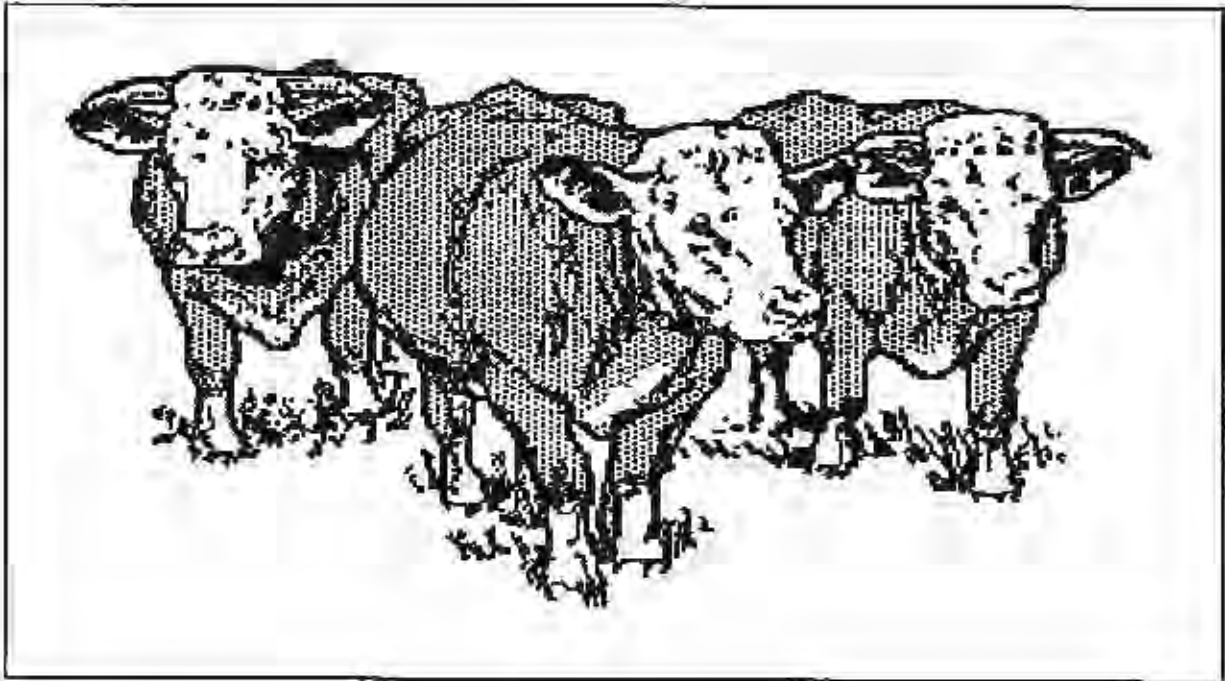


# **ALLOTMENT MANAGEMENT PLAN**

## **Big Spring Allotment**

**Prepared by**

**Shivwits Resource Area  
Arizona Strip District  
Bureau of Land Management**



**July 1990**

ALLOTMENT MANAGEMENT PLAN

Big Spring Pipeline	_____	Allotment Title
Shivwits	_____	Planning Unit
Shivwits	_____	Resource Area
Arizona Strip	_____	District

Prepared by: Lee E Hefner \_\_\_\_\_ District Range Con \_\_\_\_\_  
 (Name) (Title)

Concurrence: Anthony G. Steiner \_\_\_\_\_ 7/23/90 \_\_\_\_\_  
 (Permittee/ (Name) (Date)  
 Lessee)  
 \_\_\_\_\_ (Name) \_\_\_\_\_ (Date)

\_\_\_\_\_ (Name) \_\_\_\_\_ (Date)

Approved by: [Signature] Area Mgr. 5/2/94 \_\_\_\_\_  
 (Name) (Title) (Date)  
 \_\_\_\_\_ (Name) \_\_\_\_\_ (Title) \_\_\_\_\_ (Date)

Included in Permit/  
 Lease by Decision of: \_\_\_\_\_ (Title) \_\_\_\_\_ (Date)

REVISIONS

Prepared by: \_\_\_\_\_ (Name) \_\_\_\_\_ (Title)

