Standards for Rangeland Health and Guidelines for Grazing Administration
Implementation Project: Allotment Assessment
Wildcat – 4854

Original report dated: **8/6/2007**
Addendum to the report dated: **4/08/2013**

Management Evaluation

A. Purpose of Addendum

The purpose of this land health evaluation addendum is to determine if the existing soil, water, and vegetative resources are meeting, making progress toward meeting or are not meeting the Arizona Standards for Rangeland Health since the original assessment was signed 8/6/2007. These resources are managed according to the Grand Canyon-Parashant National Monument RMP and activity plans, which identify terms and conditions for management of public lands within the Wildcat Allotment. If the current livestock grazing practices are determined to be causing non-attainment of Standards then they will be modified to comply with the Guidelines for Grazing Administration.

The land health assessment, signed 8/6/2007, determined the allotment was making significant progress toward meeting the applicable standards for rangeland health and had the following recommendations:

1. Renew the ten year grazing permit on the Wildcat allotment with current mandatory terms and conditions of that permit.

2. Carry forward as a priority project the Salt House Pinyon-Juniper Removal treatment project to restore vegetation diversity, ground cover abundance, and assist in watershed functionality in the West Fork of Parashant drainage. This project along with others should be dove-tailed to existing planning and a future watershed treatment plan.

3. Continue using the herbicide Tebuthiuron "Spike 20P" as a tool to reduce the composition of sagebrush or other woody species in identified treatment areas to meet desired plant community objectives.

4. Allow AGFD and the livestock permittee to go forward with developing maintenance solutions of Upper Pigeon Spring.

5. Continue to treat any noxious weeds found on the allotment.

B. Summary of Studies Data

1. Livestock Actual Use

Actual use was determined from licensed use. Total active preference for the allotment is 4,593 AUMs.

Grazing Year	AUMs Used	% of Authorized AUMs Used
1991	2,873	63%
1992	3,024	66%
1993	1,135	25%
1994	410	9%
1995	683	15%
1996	498	11%
1997	2,519	55%
1998	2,513	55%
1999	2,588	56%
2000	2,715	59%
2001	2,814	61%
2002	1,148	25%
2003	1,366	30%
2004	2,142	47%
Average assessed in S&G	**1,888**	**41%**
2005	2,453	53%
2006	2,872	63%
2007	2,948	64%
2008	3,000	65%
2009	3,027	66%
2010	3,042	66%
2011	3,025	66%
2012	2,729	59%
Average Since S&G Assessment	**2,887**	**63%**
Overall Average	**2,251**	**49%**

2. Precipitation

Precipitation and weather patterns affect the amount of vegetation produced on the allotment; fluctuating amounts and the seasonal distribution of precipitation results in varying amounts of forage from year to year. Normal grazing schedules and livestock management practices may have to be modified during periods of drought. WO IM No. 2002-120 and Arizona IM No. AZ-2002-025 outline guidance strategies when evaluating impacts to rangelands due to drought. The BLM works with livestock permittees to voluntarily reduce livestock numbers on public lands, or portions of or entire allotments may be temporarily closed. Livestock operators and the BLM jointly develop short and long-term strategies for modifying livestock use on public land to ensure the conservation and protection of soil and vegetation resources. For example, the BLM works cooperatively with livestock permittees to match available forage with appropriate livestock numbers. Historically, most livestock operators impacted by drought conditions have voluntarily reduced their numbers without issuance of formal livestock closure notices. However, if the BLM determines immediate protection of the range resource is merited; closures or modifications to an allotment may be issued effective upon issuance under the authority of 43 CFR 4110.3-3.

Average annual precipitation on Wildcat is approximately 15-19". Since there is no rain gauge on the allotment, the two nearest gauges at Salt House and Poverty Mountain are used to interpret annual rainfall amounts. The Salt House rain gauge is located in T32N, R13W, Sec.27, approximately 1 mile south of Wildcat.

- 2007 Assessment: Average precipitation is ~19" annually. Approximately 14 percent (2.63") comes in the fall, 34 percent (6.80") in the winter, 20 percent (3.99") in the spring and 32 percent (6.35") in the summer.
- 2013 Current: Average precipitation is ~18.16" annually. Approximately 14.3% (2.59") comes in the fall, 36.5% (6.63") in the winter, 19.3% (3.5") in the spring and 30% (5.45") in the summer.

The Poverty Mountain rain gauge is located in T35N, R12W, Sec.33, approximately 2 ½ miles north of the allotment.

- Average precipitation is 16"+ annually. Approximately 14 percent (2.31") comes in the fall, 36 percent (5.73") in the winter, 18 percent (2.91") in the spring, and 32 percent (5.20 percent) in the summer.
- 2013 Current: Average precipitation is 15.3" annually. Approximately 14.9% (2.28") comes in the fall, 36.5% (5.59") in the winter, 17.9% (2.74") in the spring, and 30.7% (4.69") in the summer.

Even though the two rain gauges differ in the amount of annual rain fall, seasonal distribution of the precipitation is very similar. (See Appendix A)

3. Utilization

Utilization is defined as the proportion of current years' forage production that is consumed or destroyed by grazing animals. Utilization is read using the grazed class method to collect the data. Utilization was read at the key areas (see Tables 1 – 5). Blank cells indicate no plants of that species were encountered in the transect. Years skipped indicate no data collected. NU = Non-use, mean livestock did not graze the pasture.

Table 1

Percent Utilization of Key Species at Key Area #1 (Bench Pasture)												
	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Orhy	NU	NU	26	25	38	51	45	37	30	34	34	20
Sihy	NU	NU	ND	20	38	43	44	31	30	28	30	13
Come	NU	NU	24	17	42	32	37	38	34	28	35	29
Epne	NU	NU	26	3	41	31	31	23	42	34	33	22

Utilization levels on key species at Key Area #1 in the Bench pasture exceeded the 50% allowable once during the evaluation period from 1994 through 2012.

Table 2

Percent Utilization of Key Species at Key Area #2 (Upper Pigeon Pasture)												
	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2012
Sihy	NU	NU	NU	39	42	39	39	42	42	44	36	-
Bogr	NU	NU	NU	30	36	36	26	39	35	39	28	0
Spcr	NU	NU	NU	42	33	43	28	46	47	51	26	0

Utilization levels on key species at Key Area #2 in the Upper Pigeon pasture did not exceed the 50% allowable during the evaluation period from 1994 through 2012.

