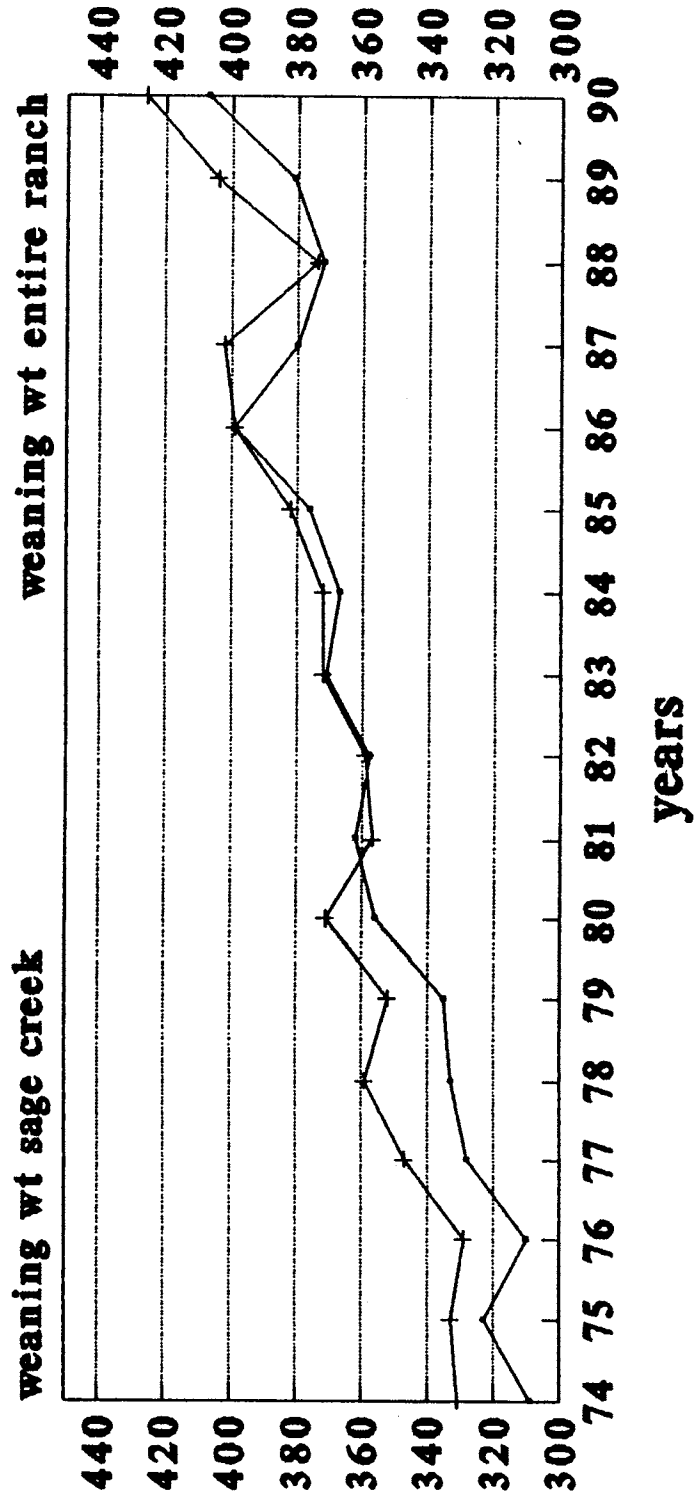
- A Graze to seed-ripe from beginning of season; rest to end of season
- B Rest from beginning of season to seed-ripe; graze from seed-ripe to end of season
- C Rest season long.