Concurrence: \_\_\_\_\_ (Name) \_\_\_\_\_ (Date)  
 (Permittee/ Lessee)

\_\_\_\_\_ (Name) \_\_\_\_\_ (Date)

\_\_\_\_\_ (Name) \_\_\_\_\_ (Date)

Approved by: \_\_\_\_\_ (Name) \_\_\_\_\_ (Title) \_\_\_\_\_ (Date)

\_\_\_\_\_ (Name) \_\_\_\_\_ (Title) \_\_\_\_\_ (Date)

# ALLOTMENT MANAGEMENT PLAN

## Big Springs Allotment

### I. GUIDANCE FROM THE LAND USE PLAN

Guidance from the Shivwits Resource Area Management Framework Plan offers this guidance:

- Any given area may not be grazed more than one spring growing period (green-up to seed-ripe) during a three-year period.
- Any given area may not be grazed more than two summer growing periods (green-up to seed-ripe) during a three-year period.
- Pasture movement dates will be based on phenological requirements of all key species found on an allotment.
- At least one full year's rest for a portion of the allotment will be required during each grazing cycle.
- Grazing will not begin in areas above 6,000 feet before June of each year.
- Grazing will be restricted to the estimated livestock carrying capacity of the range.
- Utilization of key forage species will be limited to an average of 50 percent of the current year's growth (considering only areas identified for use in any given year).
- Provide protection to the Penstemon distans, a category 2 rare plant. Current monitoring shows no effects to the plant from grazing or trampling. This is due to its unique habitat--steep, north-facing slopes.

### II. GRAZING MANAGEMENT PROBLEMS

See allotment evaluation in back of this document.

**A. Lack of Dependable Livestock Waters**

At latest count (January 1990) there were seven locations on the allotment with water. The total count of livestock water developments are about 25 on the allotment. The other 18 locations were dry earthen water tanks and troughs on pipelines. Some earthen tanks are small and are not expected to provide long term water. Others are large tanks but are shallow due to accumulated silt and thus hold little water and evaporate quickly or drain or just fail to catch water. Several water troughs on existing pipelines appear abandoned.

**B. Lack of Sufficient Livestock Forage**

All pastures lack cool season grasses and browse. Death Valley and Big Spring pastures lack all grasses and browse. All other pastures have significant quantities of warm season grasses. These grasses according to the trend data are showing down trend with some stable trend. The lack of cool season grasses and browse in the high country of the allotment has lowered the carrying capacity of the allotment. The loss of the browse and grasses occurred many years ago. The exact time period, of course, is unknown. The large amount of all grasses and browse on Whitmore Point indicates the sagebrush areas of this allotment could support much more grass.

**C. Heavy Utilization of Whitmore Canyon Bottom Vegetation**

The grasslands in the canyon bottom have heavy to severe utilization. Key area #5, #7 and #8 are all in the canyon bottom. In 1989-90 key area #5 had 52 percent and 62 percent, key area #7 had 66 percent, key area #8 had 84 percent. There is a cover of warm season grasses on the canyon bottom but heavy utilization exposes soil to erosion. Trampling of soil is extreme.

**III. OBJECTIVES**

**A. General**

The general objective is to increase perennial grasses and browse in the grazed areas of the allotment.

**B. Specific**

**Key Area #4 - Whitmore (Ecological Site: Shallow Loamy 10-14)**

- Increase cool season perennial grasses from a frequency of 4 percent (1990) to 30 percent in 15 years.
- Increase the frequency of warm season perennial grasses from 15 to 35 percent.
- Increase the frequency of browse from 0 percent to 10 percent in 15 years.

**Key Area #5 - Lava Canyon Bottom**

- Increase the frequency of cool season perennial grass from 0 percent to 10 percent in 15 years.
- Maintain warm season perennial grass at present levels.
- Increase the frequency of browse from 1 percent to 10 percent in 15 years.

**Key Area #6 - Cole Spring (Ecological Site: Shallow Loamy 10-14)**

- Increase the frequency of cool season perennial grass from 0 percent to 10 percent in 15 years.
- Increase the frequency of warm season perennial grass from 25 percent to 45 percent in 15 years.
- Increase browse from 0 percent to 10 percent in 15 years.