Table 3

Percent Utilization of Key Species at Key Area #3 (North Pasture)												
	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2012
Sihy	NU	NU	40	41	30	32	32	36	30	42	35	49.7
Stco	NU	NU	33	47	38	38	45	38	30	33	45	66.7
Spcr	NU	NU	22	38	35	33	49	30	30	41	19	0
Bogr	NU	NU	24	32	32	44	41	34	30	31	41	1.3

Utilization levels on key species at Key Area #3 in the North pasture exceeded the 50% once during the evaluation period from 1994 through 2012.

Table 4

Percent Utilization of Key Species at Key Area #4 (Salt House Pasture)												
	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2012
Sihy	NU	NU	52	32	45	42	51	34	36	24	36	51.7
Kocr	NU	NU	62	27	38	41	29	15	37	14	27	43.8
Bogr	NU	NU	55	44	40	40	43	33	0	24	28	52.4
Spcr	NU	NU	59	48	47	48	53	37	0	23	36	-

Utilization levels on key species at Key Area #4 in the Salt House pasture exceeded the 50% allowable seven times during the evaluation period from 1994 through 2012.

Table 5

Percent Utilization of Key Species at Key Area #5 (Savanic Pasture)												
	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Boer	NU	NU	37	30	25	46	47	30	30	14	27	12
Sihy	NU	NU	55	51	44	53	44	29	30	21	24	17
Stco	NU	NU	55	39	42	44	36	35	30	25	38	16
Atca	NU	NU	53	59	48	39	42	31	30	19	12	-

Utilization levels on key species at Key Area #5 in the Savanic pasture exceeded the 50% allowable four times during the evaluation period from 1994 through 2012.

4. Trend

The trend of an area may be judged by noting changes in vegetation attributes such as species composition, density, cover, production, and frequency. Vegetation data is collected at different points in time on the same key area, and the results are then compared to detect change.

Trend monitoring was collected using the Pace-Frequency method, which measures the occurrence frequency of forage and non-forage vegetative species. Cover data, which determines the percent of bare ground, litter, rock, cryptogram and live basal vegetation, is also collected. Ground cover is determined by dividing the total number of hits for all categories except bare ground and rock by the total number of hits – see page 73 of BLM Technical Reference 1734-4 (BLM 1996). Change in ground cover is an important aspect of vegetative trend and proper functioning watersheds. The first readings established a baseline for comparison to all future readings. Trend is considered up when the species increases by 10+ points from the first reading to the last shown reading. The trend of a species is static or not apparent if it shows a change of 0 to 10 or 0 to -10 from the first to the last reading. Down trend is a reading of more than -10 from the first reading.

Tables 6 – 15 show the key species frequency, which is the ratio between the number of sample units that contain key species and the total number of sample units, comparing the most recent data to the base year. Overall trend at each key area is the direction of change in frequency observed between the initial reading (base year) and the current reading, as depicted by the arrows, i.e., (↗) up, (↘) down, and (→) no apparent trend (if numbers are between 1-10%) or static.

Key Area #1 Bench Pasture

Shallow Upland, Calcareous 10-14" p.z , 4,500' elevation Apparent Trend – Up; Live Basal Veg. Cover 6%.

Table 6: 2007 Assessment

Wildcat Allotment Key Area #1					
Plant Species (Pace Frequency)	**Included in the EcoSite Guide**	**Present at the Key Area**	**% Frequency in 1983**	**% Frequency in 2005**	**TREND**
Grasses					
Orhy*	Y	Y	15.8	16	Static
Sihy*	Y	Y	8.9	6	Static
Arlo	Y	Y	2	4	Static
Forbs					
Sphae	Y	Y	32.2	57	
Bamu	Y	Y	2.5	10	
Erigeron	Y	Y	0.5	0	
Encelia	Y	Y	0.5	0	
Eriogonum	Y	Y	0	10	
Lile	Y	Y	0	1	
Mimu	Y	Y	0	1	
Mentzelia	Y	Y	0	1	
Shrubs					
Gusa	Y	Y	27.7	22	
Cora	Y	Y	0	2	
Come*	Y	Y	3	2	Static
Yuba	Y	Y	6.4	11	
Epne*	Y	Y	0	2	Static
Aster	Y	Y	5.0	1	
Lyan	Y	Y	2	2	
Cover (Step Point)	**EcoSite potential Basal Cover**	**Reading in 1983**	**Reading in 2005**	**AMP objective for cover**	**TREND**
Live Basal Veg.	NA	1.5% cover	6% cover	NA	Static

Table 7: 2013 Current

Table 7 – Trend Data		
Key Species or Cover Category	Years plots were read	
Wildcat Allotment		
Key Area #1	1982	2010
Litter	30	40
Vegetation (basal cover)	1.5	.5
Achnatherum hymenoides	16	9
Elymus elymoides ssp. elymoides	9	3
Cowania mexicana	3	.5
Ephedra nevadensis	0	2
Overall Trend for Key Area #1: (→) Static		

Key Area #2 Upper Pigeon Pasture

Shallow Loamy 10-14" p.z , 5,820' elevation Apparent Trend – Up; Live Basal Veg. Cover 19%.

Table 8: 2007 Assessment

Wildcat Allotment Key Area #2					
Plant Species (Pace Frequency)	Included in the EcoSite Guide	Present at the Key Area	% Frequency in 1983	% Frequency in 2005	TREND
Grasses					
Bogr*	Y	Y	75.8	90	Up
Arlo	Y	Y	0	1	
Sihy*	Y	Y	6.9	6	Static
Orhy	Y	Y	0	1	
Spcr*	Y	Y	0	3	Static
Stco	Y	Y	0	1	
Muto2	Y	Y	0	2	
Forbs					
Sphae	Y	Y	12.4	10	
Erigeron	Y	Y	0.9	0	
Phlox	Y	Y	2	5	
Astrag	Y	N	0.9	0	
Senecio	Y	Y	0	1	
Calcordus	Y	Y	0	2	
Aster	Y	N	0	1	
Lear4	Y	Y	0	7	
Peth2	Y	Y	0	2	
Plantago	Y	Y	0	38	
PPFF	Y	Y	0	7	
AAFF	Y	Y	0	91	

Shrubs					
Artr	Y	Y	41	10	
Gusa	Y	Y	67.8	14	
Befr	Y	Y	0	1	
Chvi8	Y	Y	0	8	
Opuntia	Y	Y	0	1	
Pied	N	Y	0	1	
Cover (Step Point)	**EcoSite potential Basal Cover**	**Reading in 1983**	**Reading in 2005**	**AMP objective for cover**	**TREND**
Live Basal Veg.	NA	4% cover	19% cover	NA	Up

Table 9: 2013 Current

Loamy Upland, Gravelly 10 – 14" p.z.