1995	C	A	B
1996	A	B	C
1997	B	C	A



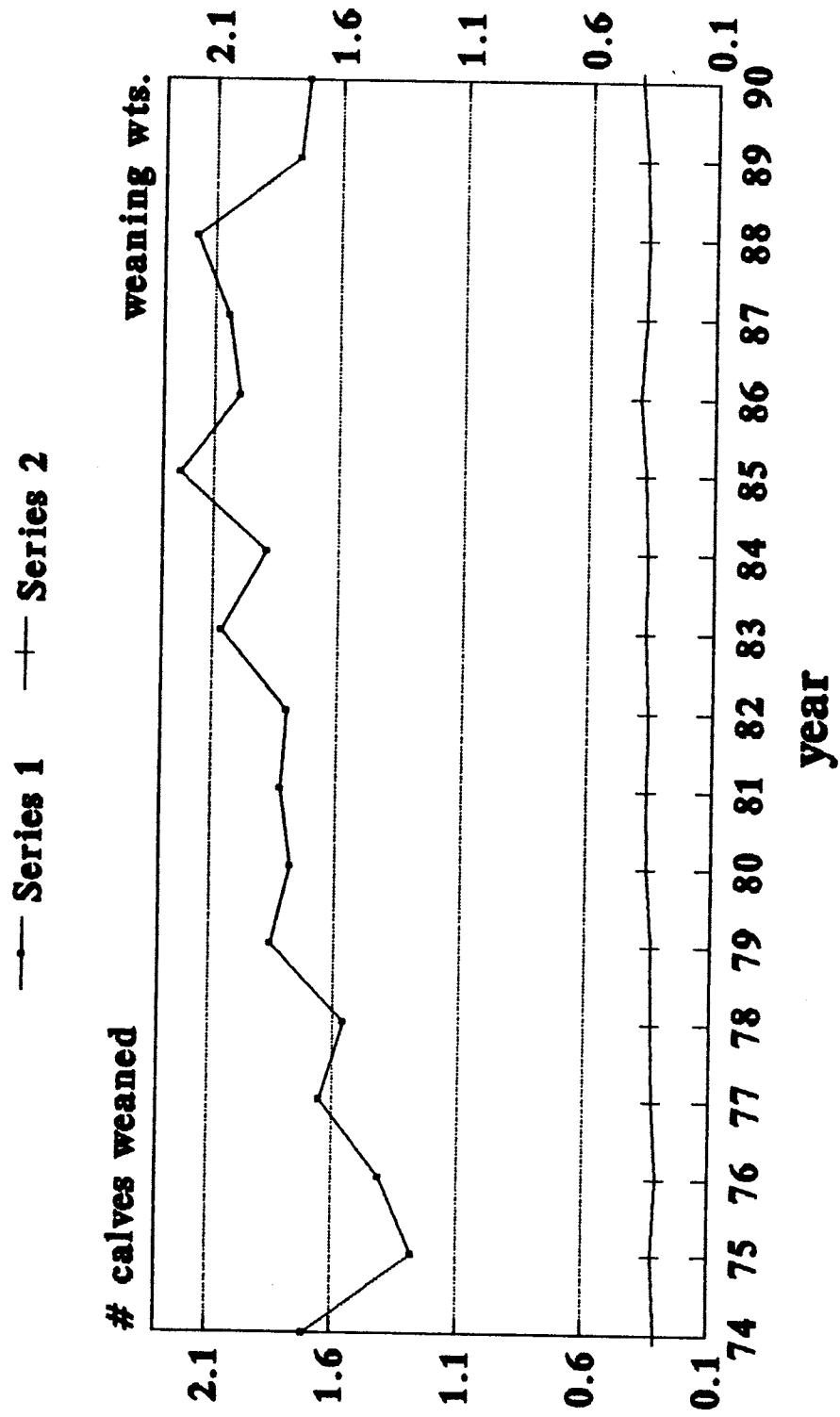
# matador cattle co. sage creek rest rotation herd performance

— Series 1 —+— Series 2



# matador cattle co.

## sage creek rest rotation



Matador Cattle Company  
Sage Creek Rest Rotation  
Herd Performance

	tot. calves	Tot. wt.	avg. wt.	%hrd	entire herd wean wts.
1974	1707	528620	309	29%jersey	331
1975	1276	412040	323	36%jersey	333
1976	1409	436690	310	44%jersey	329
1977	1650	540760	328	28%jersey	347
1978	1558	519655	333	35%jersey	359
1979	1853	620650	335	33%jersey	352
1980	1777	632620	356	all herford	371
1981	1820	659790	362	all herford	357
1982	1798	644895	358	all herford	359
1983	2062	765335	371	all herford	372
1984	1886	693320	367	4%brangus	372
1985	2233	840130	376	all herford	382
1986	1997	796660	399	all herford	399
1987	2042	775350	380	23%jersey	402
1988	2172	808320	372	24%jersey	374
1989	1764	672160	381	26%jersey	404
1990	1732	704680	407	27%jersey (32%bb)	426
avg. calves	1808	650098	356.8		368.8



# United States Department of the Interior

BUREAU OF LAND MANAGEMENT  
DILLON RESOURCE AREA  
1005 SELWAY DRIVE  
DILLON, MONTANA 59725



IN REPLY TO:

1120/1737/4120

April 21, 1992

Tony Schoonen  
Box 2  
Ramsay, MT 59748

Dear Tony:

You requested information on study data in the Sage Creek Allotment at last summer's grazing tour. In response to your request, I intended to send you a copy of a comprehensive allotment evaluation report for all studies in the Sage Creek Allotment that we have been working on this winter.