**Key Area #7 - Canyon Bottom**

- Increase the frequency of cool season perennial grass from 0 to 10 percent in 15 years.
- Increase the frequency of browse from 0 to 10 percent in 15 years.
- Decrease the frequency of shrubs/trees from 95 percent to 50 percent in 15 years.

### **Key Area #8 - Canyon Bottom Airstrip**

- Increase warm season perennial grasses from 44 to 55 percent in 15 years.
- Increase browse from less than 1 percent to 20 percent in 15 years.
- Increase cool season grass from 0 to 5 percent in 15 years.

This is an auxiliary #5 only photo point and utilization transect.

### **Key Area #9 - Big Spring (Ecological Site: Basaltic Uplands?)**

- Increase the frequency of cool season perennial grasses from 0 percent to 10 percent in 15 years.
- Increase the frequency of warm season perennial grasses from 0 to 10 percent in 15 years.
- Increase the frequency of browse from 0 to 20 percent in 15 years.
- Decrease the frequency of sagebrush, pinyon and juniper from 100 percent to 50 percent in 15 years.  
*45% 16% 55% 25%*

All of the above in Key Area #9 would be dependent on prescribed land treatment or a wildfire occurrence. With neither done, the frequency would not change from the present (1990).

### **Key Area #10 - Canyon Bottom**

- Maintain warm season perennial grasses at present levels.
- Increase browse from <1 to 10 percent in 15 years.
- Increase cool season grasses from <1 to 5 percent in 15 years.

### **Key Area #11 - Canyon Bottom**

- Maintain warm season perennial grasses at present levels.
- Increase browse from 10 to 15 percent in 15 years.

- Increase cool season perennial grasses from 0 to 5 percent in 15 years.

Key areas may be added as the need arises.

#### IV. KEY SPECIES AND PHENOLOGY

KEY SPECIES	DEVELOPMENTAL STAGES			
	START GROWTH	FLOWERING	SEED RIPE	SEED DISSEM.
<u>Shrubs:</u>				
Range ratany	3/1	5/1-5/15	8/1-9/15	10/1
Cliffrose	4/1	5/15	7/1	8/1*
Fourwing saltbush	3/15	6/15	11/1	12/1
Winterfat	3/1-4/15	3/20-6/1	8/1-9/15	10/1-12/1
Mormon tea	3/1-5/1	6/1-7/20	8/1-9/15	10/1-12/1
Bursage	2/15-3/1	5/1-5/15	8/1-9/15	10/1
<u>Grasses:</u>				
Blue & black grama	6/1	8/1	9/15	10/10
Indian rice grass	2/15-3/1	5/1-6/1	7/15	8/15
Galleta	3/15-5/1	5/1-6/1	8/15	10/15
Squirreltail	2/15-3/1	6/1	7/1	8/1
Wheatgrasses	3/1	5/15	7/1	8/15
Sand dropseed	4/1	6/20	7/15	8/30
Russian wildrye	3/1	5/15	7/1	8/15
Needlegrass	3/1	5/15	7/1	8/1

\* Following year

#### V. PLANNED GRAZING USE

See Potential Pasture map.

**A. Winter Country (Whitmore Canyon and other Canyon Bottoms)**

ORDER OF USE	PERIOD OF USE			
	OCTOBER 16 ----- TO ----- APRIL 15			
A First 10/16 - 11/30	45% util.	Rest	Rest	Rest
B Second 12/1 - 1/15	Rest	45% util.	Rest	Rest
C Third 1/16 - 2/28	Rest	Rest	45% util.	Rest
D Fourth 3/1 - 4/15	Rest	Rest	Rest	45% util.