Table 9 – Trend Data		
Key Species or Cover Category	**Years plots were read**	
Wildcat Allotment		
Key Area #2	**1983**	**2010**
Litter	**32**	**43**
Vegetation (basal cover)	**4**	**2**
Elymus elymoides ssp. elymoides	**7**	**.5**
Bouteloua gracilis	**76**	**87**
Sprorobolus cryptandrus	**0**	**16**
Overall Trend for Key Area #1: (↑) Up		

Key Area #3 North Pasture

Shallow Loamy 10-14" p.z , 5,760' elevation Apparent Trend – Down; Live Basal Veg. Cover 27%.

Table 10: 2007 Assessment

Wildcat Allotment Key Area #3					
Plant Species (Pace Frequency)	**Included in the EcoSite Guide**	**Present at the Key Area**	**% Frequency in 1982**	**% Frequency in 2004**	**TREND**
Grasses					
Bogr*	N	Y	64	82	Upward
Stco*	N	Y	3	10	Static
Sihy*	Y	Y	64	16	Down
Arlo	N	Y	0	7	
Spcr	Y	Y	0	4	
Orhy*	N	Y	6	3	Static
Forbs					
Sphae	Y	Y	13	7	
PPFF	Y	Y	9	6	

Lewis Flax	N	Y	0	2	
Erigeron	N	Y	16	5	
AAFF	Y	Y	0	0.5	
Eriogonum	Y	Y	4	3	
Shrubs					
Artr	Y	Y	27	4	
Gusa	Y	Y	28	55	
Chvi8	Y	Y	0	0.5	
Erfa	N	Y	0	1	
Opuntia	Y	Y	0	0.5	
Cover (Step Point)	**EcoSite Potential Basal Cover**	**Reading in 1983**	**Reading in 2004**	**AMP objective for cover**	**TREND**
Live Basal Veg.	NA	5% cover	27% cover	NA	Upward

Table 11: 2013 Current
Loamy Upland, Gravelly 10 – 14" p.z.

Table 11 – Trend Data		
Key Species or Cover Category	**Years plots were read**	
Wildcat Allotment		
Key Area #3	**1982**	**2010**
Litter	**20**	**35**
Vegetation (basal cover)	**5**	**14**
Hesperostipa comata ssp. comata	**3**	**6**
Achnatherum hymenoides	**6**	**4**
Elymus elymoides ssp. elymoides	**64**	**61**
Bouteloua gracilis	**64**	**85**
Overall Trend for Key Area #1: (↑) Up		

Key Area #4 Salt House Pasture

Loamy Upland, Gravelly 10-14" p.z , 5,900' elevation Apparent Trend – Upward; Live Basal Veg. Cover 8%.

Table 12: 2007 Assessment

Wildcat Allotment Key Area #4					
Plant Species (Pace Frequency)	**Included in the EcoSite Guide**	**Present at the Key Area**	**% Frequency in 1982**	**% Frequency in 2005**	**TREND**
Grasses					
Bogr*	Y	Y	51	67	Upward
Sihy*	Y	Y	20	10	Static
Kocr*	Y	Y	9	27	Upward
Agsm	Y	Y	0.5	1	

Key Area #5 Savanic Pasture

Shallow Sandy Loam, Calcareous 10-14" p.z , 4,400' elevation Apparent Trend – Upward; Live Basal Veg. Cover 8%.

Table 14: 2007 Assessment

Wildcat Allotment Key Area #5					
Plant Species (Pace Frequency)	**Included in the EcoSite Guide**	**Present at the Key Area**	**% Frequency in 1982**	**% Frequency in 2005**	**TREND**
Grasses					
Boer*	N	Y	25	14	Down
Sihy*	N	Y	6	1	Static
Hiri	Y	Y	2	4	
Spcr*	N	Y	0	2	Static
Stco*	Y	Y	7	1	Static
AAGG		Y	0	96	
Forbs					
Bamu	Y	Y	0	3	
Eriogonum	N	Y	4	30	
Penstamon	N	Y	1	9	
Stephanomeria	Y	Y	0	14	
AAFF	Y	Y	0	68	
Shrubs					
Erfa	Y	Y	0	6	
Atca		Y	1	1	
Lyan		Y	6	4	
Gusa		Y	34	4	
Epne		Y	0	1	
Cora		Y	6	10	
Chvi8		Y	0	1	
Ukwn ½ shrub	Y	Y	0	4	
D. almond		Y	0	2	
Yuba		Y	0	2	
Juos		Y	4	6	
Cover (Step Point)	**EcoSite Potential Basal Cover**	**Reading in 1982**	**Reading in 2005**	**AMP objective for cover**	**TREND**
Live Basal Veg.	NA	0% cover	4% cover	NA	Static

Table 15: 2013 Current

Table 15 – Trend Data		
Key Species or Cover Category	**Years plots were read**	
Wildcat Allotment		
Key Area #5	**1982**	**2010**
Litter	**32**	**36**
Vegetation (basal cover)	**0**	**0**

Elymus elymoides ssp. elymoides	**6**	**2**
Hesperostipa comata ssp. comata	**7**	**0**
Sprorobolus cryptandrus	**0**	**1**
Bouteloua eriopoda	**25**	**0**
Overall Trend for Key Area #1: (↓) Down		

Summary: The trend index, which combines percent frequency of key forage species, percent litter, and percent live vegetation (basal cover) into one numerical value, shows Key Area #1 has changed from an upward trend in the 2007 assessment to static from the 2010 data. This shift between the 2010 data and 2007 assessment should not be of concern as the 2007 assessment's determination came from 2005 data. The 2005 data is above normal as the fall of 2004 and winter and spring of 2005 were above average for precipitation (See Appendix A).

Key Areas #2, #3 and #4 have not changed between the 2007 assessment using 2005 data and the current 2010 data. The trend of these three key areas are up.

Key Area #5 saw a change from upward to downward trend between the 2007 assessment using 2005 data and the current 2010 data. This is directly attributable to the decrease in percent frequency of *Bouteloua eriopoda*. Initial analysis indicates this downward trend could be in correlation with precipitation but additional monitoring is warranted.