This report is not complete, and will not be for some time, due to the assignment of one of our range conservationists to a tour of duty in the Butte District Office. Existing riparian and wildlife studies have been reviewed, but numerous upland range vegetation studies have not been evaluated. You made it clear to us today that you are only interested in the riparian study information.

Enclosed is a copy of a memo containing the riparian and wildlife studies review. Please call if you have questions on the information contained in the memo.

Sincerely,

Jim Lewis  
Area Manager

Enclosure: Riparian Study  
Eval. Memo: 2-10-92

4120.1

February 10, 1992

## Memorandum

To: Matador Sage Creek AMP No. 30012

From: Jim Roscoe, Wildlife Biologist

Subject: Summary of Riparian and Wildlife Studies

Riparian Habitat

## 1. Inventories

Riparian inventories were initiated on Basin and Little Basin Creek in 1978. These creeks were chosen due to the woody character of the riparian habitat and the presence of cutthroat fisheries. Significant amounts of riparian habitat are present on the allotment and they will be inventoried in 1992.

Inventory on Basin and Little Basin was duplicated using Myers (1987) methodology in 1983, 1987 (Basin only) and 1991. Willow data is summarized in Table 1. Most significantly, willow canopy on both streams has declined drastically. Beavers have had a part in this decline, but have not been active on either stream in the inventoried reaches since about 1986. Age class composition on both streams is good, partly due to sprouting from old plants that have been lost due to hedging or inundation. However, heavy hedging continues to be a limiting factor and is more of a concern now with a larger percentage of young plants available in the community.

Table 1. Summary of woody riparian surveys for  
Basin Creek, Little Basin Creek, 1978-1991

<u>Little Basin Creek</u>	<u>1978</u>	<u>1983</u>	<u>1991</u>
normal	17		23 (2.5%)*
heavily hedged	56		54
decadent/dead	28	66	23
age class 1-10 mm	4	17	31
11-15 mm	7	9	38
> 15 mm	89	74	31
canopy	11	3.8	0.8
active bank erosion	16		18

Table 1 (continued)

<u>Basin Creek</u>	<u>1978</u>	<u>1983</u>	<u>1987</u>	<u>1991</u>
normal	30	19	16	49 (3.5%)*
heavily hedged	54	42	66	35
decadent/dead	16	40	18	16
age class 1-10	12	24	20	37
11-15	8	9	14	13
> 15	80	67	66	50
canopy	52	25	10	6
active bank erosion	10	20	7	9

\* Figures in parentheses represent plants that are actually available to be used by livestock or wildlife; remainder are mature plants greater than 1.5 meters in height.

The percentage of dead and decadent plants (>30% dead crown) increased in 1983 due to beaver activity, but was reduced back to "normal" levels in 1987 and 1991.

Active bank erosion has remained at a low level, although I feel this has been underestimated. In addition, one of the shortcomings of this technique is that bank trampling/alteration is not included. Sediment loads in both streams continue to be a problem, with most of the sediment contribution coming from damaged banks.

## 2. Coverboards

Coverboard data indicate a static trend on Little Basin Creek with photos taken in 1981, 1985, and 1989. Some photo points indicate improvement while others show declines. Generally, existing plants have maintained themselves or grown, but establishment of new plants has been minimal. Photo points on 5 transects on Basin Creek show similar results for willows. Aspen sprouting, which was stimulated by beavers from 1976 to 1980, was totally eliminated by 1985. Photos duplicated prior to livestock turnout in 1981 and after a 77 day grazing period clearly demonstrated that nearly all of the excessive hedging damage on aspen was caused by livestock, not elk.

An additional 7 transects (17 photo points) were established on tributaries to L. Sage Creek in 1987 and 1988, but have not been duplicated. These studies support data from the Basin/Little Basin coverboards on which current management, at best, is maintaining the existing woody community. Continued heavy hedging is limiting recruitment of young plants and bank trampling is continuing to input heavy sediment loads into Little Sage Creek and Sage Creek.

It is interesting that the area around Hal's Cabin in the "driveway pasture" shows a difference in woody community composition and vigor compared with all other pastures. *Salix planifolia* is common inside the driveway pasture, but has not been noted on any other reaches on the allotment. This area is only grazed for less than two weeks, annually, during trailing onto and off the allotment in

contrast to the season-long and 60-75 day treatments applied to all other pastures.