PASTURES	1991	1992	1993	1994	ETC.
Cold Spring	A	D	C	B	Repeat
Airstrip	B	A	D	C	Cycle
Lava	C	B	A	D	" "
Chaparral	D	C	B	A	" "

The winter grazing system would operate from when the livestock are brought into the Whitmore Canyon bottom from October 16 to April 15. Livestock would move first into the pasture designated A. Once utilization levels at a key area reaches 45 percent (average use level for key species) the livestock would move to the pasture designated for B use. When utilization level reaches 45 percent at the key area in that pasture the livestock would be moved to the pasture designated for C use and so on through pasture D. Should the cattle use up the forage to 45 percent in all pastures before April 15 the livestock would be moved to a summer country pasture (Whitmore, Cole Springs). If this happens two years in a row, livestock numbers would be reduced to a level that the canyon bottom forage can support up to 45 percent utilization levels on key species.

**B. Summer Country**

TREATMENT	PERIOD OF USE	
	APRIL 16 ----- TO ----- OCTOBER 15	
A 4/16 - 7/15	50% util.	Rest
B 7/16 - 10/15	Rest	50% util.



PASTURES	1991	1992	1993	1994	ETC.
Whitmore Cole Spring Kinney Flat Meadow*	A B	B A	A B	B A	Repeat Cycle

Whitmore and Cole Spring pastures would be on a deferred grazing system with use alternating each year as to order of use. Use in these pastures would last until an average of 50 percent utilization is reached on the key species at key areas, then livestock would be moved. The Kinney Flat\* Meadow would be managed the same way. When utilization reaches 50 percent on the meadow at transect locations the livestock would be moved out into Cole Spring pasture and the gates closed. If utilization persists above the 50 percent level on the average for two years, livestock numbers or time spent in the pastures would be reduced to bring utilization levels to 50 percent.

**C. Special Pastures**

Big Spring and Death Valley pastures are currently used little as forage production is precluded by tree and shrub production. These pastures will be used as spillover pastures. If the other summer pastures reach 50 percent utilization prior to October 15, one of these pastures can be used. This would be during the July to October period. However, during the following year the pastures would be rested during the period of time when it was used the previous year.

**D. Rationale**

This grazing system would provide opportunity to the perennial grasses and browse to increase to their potential in the foreseeable future. The allotment in all of its pastures lacks cool season grasses and browse; and other pastures like Big Spring and Death Valley have little or no forage. Variety of vegetation is poor on the allotment. The rest periods and adherence to utilization levels will allow forage plants to grow, store root and twig reserves, and reproduce in the areas grazed by livestock. The canyon bottoms should respond to rest quickly with average moisture. Warm season grasses should do well. Cool season grasses and browse would be far slower to respond because of their low numbers and reproduction potential.

**VI. NORMAL OPERATION**

The operation is licensed as follows:

LIVESTOCK #	PERIOD OF USE	% PUBLIC LAND
222 Cattle	October 1 to September 30	83
2 Horses	October 1 to September 30	83

The above is the normal operation; however, stocking level is controlled by water availability and forage quantities. When an area's forage becomes unavailable due to dry reservoirs or other non-functioning water sources, the stocking level needs to be decreased. The same applies to forage availability. When all factors are in place the cattle can be increased. This all needs close coordination between the rancher and the BLM.

**VII. FLEXIBILITY**

The grazing move dates for livestock would be as shown on the grazing schedules. Moving cattle would be triggered by utilization levels shown and described in the grazing system section. If the move date (April 15, winter country; October 15, summer country) is reached before attaining the 45 percent or 50 percent utilization, then the move would occur on the date. If the utilization level set is reached before the move date, the move always occurs with reaching the utilization level. The only flexibility on these two criteria is if the situation arises where the average utilization level is below 45 percent or 50 percent and the move date (April 15, October 15) is reached; then it can be arranged with the area manager to stay up to two weeks longer. Stocking rate increases or decreases would be determined through the monitoring studies, and/or through coordination when weather conditions require or allow immediate changes.

Within the winter country pastures or summer country pastures, when the utilization level reaches 45 percent or 50 percent and the cattle are to be moved to the next pasture, but the next pasture is not in condition to be grazed; it can be arranged with the area manager to move the cattle to the best looking pasture.

## **VIII. RANGE IMPROVEMENTS**

### **A. Existing Range Improvements**

See Existing Range Improvements table.