After further analysis, Steve Cassiday (retired NRCS) and University of Arizona, determined Key Area's #'s 2 and 3 were not Shallow Loamy 10- 14" p.z. but rather Loamy Upland 10 – 14" p.z. Key area #4 was also changed from a Loamy Upland, Gravelly 10 -14" p.z. to a Loamy Upland 13 – 17" p.z.

5. Ecological Site Inventory

The "Dry Weight Rank" vegetative sampling method was used to measure composition, which is the proportion (percentage) of various plants in relation to the total at a particular area. This vegetation attribute is also used to describe ecological sites. An ecological site is a distinctive kind of land with specific physical characteristics that differs from other kinds of land in its ability to produce a distinctive kind and amount of vegetation. It is the product of all the environmental factors responsible for its development. Ecological sites have developed a characteristic kind and amount of vegetation. The natural plant community on an ecological site is typified by an association of species that differs from that of other ecological sites in the kind and/or proportion of species or in annual production (BLM 2001). While the natural plant community of a particular ecological site is recognized by characteristic *patterns* of species associations and community structure, the *specific species* present from one

location to another may exhibit natural variability. The natural plant community is not a precise assemblage of species for which the proportions are the same from place to place or even in the same place from year to year. Variability is the rule rather than the exception.

The distinctive plant communities associated with each ecological site (including the variability which frequently occurs) can be identified and described, and are called ecological site descriptions. These ecological site descriptions (or guides) are provided by the Natural Resource Conservation Service (NRCS). The ecological site's potential for change in composition over time was considered along with other vegetation attributes to quantify desired plant community objectives for each key area. The potential composition is determined by the applicable soil type and precipitation zone. These potentials are described in the NRCS Ecological Site Guides, and were used to set the DPC objectives.

Ecological status is the present state of the vegetation at an ecological site in relation to the potential natural community (PNC). A PNC is "the biotic community that would become established if all successional sequences were completed without interferences by humans under the present environmental conditions". It may include "naturalized nonnative species" (BLM 2005 and BLM 2001). PNC differs from "historic climax plant community" in that an historic climax plant community is "the plant community that existed before European immigration and settlement" (BLM 2001). The BLM uses "potential natural community" terminology rather than "historic climax plant community" because PNC recognizes past influences by man. It is an expression of the relative degree to which the kinds, proportions, and amount of plants in a plant community resemble that of the PNC for the site. It is a coefficient of community similarity, which gives an ecological rating of the plant community.

Ecological status expresses the relative degree to which the kinds, proportions, and amounts of plants in a plant community resemble that of the potential natural plant community for the site. Ecological status changes slowly for most of the sites in this area and seral stages should not be confused with Desired Plant Communities. Ecological status is reported in the following four classes, or seral stages, which are the developmental stages of ecological succession (and corresponds to percent similar to the PNC):

- **Early Seral:** 0-25% of the expected potential natural community exists.
- **Mid Seral:** 26-50% of the expected potential natural community exists.
- **Late Seral:** 51-75% of the expected potential natural community exists.
- **PNC:** 76-100% of the expected potential natural community exists.

Tables 16 – 25 display ecological site inventory data for the key areas found within the Wildcat Allotment.

Table 16 2007 Assessment Key Area #1 Bench Pasture

Shallow Upland, Calcareous 10-14" p.z., Mid seral (33% of PNC)

Key Area #1 Plant Spp	Site Guide Allowable Composition	No Prior Composition	2005 Composition	Desired Composition Objective
Grasses				
Orhy*	1-2%		7%	2-7%
Sihy*	1-3%		4%	1-5%
Arlo	0%		4%	
Forbs				
Sphae	1-3%		46%	
Bamu	1-3%		4%	
Erigeron			T	
Encelia			T	
Eriogonum	1-3%		3%	
Lile			T	
Mimu			T	
Mentzelia			T	
Shrubs				
Gusa	1-2%		16%	
Cora	45-65%		3%	
Come*	1-3%		1%	1-3%
Yuba	2-5%		5%	
Epne*	3-5%		2%	3-5%
Aster	0%		1%	
Lyan	1-3%		4%	

Table 17 2013 Current Key Area #1 Bench Pasture

Shallow Upland, Calcareous 10-14" p.z., Early seral (17% of PNC)

Key Area and Plant Species	Current Composition	Allowable Site Guide Composition	Current Score
Key Area #1: Shallow Upland, Calcareous 10-14" p.z			
Last monitoring data collected in 2010			
Cowania mexicana	1%	3%	1
Ephedra nevadensis	1%	5%	1
Gutierrezia sarothrae	43%	2%	2
Yucca baccata	12%	5%	5
Achnatherum hymenoides	11%	2%	2

Elymus elymoides ssp. elymoides	1%	3%	1
Sphaeralcea	30%	3%	3
Other Perennial Forbs		2%	2
Phlox longifolia	1%		
Baileya multiradiata	1%		
Linum lewisii	1%		
Score: 17% Similar to PNC (or PNC)			

Table 18 2007 Assessment Key Area #2 Upper Pigeon Pasture

Shallow Loamy, 10-14" p.z., Late seral (63% of PNC)

Had the 2007 Assessment analyzed this key area as a Loamy Upland, Gravelly 10 – 14" p.z. it would have scored a 34.5% similarity to PNC.

Key Area #2 Plant Spp	Site Guide Allowable Composition	No Prior Composition	2005 Composition	Desired Composition Objective
Grasses				
Orhy*	5-10%		T	1-5%
Sihy*	5-10%		5%	5-10%
Arlo	1-5%		T	
Bogr2*	5-15%		60%	30-60%
Muto2	1-5%		T	
Spcr*	1-5%		2%	1-5%
Stco	5-10%		T	1-5%
Forbs				
Sphae	1-5%		5%	1-5%
Calochortus			T	
Phlo2			1%	
Peth2			1%	
Senecio			1%	
PPFF	1-5%		1%	1-5%
Lear4			1%	
Shrubs				
Gusa	5-10%		10%	5-10%
Artr	5-30%		8%	5-30%
Befr	5-10%		T	
Chvi8	5-10%		4%	
Pied	5-10%		T	1-5%
Aster			1%	
Opuntia	1-5%		1%	

Table 19 2013 Current Key Area #2 Upper Pigeon Pasture

Loamy Upland, Gravelly 10-14" p.z., Mid seral (35% of PNC)