### 3. Exclosures - Basin Creek

Data for a total exclosure, livestock exclosure, and control on Basin Creek reveal some dramatic changes in riparian vegetation, as displayed in Table 2. Protection from livestock grazing from 1982 to 1987 allowed an almost twofold increase in willow young age plants (1-10 mm basal stem diameter) and a corresponding decrease in dead crown. These changes occurred at a time when willow hedging by elk was measured at 47%, primarily on older, more available plants (winter 1982-1983).

Table 2. Summary of riparian exclosure data  
Basin Creek 1981 to 1988

#### Livestock Exclosure

1. No increase in density of willow plants.
2. Young age plants increase 28% to 47%
3. Canopy not conclusive (no spp. vs. spp.)
4. Dead crown decrease 45.3% to 21.1%

#### Control Transect

1. Density of willows -  $0.32/m^2$  to  $0.18/m^2$
2. Dead crown same
3. Age class static - tend to older plants
4. Canopy inconclusive

#### Game Exclosure

1. Density of willows -  $0.40/m^2$  to  $0.84/m^2$
2. Dead crown same
3. Age class decrease
 

92 - 47	1-10 mm
0 - 22	11-15 mm
8 - 37	> 15 mm
4. Canopy same
5. Aspen presence

Over the same time period, the grazed control transect showed a slight trend to older willow plants, no change in dead crown (static at about 60%) and a decrease in willow plant density from 0.32 plants/sq. meter to 0.18 plants/sq. meter.

Inside the game/livestock exclosure, willow densities have doubled ( $0.40/sq.$  meter to  $0.84/sq.$  meter). Willow age class distribution has assumed a normal character after the proliferation of sprouting following exclosures construction in 1980. After 11 years of exclusion of all use, the remnants of an aspen clone are showing renewed vigor, and recruitment of young plants is occurring.

Daubenmire transect studies in the livestock enclosure and on the control were placed at the outside of the riparian zone due to the physical nature of both sites. As a result, both characterize an ecotonal vegetative community, and have not reflected any changes in composition. As channel stability improves, and bank building is initiated in the livestock enclosure, the water table will rise, extending the riparian zone laterally. This has already occurred in the total enclosure, more as a result of site characteristics than from a lack of big game use.

#### 4. Channel Cross-sections

Seventeen channel cross-sections were established on Basin Creek in 1981, 8 of which are associated with enclosures and control transects. Those 8 studies were duplicated in 1988. Generally, cross-sections outside the enclosures show an ongoing widening of the channel with shallower water depths. In contrast, sites inside both enclosures have stabilized, or show definite narrowing and deepening of the channel as a result of sediment entrapment and bank building. Width/depth ratios have not been calculated since bank full (flood stage) measurements are not available. The Basin Creek channel in riparian reach BT-13 (where all the cross sections are located) is a B-3 channel (Rosgen, 1986).

#### Fishery Habitat

No comprehensive fishery work has been initiated on the Sage Creek allotment. Cutthroat trout were collected from Little Basin and Basin creeks in November 1981. Genetic analysis using meristic characters was completed and indicates that these fish are likely to be a relatively pure population of westslope cutthroat trout. Notes made at the time of collection refer to excellent trout cover from the standpoint of undercut banks and food availability in Little Basin creek, but that sedimentation was degrading habitat quality. This stream was sustaining a limited sport fishery at this time with fish averaging 10-12" in length. In contrast, few fish were noted in Basin Creek and cover was limiting, fish being found only where willows were present on the streambank. Severe sedimentation was noted throughout the stream reach. Past and present beaver activity was noted.

No collections have been made on either stream since 1981 but observations made during other field work on these streams indicate that the Little Basin population has been severely reduced. Only one fish was observed during riparian surveys in July 1991.

The occurrence or distribution of fish in other streams is unknown.

#### Water Quality

A significant amount of water quality, macro-invertebrate and stream channel data was collected by contract in 1978 which has never been fully analyzed, and no followup monitoring has been initiated. This analysis and monitoring has not occurred primarily from lack of priority and suitable expertise in the Dillon Resource Area and Butte District.

However a significant trend in fecal coliform counts is obvious by even casual reference to the data. Data was collected monthly from August 16, 1976 to



September 11, 1978, except during winter months. Fecal coliform counts (colonies/100 mls) varied from <2 to about 100 throughout the period at both stations on Little Basin and Basin Creek when livestock were not present. However on September 11, 1978 counts of 1590 colonies were recorded at the Upper Basin station with livestock present, 307 colonies at the Lower Basin station where it was unknown if livestock were present, and 43 colonies at the Little Basin station where livestock were not present.