This allotment has numerous range improvements. The fences are numerous as are the water developments. The interior pasture fences in Whitmore Canyon all need some work where they cross washes and at other locations in order to operate the proposed grazing system. The fence around Kinney Flat Meadows needs work regardless of which grazing system is chosen. Most boundary fences are adequate. The pipelines and reservoirs need work, but, the reservoirs have a poor record of holding water. This due to substrate or other factors. This makes grazing hard to operate.

### **B. Proposed Range Improvements**

See Proposed Range Improvements table.

1. One and one-half miles of new gap fences are needed to close Cole Spring pasture from Cold Spring pasture. One fence involving state and private land would be in T34N R9W Sections 32 and 33. If built on BLM land it would involve Sections 28, 29 and 30.
2. Finish the fence between Cole Spring and Big Spring.
3. Build two catchments, one at the north end of Whitmore Point pasture and one on the NPS land at the south end of the pasture. BLM would build the north one and the permittee would build the south one or vice versa.

No land treatments will be proposed in this plan due to many costs and complications now associated with this practice. Land treatment will be treated on a case-by-case opportunity.

## **IX. BILLING PROCEDURE**

An advance billing will be issued each year in February and must be paid for by March 1, which is the beginning of the new grazing year.

Actual use billing will not be allowed until a consistent record of timely payment is established.

**X. STUDIES AND EVALUATIONS**

The studies and evaluations on this allotment will be done in conformance with the District Monitoring Plan of December 1, 1988.

**A. Utilization**

**Grazed Class Method** - Utilization will be done to ascertain livestock moves as outlined in the grazing system and to ascertain the final utilization immediately after the livestock are moved out of a pasture. This at first would require much coordinated utilization readings. Utilization reading frequency can be reduced in number when utilization levels reach a 45 percent and 50 percent average of the key forage plants as designated in the grazing system section.

**Trend** - Trend, using methods described in the district monitoring plan, should be read every other year in the deferred pastures (Whitmore and Cole Spring). The Whitmore Canyon pastures (winter country) should be set up on a staggered four-year schedule. One pasture would be read each year over a four-year cycle. This can be scheduled by the range conservationist in the study file.

**Ecological Site Condition** - Species composition by weight through the dry weight ranking method. This composition would then be aligned with the ecological site description in the soil survey. See district monitoring plan.

**Climate** - Would continue as described in the monitoring plan and the rain gauge data gathering would be done on existing time schedules.

**Actual Use** - The permittee will submit actual use records by September 30 each year to the area manager, showing accurate numbers of livestock on the allotment and dates of use in each pasture.

**B. Evaluation and Modifications**

Evaluation of actual use, trend, utilization, weather, ecological condition data would be correlated and interpreted to determine future livestock numbers.

After two full years of utilization data, the same data would be evaluated to determine carrying capacity. This would continue every two years until a satisfactory stocking level is reached and that would be as outlined in the grazing system section (45 percent or 50 percent utilization).

A full evaluation using trend, actual use, utilization, condition and other professional judgments in coordination with the rancher would be done after six years of signing this plan. This would determine needed changes in the AMP and new range improvements and subsequent livestock number changes also.