Key Area and Plant Species	Current Composition	Allowable Site Guide Composition	Current Score
Key Area #2: Loamy Upland, Gravelly 10-14" p.z.,			
Last monitoring data collected in 2010			
Shrubs		10%	10
Artemisia tridentata	10%	5%	
Chrysothamnus viscidiflorus	10%	5%	
Eriogonum ambiguum	1%	5%	
Gutierrezia sarothrae	3%	5%	
Juniperus osteosperma	2%	10%	2
Bouteloua gracilis	59%	10%	10
Muhlenbergia torreyi	1%	5%	1
Achnatherum hymenoides	1%	7%	1
Elymus elymoides ssp. elymoides	1%	10%	1
Sprorobolus cryptandrus	8%	5%	5
Forbs		5%	5
Calochortus	1%	2%	
Lesquerella arizonica	1%	2%	
Penstemon thompsoniae	1%	2%	
Phlox longifolia	2%	2%	
Sphaeralcea	5%	2%	
Annual forbs	1%	2%	
Score: 35% Similar to PNC (or PNC)			

Table 20 2007 Assessment Key Area #3 North Pasture

Shallow Loamy, 10-14" p.z., Mid seral (46% of PNC)

Had the 2007 Assessment analyzed this key area as a Loamy Upland, Gravelly 10 – 14" p.z. it would have scored an 34.5% similarity to PNC.

Key Area #3 Plant Spp	Site Guide Allowable Composition	1995 Composition	2005 Composition	Desired Composition Objective
Grasses				
Orhy*	5-10%	1%	2%	2-6%
Sihy*	5-10%	18%	6%	5-10%
Arlo	1-5%	1%	2%	
Bogr2*	5-15%	44%	44%	30-45%
Muto2	1-5%	T	T	
Spcr	1-5%	4%	2%	
Stco*	5-10%	T	2%	1-5%
Forbs				
Sphae	1-5%	6%	1%	1-5%
Lewis flax		4%	1%	
Eriogonum		2%	1%	
Erigeron		5%	0%	
AAFF	1-5%	6%	1%	1-5%
Shrubs				
Gusa	5-10%	9%	35%	
Artr	5-30%	T	1%	5-20%
Chvi8	5-10%	T	1%	
Erfa	1-5%	0	1%	

Table 21 2013 Current Key Area #3 North Pasture

Loamy Upland, Gravelly 10-14" p.z., Mid Seral (41% of PNC)

Key Area and Plant Species	Current Composition	Allowable Site Guide Composition	Current Score
Key Area #3: Loamy Upland, Gravelly 10-14" p.z.			
Last monitoring data collected in 2010			
Shrubs		10%	6
Artemisia tridentata	3%	30%	
Gutierrezia sarothrae	4%	3%	
Aristida longiseta	5%	5%	5
Bouteloua gracilis	34%	10%	10
Muhlenbergia torreyi	1%	5%	1
Achnatherum hymenoides	1%	15%	1
Elymus elymoides ssp. elymoides	30%	10%	10
Sprorobolus cryptandrus	1%	5%	1
Hesperostipa comata ssp. comata	2%	24%	2
Forbs		5%	5
Castilleja	1%	2%	
Delphinium bicolor	2%	2%	
Eriogonum alatum	1%	2%	
Lesquerella arizonica	2%	2%	
Linum lewisii	3%	2%	
Penstemon thompsoniae	2%	2%	
Phlox longifolia	2%	2%	
Sphaeralcea	6%	2%	
Perennial forbs		2%	
Aster arenosus	2%		
Score: 41% Similar to PNC (or PNC)			

Table 22 2007 Assessment Key Area #4 Salt House Pasture

Loamy Upland, Gravelly 10-14" p.z., Late seral (70% of PNC)

Had the 2007 Assessment analyzed this key area as a Loamy Upland 13 – 17" p.z. it would have scored an 81% similarity to PNC.

Key Area #4 Plant Spp	Site Guide Allowable Composition	No Prior Composition	2005 Composition	Desired Composition Objective
Grasses				
Bogr2*	15-20%		19%	15-20%
Sihy*	5-10%		5%	5-10%
Kocr*	1-5%		9%	2-8%
Agsm	5-20%		T	1-5%
Pofe	5-10%		T	1-5%
Forbs				
Hyfi			T	
Calochortus			T	
Phlo2			4%	
AAFF	1-5%		2%	1-5%
Senecio			2%	
PPFF	1-5%		1%	1-5%
Eriogonum			T	
Shrubs				
Gusa	5-10%		17%	
Artr	5-30%		36%	5-30%
Juos	5-10%		5%	5-10%

Table 23 2013 Current Key Area #4 Salt House Pasture

Loamy Upland 13-17" p.z., PNC (81% of PNC)

Key Area and Plant Species	Current Composition	Allowable Site Guide Composition	Current Score
Key Area #4: Loamy Upland 13-17" p.z.,			
Last monitoring data collected in 2010			
Artemisia tridentata	38%	33%	33
Gutierrezia sarothrae	6%	3%	3
Juniperus osteosperma	2%	3%	2
Bouteloua gracilis	28%	24%	24

Elymus elymoides ssp. elymoides	4%	12%	4
Agropyron smithii	2%	18%	2
Other perennial grasses			
Koeleria cristata	7%	6%	6
Sprorobolus cryptandrus	1%	6%	1
Other annual and perennial forbs		6%	6
Calochortus	1%		
Eriogonum racemosum	1%		
Euphorbia brachycera	4%		
Lomatium	1%		
Penstemon thompsoniae	1%		
Phlox longifolia	2%		
Sphaeralcea	1%		
Gilia multiflora	1%		
Hymenoxys cooperi	2%		
Score: 81% Similar to PNC (or PNC)			

Table 24 2007 Assessment Key Area #5 Savanic Pasture

Shallow sandy Loam, Calcareous 10-14" p.z., Late seral (57% of PNC)

Key Area #5 Plant Spp	Site Guide Allowable Composition	No Prior Composition	2005 Composition	Desired Composition Objective
Grasses				
Boer*	0%		11%	7-15%
Hiri	0-5%		4%	1-5%
Sihy*	0-5%		1%	1-5%
Stco*	0%		T	1-2%
Spcr*	0%		T	1-2%
AAGG	0-5%		2%	
Forbs				
Bamu			1%	
Penstamon			11%	
AAFF	1-5%		1%	1-5%
PPFF	1-5%		5%	1-5%
Gaura			3%	
Eriogonum			21%	
Shrubs				
Atca	0%		1%	1-3%
Chvi8	0-3%		1%	1-3%
Cora	30-60%		11%	
Epne	3-8%		T	1-5%
Gusa	2-5%		4%	