This information indicates that management on these stream reaches was violating Clean Water Act standards (requiring <200 colonies/100 mls), and it is unlikely that current conditions have altered substantially since 1978.

#### Elk Habitat- winter

Seven transects were established in 1981 in the Chris Cabin (Basin Creek) area to evaluate livestock and elk utilization. At that time, wintering population was approximately 100-200 elk. Key species for monitoring are bluebunch wheatgrass (*Agropyron spicatum*) and Idaho fescue (*Festuca idahoensis*); other species measured are prairie junegrass (*Koleria cristata*), plains reedgrass (*Calamagrostis montanensis*) and spikefescue (*Hesperochloa kingii*).

In 1981, total average utilization on AGSP was 19.3% and 24.2% on FEID. Utilization was not taken after the livestock treatment so elk use could not be determined. In 1982, the pasture was rested from livestock use. Utilization on AGSP averaged 34%, 38% on FEID, and "heavy" use on CAMO and HEKI (85% plants grazed, no utilization conversions used). This winter was termed as moderate with lots of snow in April, with about 300-400 elk on this winter range. Utilization was taken again in 1987-1988 after livestock use occurred during the fall grazing treatment. On Oct. 29, 1987, only two transects showed any livestock utilization, with only 3-7% utilization on AGSP and FEID. Utilization taken in mid-May showed an average elk use of 10% on AGSP, 4.0% on FEID, 2.5 % on KOGR, moderate on CAMO (40% plants grazed), and heavy on HEKI (66% plants grazed). This winter was quite mild with little snow, soil moisture was reduced, and generally lighter elk use than normal. However at this time elk numbers had increased to almost 900.

In general, winter elk habitat is being provided on this allotment and forage availability is not a problem. However population increases to over 1200 animals in 1990 must be considered to be nearing carrying capacity of the habitat.

#### Conclusions

Implementation of the rest rotation grazing system on the Sage Creek allotment has had some definite benefits to upland resources in the area, compared to the previous conditions. However as our knowledge of all resources has improved, and considerations other than producing livestock forage have arisen on public lands, it is evident that this type of livestock management is not adequate to provide for all resource values.

Upland vegetation has improved in productivity and vigor, and generally is adequate to provide terrestrial wildlife needs. However, it appears that little monitoring has been accomplished which relates directly to specific AMP objectives in quantifiable terms.

A variety of riparian habitats are present on the allotment and have responded differently to the existing management. On heavily armored channels (high percentages of coarse gravel, cobble, small rubble), the existing habitat is stable and in instances, is developing a desirable herbaceous community. However, woody vegetation on the allotment is declining, most seriously on the two known fisheries, Basin and Little Basin Creeks where significant losses of canopy have occurred since 1978. Exclosure data indicates that site potential is far above the current suppressed level. Heavy levels of hedging are continuing during both grazing treatments. The loss of second-year and occasionally third-year growth cannot be replaced in a single growing season. It is this level of use that is suppressing the recruitment of young age plants of all palatable woody species, and has directly resulted in the loss of the aspen stand in mid reach on Basin Creek.

Channel degradation continues from loss of desirable soil-binding vegetation and bank damage from livestock trampling. The resulting sedimentation has severely reduced the productivity of the resident westslope cutthroat trout populations in Basin and Little Basin Creek. The loss of streamside woody canopy on Little Basin Creek for shading has resulted in summer water temperatures up to 70° F which are marginal for supporting cutthroat trout reproduction. This, combined with an extremely high sediment load partially due to bank trampling, has undoubtedly contributed to the apparent loss of this quality cutthroat trout fishery.

The influence of beavers has had a significant role on this allotment and cannot be overlooked. The classic beaver/cow scenario has been played on the Sage Creek allotment. Beavers have altered the existing woody communities through inundation and hedging, which would normally stimulate sprouting and young plant recruitment. However, livestock hedging, combined with lowered water tables from the loss of beaver dams, has prevented the survival of young woody plants necessary for the regenerating the original community.

Our management has not been responsive enough to recognize the need to protect riparian vegetation and ensure channel stability once the beaver population was lost. Beavers changed the character and age composition of riparian communities on the allotment, but livestock grazing has caused the loss of vegetation necessary to sustain those communities in a healthy, functioning condition.