## EXISTING RANGE IMPROVEMENTS

PROJECT NAME	PROJECT #	UNITS	LOCATION	COST		MAINTENANCE RESPONSIBILITY
				BLM	PERM.	
Lava Flow Cross Fence	1491	1.4 mile	T33N R9W S23,26	519	655	Permittee
Cole Spring Reseeding	0801	1.5 miles	T34N R9W S8-7	242	358	BLM
Wood-Schultz Fence	0631	.3 mile	T35N R9W	37	140	Permittee
Cole Spring Excl. Reseeding	0680	200 acres	T34N R9/10W S7,12	416	—	BLM
WLA Whitmore #2 Wash Fence	0693	1.0 mile	T33N R9W S10	182	430	Permittee
Wood-Anderson-Larson Ditch Fe	0904	1.0 mile	T33N R9W S10	181	500	Permittee
Bundy-Lamoreaux Fence	0306	3.0 miles	T34N R10W	—	1278	Permittee
H. Carroll-Bundy Fence	0451	3.8 miles	T34N R9/10W	760	1743	Permittee
Lower Cole Spring Trail	4253	2.0 miles	T34N R9W S20,29	—	?	Permittee
Pocket Air Strip	4103	?	T34N R10W S12	—	225	Permittee
Cold Springs	4420	1	T34N R9W S9 NE4SW4	—	?	Permittee
Cold Forest Boundary Fence	4425	6.8 miles	T35N R9W S33-35; T34N R9W S4,9-10; T34N R8W S19-20	—	?	Permittee
Cold Little Fence	4424	1.4 mile	T34N R8W S17,20	—	?	Permittee
Nixon Cold Fence	4423	1.5 mile	T34N R9W S2; T35N R9W S35 SW4	—	?	Permittee
Big Springs Juniper Excl. ★	0893		T33N R8W S6,16	6840	—	
Wood-Bundy Division Fence	0752		T34N R9W S5 N2	113	—	
Big Spring Pipeline ★	0543	1.5 mile	T33/34N R8/9W S2	—	680	Permittee
Fence	1200	2.0 miles	T33N R9W S14,23	—	1278	Permittee
Fence & Water Storage	1201	.5 mile	T33N R9W S22	—	650	Permittee
Reservoir	1350	4050 cu yd	T34N R10W S12	—	810	Permittee
Pipeline & Troughs	1520	2.25 miles	T33N R9W S2,11,14,22	—	3500	Permittee
Reservoir	1522	1500 cu yd	T34N R10W S27	—	300	Permittee
Reservoir	1685	3600 cu yd	T33N R9W S4	—	720	Permittee
Reservoir/Storage Tank	1856	5000 cu yd	T34N R10W S12	—	1000	Permittee
Pipeline & Steel Tanks	1661	.5 mile	T34N R9W S8,17	—	310	Permittee
Pipeline	1663	2.0 miles	T33N R9W S2-4	—	450	Permittee
Pipeline	1665	2.0 miles	T33N R9W S27,34	—	450	Permittee
<i>#city italic</i> Pipeline/Two (2) Tanks ★	1745	2.5 miles	T34N R9W S24-27	—	2000	Permittee
Pipeline/Steel Tanks	1747	1.5 mile	T34N R9W S8,17,20	—	1500	Permittee
Reservoir ★	0668	1250 cu yd	T33N R9W S13	—	250	Permittee
Reservoir	0671	2500 cu yd	T34N R10W S33	—	500	Permittee
Reservoir	0672	2500 cu yd	T34N R10W S34	—	500	Permittee
Reservoir	0674	2000 cu yd	T33N R9W S2	—	400	Permittee
Reservoir	0676	1000 cu yd	T34N R9W S35	—	200	Permittee
Corral & Chute	0678	1	T34N R9W S7	—	350	Permittee
Reservoir ★	0682	750 cu yd	T34N R8W S31	—	150	Permittee
Reservoir ★	0684	1450 cu yd	T34N R8W S32	—	350	Permittee
Line Corral	4260	1.0	T34N R9W S20 SW4NE4	—	355	Permittee

★ = Range Improvements inside Wilderness Area

## PROPOSED RANGE IMPROVEMENTS

PRIORITY	PROJECT NAME	UNITS	APPROXIMATE COST/UNIT	TOTAL COST	MAINTENANCE RESPONSIBILITY	CONSTRUCTION COST	ESTIMATED DATE OF COMPLETION
1*	Cold Spring Pasture Fence	1.5 ml.	5,000/mile	\$7,500	Permittee	BLM-Material Permittee-Build	April 15, 1991
2*	Cattleguard	1	2,000/each	\$2,000	Permittee	BLM-Total	April 15, 1991
3	North Whitmore Catchment	30,000	35,000/each	\$35,000	Permittee & BLM	BLM	When funds are available
4	South Whitmore Catchment	30,000	35,000/each	\$35,000	Permittee	Permittee	When funds are available

\*Projects on private and state land would be done by permittee with help from the SCS and Grazing Advisory Board. The fence and cattleguard, if located on BLM land, will have materials provided. If built on state or private land, the permittee would have to fund the project or with SCS.