Juos	0-15%		9%	0-15%
Lyan	0-4%		6%	
Opuntia	0-3%		T	
Erfa	0-3%		5%	
Prfa	0-3%		1%	
Yuba	3-7%		2%	

Table 25 2013 Current Key Area #5 Savanic Pasture

Shallow Sandy Loam, Calcareous 10-14" p.z., Mid Seral (36% of PNC)

Key Area and Plant Species	Current Composition	Allowable Site Guide Composition	Current Score
Key Area #5: Shallow Sandy Loam, Calcareous 10-14" p.z			
Last monitoring data collected in 2010			
Coleogyne ramosissima	10%	65%	10
Ephedra nevadensis	1%	5%	1
Juniperus osteosperma	19%	6%	6
Other shrubs		8%	8
Gutierrezia sarothrae	7%		
Eriogonum leptophyllum	5%		
Opuntia – Cholla	2%		
Lycium andersonii	8%		
Pleuraphis rigida	2%	1%	1
Achnatherum hymenoides	1%	1%	1
Sprorobolus cryptandrus	1%	1%	1
Elymus elymoides ssp. elymoides	2%	1%	1
Other perennial forbs			
Aster arenosus	1%	2%	1
Baileya multiradiata	4%	2%	2
Other annual forbs			
Pectis palmeri	13%	2%	2
Stephanomeria exigua	14%	2%	2
Score: 36% Similar to PNC (or PNC)			

Issues brought out in scoping.

1. Issues relating to Rangeland Health

a. Lack of good ground cover along the West Fork Parashant Wash and gully cutting of some of its tributaries, at the south end of the allotment.

b. Vegetative diversity, lack of understory in north part of Salt House pasture.

c. Weeds in the proximity of Log Spring

d. Dewatered Upper Pigeon Spring

Information and/or Data Pertaining to Issues

1. Issues relating to Rangeland Health

a. Lack of good ground cover along the West Fork Parashant Wash and gully cutting of some of its tributaries, at the south end of the allotment.

The surrounding woody dominated uplands (approximately 2,000 acres) have rendered this area in general at risk. As the woody species (mainly juniper and pinyon) have increased on the upland sites, the understory species have decreased. This decrease in understory species includes sagebrush, cliffrose, and desert holly which are typically fairly aggressive species. As these understory species give way to the more dominate, aggressive woody species, bare interspaces become larger, water moves off the site and soil movement begins taking place. This soil movement results in small rills and gully cutting.

Conclusion: The ecological status and functionality of this area is not a new issue specific to this allotment evaluation. This issue was scoped and addressed during the development of the Parashant Interdisciplinary Management Plan (1997). From that planning effort, a 1,000 acre project was proposed (Salt House Pinyon-Juniper Removal Project) and an environmental assessment prepared to help address this issue. Passage of time and monument designation has not diminished the need for treatment in the area, in fact, the project area should be expanded. To fully realize the projected benefits to ecological diversity, watershed function, and wildlife habitat restoration, the project should be carried forward as a viable project for future consideration. This project has been identified as an action in BLM's five year fuels reduction plan which would be implemented as a multi-discipline project.

2013: The issue of vegetative diversity, lack of understory in this area has not been resolved. Despite the completion of NEPA documentation the project has not been implemented.

b. Vegetative diversity, lack of understory in north part of Salt House pasture.

This issue mirrors issue (a) above and is also the result of those upland acres being dominated by pinyon-juniper species. This seems to be a common occurrence and is not isolated to this allotment.

Conclusion: The vegetative diversity issue in north Salt House pasture is addressed above in (a), as the issues are consistent with one another. The Salt House pasture is located within the West Fork of the Parashant drainage and would be addressed with implementing the 1,000 acre project proposed in the Parashant Interdisciplinary Management Plan (1997).

2013: The issue of vegetative diversity, lack of understory in this area has not been resolved. Despite the completion of NEPA documentation the project has not been implemented.

c. Weeds in the proximity of Log Spring

Scotch thistle has been discovered in the proximity of Log Spring. The infested area is less than ½ acre.

Conclusion: Noxious weeds issues are taken very seriously, and this one in proximity to Log Spring is no different. Past, present, and future efforts to eradicate this weed will continue. Inventory and treatment of weed areas are on-going and occur at least annually or more frequent if necessary.

Weeds near Log Spring have been treated with herbicide and hand tools since 1995. The infested area continues to decrease in size. On going efforts to eradicate the weeds will continue to prevent further spread.

2013: The area continues to be monitored and treated as necessary. No noxious weeds have been detected since 2009.

d. Dewatered Upper Pigeon Spring

Upper Pigeon Spring is one of the base waters for the Wildcat allotment and was first developed in the late 1940's. The current permittee has not used water from the spring for over 20 years. A seep defines the water source much more accurately than a spring. Upper pigeon has long been a maintenance problem, and requires routine clean out so water collects in large enough volume to be moved into a trough. If the seep is not cleaned out and collected in some type system, water disappears underground and is dispersed throughout the fractured

limestone stratum, and is thus dewatering itself through natural processes and not by the current livestock operation. Upper pigeon is not a free flowing water source that produces pools or supports abundant riparian habitat.

Conclusion: During the allotments field visit, this issue evolved from a dewatered spring source to an issue of a seep needing maintenance so that water could remain at the source and not go underground. Arizona Game and Fish Department (AGFD) expressed interest in cooperating with the permittee to re-work the seep so water might be more available to wildlife using the area. The permittee was amenable to the proposal and had no problems with leaving water at the source. The permittee cautioned AGFD of the maintenance problems of the seep and did not want that to become his responsibility. Because Upper Pigeon Spring has base water status, AGFD and the permittee will explore options for remedy and work together for future solutions.

2013: A remedy to this issue has yet to be resolved.

Desired Plant Community Objectives developed during the 2007 assessment

Key Area #1 – Bench pasture (Shallow Upland, Calcarious 10-14" p.z.)