#### RECOMMENDATIONS

- A. Riparian and fisheries objectives in the original AMP are not quantifiable and measurable. These objectives should be redefined and expanded to address parameters which effect the proper functioning of the riparian and aquatic habitat:
  1. Limit livestock-caused bank alteration to 10% on fishery streams and 25% on all non-fishery streams.
  2. Limit livestock and wildlife browsing on willows to 50% of available leaders (current year's growth).
  3. Provide a minimum of 5 inches herbaceous stubble height on streambanks at the onset of spring runoff for sediment entrapment and bank building.
  4. Identify the riparian desired plant communities, and define in terms of

species compositions and desired canopies. In most cases, these DPC's should represent mid-seral ecological habitat types.

- B. Implement upland monitoring studies tied directly to AMP objectives, such as maintaining or increasing canopy of Artemesia arbuscula. Simple unmonumented photo comparison sites are not adequate to reflect composition changes. All objectives should be reevaluated to determine if they are quantifiable and measurable.

JRoscoe:jr:jb:1/30/92

JOSEPH L. EGAN  
VEGETATION MANAGEMENT CONSULTANT

727 NORTH EWING  
HELENA, MONTANA 59601  
406-442-3294

July 16, 1993

Mr. Jim Owings, District Manager  
Butte District-Bureau of Land Management  
106 N. Parkmont  
Butte, Montana 59701

Dear Mr. Owings,

On June 24, 1993, I once again had the pleasure of visiting the Sage Creek (Matador) Allotment in Beaverhead County during a field trip arranged by Mr. Jack Jones of your office in Butte.

I have visited this allotment several times before in company with various individuals including Gus Hormay, BLM people, Jack Jones, Marion Cross, State Fish and Game folks, ranchers and others. Each visit points out graphically how well rest-rotation works and how all values, including wildlife, are benefited.

My first visit to this area was about 1965 as District Three Game Manager of the then Montana Fish and Game Department. I can assure you, the area did not look as nice then as it does now, but of course, Gus Hormay's "before and after" photos attest to that fact.

I have been (and perhaps still am) a very strong (and vocal) critic of many of past and present grazing operations on the public domain ("BLM land"). However, I want to assure you that the Sage Creek (Matador) livestock grazing operation is one of the finest examples of how livestock under rest-rotation rehabilitates a deteriorated range. Over a period of nearly 30 years, I have observed this range improve dramatically almost as if by magic, and that includes the riparian areas that fish and wildlife biologists agonize over so much!

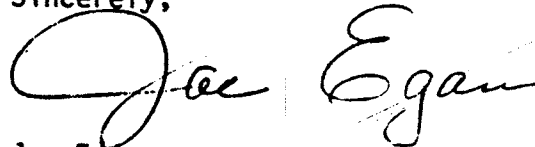
The BLM and Matador Cattle Company can be proud of this area and it certainly meets the criteria and has produced the desired results to qualify and remain "...a demonstration area for improved rangeland management." and "...a land management training program..."

As a former wildlife biologist and administrator for 35 years, I am familiar with criticism, however it is very disturbing to hear that some (BLM?) folks in their criticism want to "fine-tune" this particular rest-rotation system.

Mr. Jim Owings  
page 2

I have observed some rest-rotation grazing systems that were "fine-tuned", "fine-tuned" right into oblivion! It will be a tragedy if such "fine-tuning" is allowed to happen to the Sage Creek(Matador) Allotment rest-rotation livestock grazing system. It's not broke, so please, please do not try to fix it!!!

Sincerely,

A handwritten signature in cursive script that reads "Joe Egan". The signature is written in dark ink and is positioned to the right of the word "Sincerely,".

Joe Egan

Encl.

cc: Mr. Ray Marxer  
Mr. Bob Kilmer  
Mr. Gus Hormay  
Mr. Jack Atchison  
Mr. Steve Antoniala  
Mr. L. F. Thomas  
Mr. Dave Majors  
Mr. Tom France  
Mr. Steve Knapp  
Mr. Jack Jones  
Mr. Bud Clinch  
Mr. Jim Baca  
Mr. Bud Lawton  
Mr. Ed Schurick