Maintain perennial grass composition between 12-30% through 2030 by,
2010 data – 13%
Maintaining ORHY, CBW at between 2-7%
2010 data – 11%
Maintaining SIHY, CBW at between 1-5%
2010 data – 1%
Maintaining other perennial grasses, CBW at between 1-5%
2010 data - 1%
Maintain COME, CBW at between 1-3%
2010 data – 1%
Maintain EPNE, CBW at between 3-5%
2010 data – 1%
Maintain shrubs CBW to between 30-45% by 2030.
2010 data – 55%
Maintain forb CBW at between 5-10% through 2030.
2010 data – 33%
Maintain ground litter at between 25 and 40% through 2030.
2010 data – 40%
Maintain basal cover at between 2 and 10% through 2030.
2010 data - .5%

These objectives are partially met. The ecological condition is 17% similar to PNC, which is early seral. Present CBW for key species is as follows: Orhy is 11%, Sihy is 1%, Come is 1%, and Epne is 1%.

By functional group, CBW for shrubs is at 57%, CBW for perennial grasses is at 13%, CBW for trees is at 0% and CBW for forbs are at 33%. Basal cover is at .5%.

Key Area #2 – Upper Pigion pasture (Shallow Loamy 10-14" p.z.)

Maintain perennial grass composition between 35-65% through 2030 by,
2010 data – 70%
Maintaining ORHY, CBW at between 1-5%
2010 data – 1%
Maintaining SIHY, CBW at between 5-10%
2010 data – 1%
Maintaining BOGR, CBW at between 30-60%
2010 data – 59%
Maintaining SPCR, CBW at between 1-5%
2010 data – 8%
Maintaining other perennial grasses, CBW at between 1-5%
2010 data – 1%
Maintain shrubs CBW to between 25-45% by 2030.
2010 data – 24%
Maintain forb CBW at between 5-10% through 2030.
2010 data – 10%
Maintain ground litter at between 15 and 30% through 2030.
2010 data – 43%
Maintain basal cover at between 2 and 10% through 2030.
2010 data – 2%

These objectives are partially met. The ecological condition is 53% similar to PNC, which is late seral. Present CBW for key species is as follows: Orhy is 1%, Sihy is 1%, Bogr is 59%, and Spcr is 8%.

By functional group, CBW for shrubs is at 26%, CBW for perennial grasses is at 70%, CBW for trees is at 2% and CBW for forbs are at 10%. Basal cover is at 2%.

2013 Current: Upon further analysis, it has been determined that the Loamy Upland, Gravelly 10 – 14" ecological site is more accurate for key area #2 instead of Shallow Loam 10 – 14". The 2007 land health assessment established DPC objectives based on the Shallow Loamy 10 – 14" site. Below are the new DPC objectives for key area #2 based on the Loamy Upland, Gravelly 10 – 14" site.

Key Area #2 – Upper Pigeon Pasture
Ecological Site: Loamy Upland, Gravelly 10-14" p.z.

- Maintain total ground cover above 15%.
- Maintain native perennial grass (includes *Pleuraphis jamesii, Hesperostipa neomexicana, Hesperostipa comata ssp. comata, Elymus elymoides ssp. elymoides, Bouteloua gracilis, Achnatherum hymenoides and* other perennial grasses) to between 58-100% CBW.
- Maintain total shrub composition to 5 – 10 % CBW (includes *Artemisia tridentata ssp. wyomingensis, Atriplex confertifolia, Gutierrezia sarothrae, Krascheninnikovia lanata, Opuntia polyacantha* and other shrubs).
- Maintain forb composition to between 2 – 4% CBW (excludes non-native invasive species).
- Increase tree composition to 5 – 10% CBW.

Rationale for the above objectives: These objectives are set according to the ecological site guide and current composition of the site. Maintaining ground cover at the desired levels at the key area will support stable soil conditions. Achieving the desired composition of shrub, perennial grass and forb species will ensure perennial forage for wildlife and livestock. The current functional groups of plants provide habitat for wildlife species in the area.

Key Area #3 – North pasture (Shallow Loamy 10-14" p.z.)

Maintain perennial grass composition between 30-55% through 2030 by,
2010 data – 74%
Maintaining BOGR, CBW at between 30-45%
2010 data – 34%
Maintaining ORHY, CBW at between 2-6%
2010 data – 1%
Maintaining SIHY, CBW at between 5-10%
2010 data – 30%
Maintaining STCO, CBW at between 1-5%
2010 data – 2%
Maintaining other perennial grasses, CBW at between 1-5%
2010 data – 7%
Maintain shrubs CBW to between 30-50% by 2030.
2010 data – 7%
Maintain forb CBW at between 5-10% through 2030.
2010 data – 21%
Maintain ground litter at between 20 and 35% through 2030.
2010 data – 35%
Maintain basal cover at between 5 and 10% through 2030.
2010 data – 14%

These objectives are partially met. The ecological condition is 62% similar to PNC, which is late seral. Present CBW for key species is as follows: Bogr is 34%, Orhy is 1%, Sihy is 30%, and Stco is 2%.

By functional group, CBW for shrubs is at 7%, CBW for perennial grasses is at 74%, CBW for trees is at 0% and CBW for forbs are at 21%. Basal cover is at 14%.

2013 Current: Upon further analysis, it has been determined that the Loamy Upland, Gravelly 10 – 14" ecological site is more accurate for key area #3 instead of Shallow Loam 10 – 14". The 2007 land health assessment established DPC objectives based on the Shallow Loamy 10 – 14" site. Below are the new DPC objectives for key area #3 based on the Loamy Upland, Gravelly 10 – 14" site.

Key Area #3 – North Pasture
Ecological Site: Loamy Upland, Gravelly 10-14" p.z.

- Maintain total ground cover above 15%.
- Maintain native perennial grass (includes *Pleuraphis jamesii, Hesperostipa neomexicana, Hesperostipa comata ssp. comata, Elymus elymoides ssp. elymoides, Bouteloua gracilis, Achnatherum hymenoides and* other perennial grasses) to between 58-100% CBW.
- Maintain total shrub composition to 5 – 10 % CBW (includes *Artemisia tridentata ssp. wyomingensis, Atriplex confertifolia, Gutierrezia sarothrae, Krascheninnikovia lanata, Opuntia polyacantha* and other shrubs).
- Maintain forb composition to between 2 – 4% CBW (excludes non-native invasive species).
- Increase tree composition to 5 – 10% CBW.

Rationale for the above objectives: These objectives are set according to the ecological site guide and current composition of the site. Maintaining ground cover at the desired levels at the key area will support stable soil conditions. Achieving the desired composition of shrub, perennial grass and forb species will ensure perennial forage for wildlife and livestock. The current functional groups of plants provide habitat for wildlife species in the area.