Mr. Jim Owings  
page 3  
distribution

Steve Antoniala  
President, Skyline Sportsmen  
Butte

Jack Atchinson  
Sportsman  
Butte

Jim Baca  
Director, BLM  
Washington, DC

Bud Clinch  
Mt. State Dept. Lands  
Helena

Tom France  
Nat'l Wildl. Fed  
Missoula

Gus Hormay  
Range Mgmt Consultant  
San Francisco

Jack Jones  
Wildlife, BLM  
Butte

Bob Kilmer  
Matador Cattle Co  
Wichita

Steve Knapp  
Mt. FWP  
Helena

Bob Lawton  
State Dir. BLM  
Billings

Dave Majors  
Pres. MWF  
Stevensville

Ray Marxer  
Matador Cattle Co.  
Dillon

Ed Schurick  
Area Mgr. BLM  
Dillon

L. F. Thomas  
Pres. Anaconda Sprtsmn  
Anaconda

**Montana Department  
of  
Fish, Wildlife & Parks**



1420 East Sixth Ave.  
POB 200701  
Helena, Montana 59620-0701  
June 28, 1993

Jim Owings, District Manager  
Bureau of Land Management  
Butte, Mt. 59701

Mr. Owings:

I compliment the BLM on their successful, ongoing partnership with the Matador Ranch.

Last week's tour of the rest-rotation grazing system, which has been in effect about 18 years, was very informative. I was particularly impressed with the exclosures which included riparian vegetation. If all public land riparian was in this condition our jobs would be much easier.

FWP strongly supports the rest-rotation grazing system and will lend our support to ensure that it continues. The department has such grazing systems on its own lands, and we are pleased with the results.

More such partnerships are needed. Management of land which benefits soil, water, vegetation, wildlife and livestock is possible. The Matador Ranch is proving that.

Senators Max Baucus and Conrad Burns have used the Wall Creek Wildlife Management Area partnership as an example of how land should be managed. FWP, U.S. Forest Service and private landowners work together for mutual benefit managing land utilizing a rest-rotation livestock grazing system. I believe they would approve of what is being done on the Matador Allotment.

I hope that we can put together Gus Hormay's vegetation monitoring slides into a video program as we discussed on the tour. FWP will lend assistance.

Sincerely,

Stephen Knapp, Chief  
Habitat Bureau

cc. Ed Sherick, Area Manager, BLM, Dillon, 59725  
Ray Marxer, General Manager, Matador Ranch, Dillon, 59725  
J. Peterson, B. Brannon

CORY Hammond - FYI

**Montana Department  
of  
Fish, Wildlife & Parks**



1420 East Sixth Ave.  
POB 200701  
Helena, MT. 59620  
July 13, 1993

Tom France  
240 North Higgins  
National Wildlife Federation  
Missoula, Mt. 59812

Tom:

It has come to my attention that you are interested in the grazing system that is in operation on the Matador Ranch.

I toured the ranch last month looking at the grazing system, especially in relation to riparian areas. There are two livestock exclosures that are in riparian vegetation. I was impressed with the condition of the riparian zone.

As you know, we have rest-rotation grazing on several of our wildlife management areas. Mt Haggin has such a system which has a substantial riparian zone within the grazing system. We monitor this system and feel it has improved the vegetation of the area, consequently benefitting the home life of a variety of animal species.

Attached is a letter I sent to Jim Owings after the Matador tour. I encouraged the BLM to enter into more such systems. It will benefit the land.

FWP has been actively pursuing rest-rotation grazing systems with federal, state and private landowners as a way to significantly impact wildlife habitat in a positive manner. Positive for the soil, water and vegetation, positive for wildlife and positive for people who use the land for economic reasons.

If you would like to learn more about our efforts, or discuss the Matador more fully, please contact me.

Tom, I hope you are still hunting ducks. We need more people to participate in the ecological act of predation.

Sincerely,

Steve Knapp, Chief  
Habitat Bureau



**Montana Department  
of  
Fish, Wildlife & Parks**



1420 East Sixth Ave.  
POB 200701  
Helena, MT. 59620  
July 13, 1993

Mr. Robert Lawton  
Bureau Land Management  
POB 36800  
Billings, MT. 59107

Mr. Lawton:

I recently toured the Matador Ranch in southwest Montana to look at the rest-rotation grazing system that has been in effect for about 18 years.

I was impressed with the condition of the vegetation and the longevity of the partnership between BLM and the Matador. I hope this partnership will continue.

The Montana Department of Fish, Wildlife and Parks also employs rest-rotation grazing on several of its wildlife management areas and has been pleased with the results.

I write this letter and attached two other letters as a show of support of your efforts with the Matador Ranch.

If FWP can be of further assistance please do not hesitate to call me. I work with your colleague Bob Haburchak on several committees, he is a fine fellow.

Sincerely,

Steve Knapp, Chief  
Habitat Bureau



DUCKS  
UNLIMITED  
INC.

STEVE R. BAYLESS  
SENIOR REGIONAL DIRECTOR  
MONTANA

5225 Collins Drive  
Helena, Montana 59601  
(406) 458-5794

July 19, 1993

Mr. Ray Marxer, Manager  
Matador Cattle Company  
Blacktail Road  
Dillon, MT 59725

Dear Ray:

I wanted to sincerely thank you for conducting the tour on June 24th. which I was fortunate enough to attend. The condition of the range on the Matador Ranch, including the riparian habitat, is excellent to say the very least.

I realize the Matador Ranch was set up as a National Demonstration Area by the Bureau of Land Management back in 1974 when Gus Hormay first designed the Rest Rotation Grazing System initiated on the ranch at that time. The decision to make the Matador a demonstration area was obviously a good one, and the fact that you have followed the original grazing system as set up by Hormay is highly commendable. I attended several of the earliest tours of rest systems in Montana back in the 1960's, namely in Phillips County. Unfortunately, those systems no longer exist. Believe me, it is very encouraging to view an obviously successful rest rotation grazing system on a large ranch in the arid West that has been in operation for nearly twenty years.

Thanks again, Ray. Your dedication to the system and the basic principles of sound range management should be a model for all range managers.

Sincerely,

  
Steve Bayless

cc: Jack Jones  
Gus Hormay  
Jim Baca  
Bob Lawton  
Joe Egan  
Steve Antonioli  
Jim Owings

## MATADOR RANCH

### Scene I (Matador Ranch Headquarters)

- (1) Introduction by BARRY WIRTH narrating the setting of the Matador Ranch, the purpose of this video tape presentation.

Camera first focused on Matador Ranch sign at their headquarters. Then slowly pan ranch buildings and background scenery.

- 
- (2) MARION CROSS (after being introduced by Barry)

- a. Briefly describe the historical livestock grazing use on the Matador.
- b. How long have they operated the ranch.
- c. Briefly summarize the present ranch operation.
  - how does it fit in with total Matador operations
  - approximate size of Matador Ranch (acres)
  - herd size, breed, etc.
  - seasonal use pastures, feeding period, tons fed
  - what is marketed (calves, yearlings, etc.) and when

d. Problems they identified which need correction.

- larkspur, facilities, range conditions, etc.

\* Insert short video scenes of larkspur and other problem areas (later editing).

Camera focused on Marion with Ranch buildings and mountains in background.

---

Scene II (High vista inside Matador Allotment)

(1) DICK COSGRIFFE (after being introduced by Barry)

Briefly describe the multiple resources present on public lands within the Matador Ranch.

- Livestock (AUM's) (Name the important plants needed)
- Wildlife (elk, deer, antelope, birds, fish, etc.) (Name the important plants needed)
- Recreation (Name the important plants needed)
- Watershed (Name the important plants needed)
- Etc. (Name the important plants needed)

Camera focused on Cosgriffe first then slowly pan from a strategic point to generally show broad vegetation types associated with multiple resource management.

\* Insert short video scenes of vegetation resources and problems (closeup's) to be edited in later.

---

Scene III (this scene could be shot inside office)

- (1) Narration by BARRY WIRTH explaining the many public meetings and planning which led to the development of the Matador Allotment Management Plan.

(Camera focused on Matador AMP document, list of participants, etc.)

- (2) GUS NORMAY (after being introduced by Barry)

a. Briefly describe grazing management objectives.

b. Describe grazing system

- Grazing formula (sketch drawing)

- Pasture layout and relation schedule (map of Matador)

Camera focused on Gus and the visual aids (charts and maps) he is talking from.

Scene V (Riparian Site within view of elk habitat)

(1) GUS HORMAY

- a. Describe which pasture we are in and the grazing treatments which have been applied.
- b. Describe major vegetation species present.
- c. Indicate which plant species have responded most and what further potential this site might have.
- d. Show what kind of trend studies have been initiated to monitor vegetation changes.

Camera focused on Gus and closeup of vegetation species which he is referring to.

(2) LEW MYERS (after being introduced by Barry)

- a. Describe riparian zone values for fish and wildlife.
- b. Describe studies initiated to monitor trend.
- c. Describe elk habitat area in background.

- d. Comment on the affect which livestock grazing has on these fish and wildlife resources.

Camera focused on Lew and closeup of vegetation, studies, etc. which he is referring to.

Scene V (historical sheep wintering/bedding site, near corrals)