Key Area #4 – Salt House pasture (Loamy Upland, 13-17" p.z.)

Maintain perennial grass composition between 30-45% through 2030 by,
2010 data – 42%
Maintaining BOGR, CBW at between 15-20%
2010 data – 28%
Maintaining SIHY, CBW at between 5-10%
2010 data – 4%
Maintaining KOCR, CBW at between 2-8%
2010 data – 7%
Maintaining other perennial grasses, CBW at between 1-5%
2010 data – 3%
Maintain shrubs CBW to between 30-50% by 2030.

2010 data – 44%

Maintain trees CBW to between 5-10% by 2030.

2010 data – 2%

Maintain forb CBW at between 5-10% through 2030.

2010 data – 11%

Maintain ground litter at between 25 and 35% through 2030.

2010 data – 39%

Maintain basal cover at between 5 and 10% through 2030.

2010 data – 3%

These objectives are partially met. The ecological condition is 81% similar to PNC, which is PNC. Present CBW for key species is as follows: Bogr is 28%, Sihy is 4%, and Kocr is 7%.

By functional group, CBW for shrubs is at 44%, CBW for perennial grasses is at 42%, CBW for trees is at 2% and CBW for forbs are at 11%. Basal cover is at 3%.

2013 Current: Upon further analysis, it has been determined that the Loamy Upland 13 – 17" ecological site is more accurate for key area #4 instead of Loamy Upland, Gravelly 10 – 14". The 2007 land health assessment established DPC objectives based on the Loamy Upland, Gravelly 10 – 14" site. Below are the new DPC objectives for key area #4 based on the Loamy Upland 13 – 17" site.

Key Area #4 – Salt House Pasture
Ecological Site: Loamy Upland 13-17" p.z.

- Maintain total ground cover above 15%.
- Maintain native perennial grass (includes *Poa fendleriana, Pleuraphis jamesii, Pascopyrum smithii, Hesperostipa comata ssp. comata, Elymus elymoides ssp. elymoides, Bouteloua gracilis, Achnatherum hymenoides and* other perennial grasses) to between 39-83% CBW.
- Maintain total shrub composition to 13 – 50 % CBW (includes *Artemisia tridentata ssp. vaseyana, Artemisia tridentata ssp. wyomingensis, Atriplex canescens, Gutierrezia sarothrae, Krascheninnikovia lanata,* and other shrubs).
- Maintain forb composition to between 1 – 6% CBW (excludes non-native invasive species).
- Maintain tree composition to 0 – 5% CBW.

Rationale for the above objectives: These objectives are set according to the ecological site guide and current composition of the site. Maintaining ground cover at the desired levels at the key area will support stable soil conditions. Achieving the desired composition of shrub, perennial grass and forb species will

ensure perennial forage for wildlife and livestock. The current functional groups of plants provide habitat for wildlife species in the area.

Monitoring data suggests achievement of these DPC objectives is attainable and within the potential of the site.

Key Area #5 – Savanic pasture (Shallow Sandy Loam, Calcarious 10-14" p.z.)

Maintain perennial grass composition between 5-20% through 2030 by,
2010 data – 6%
Maintaining BOER, CBW at between 7-15%
2010 data – 0%
Maintaining HIRI, CBW at between 1-5%
2010 data – 2%
Maintaining SIHY, CBW at between 1-3%
2010 data – 2%
Maintaining other perennial grasses, CBW at between 1-5%
2010 data – 2%
Maintain shrubs CBW to between 35-65% by 2030.
2010 data – 32%
Maintain trees CBW to between 5-10% by 2030.
2010 data – 19%
Maintain forb CBW at between 5-10% through 2030.
2010 data – 42%
Maintain ground litter at between 15 and 30% through 2030.
2010 data – 36%
Maintain basal cover at between 2 and 8% through 2030.
2010 data – 0%

These objectives are partially met. The ecological condition is 36% similar to PNC, which is mid seral. Present CBW for key species is as follows: Boer is 0%, Hiri is 2%, and Sihy is 2%.

By functional group, CBW for shrubs is at 32%, CBW for perennial grasses is at 6%, CBW for trees is at 19% and CBW for forbs are at 42%. Basal cover is at 0%.

The following is added for conclusions relative to implementation of the Standards for Rangeland Health and Guidelines for Grazing Administration

Based on the analyses and supporting documentation referenced herein, resource conditions on the allotment:

[ ] Meet all applicable standards for rangeland health
[X] Are making significant progress toward meeting the applicable standards

for rangeland health

[ ] Do not meet the standards for rangeland health for:
- [ ] No. 1: Upland sites
- [ ] No. 2: Riparian-Wetland sites
- [ ] No. 3: Desired Resource Conditions

[ ] Have not been sufficiently documented to make a specific determination, but there is no reason to believe that current management would preclude meeting the standards for rangeland health.

VI. Recommendations

A. Renew the ten year grazing permit on the Wildcat allotment with current terms and conditions of that permit.

B. Carry forward as a priority project the Salt House Pinyon-Juniper Removal treatment project to restore vegetation diversity, ground cover abundance, and assist in watershed functionality in the West Fork of Parashant drainage. This project along with others should be dove-tailed to existing planning and a future watershed treatment plan.

C. Continue using the herbicide Tebuthiuron "Spike 20P" as a tool to reduce the composition of sagebrush or other woody species in identified treatment areas to meet desired plant community objectives.

D. Allow AGFD and the livestock permittee to go forward with developing maintenance solutions of Upper Pigeon Spring.

E. Continue to treat any noxious weeds found on the allotment.

AUTHORIZED OFFICER CONCURRENCE:

X I concur with the conclusions and recommendations as written.

_____ I do not concur.

_____ I concur, with the following modifications:

Ronald D. McDaniel
Monument Manager
Grand Canyon-Parashant National Monument

4/10/2013
Date

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Appendix A
Precipitation Data

Historical Precipitation Report

Field Office 300 **Salt House Precipitation Rain Gauge** **Rain Gauge Number:** 13

Seasonal Precipitation Amounts						Annual Average					Percent of Normal				
Year	Fall	Winter	Spring	Summer	Annual	Fall	Winter	Spring	Summer	Annual	Fall	Winter	Spring	Summer	Annual
1978	2.36	10.00	4.91	2.70	19.97	2.59	6.63	3.50	5.45	18.16	91%	151%	140%	50%	110%
1979	6.50	8.00	2.57	7.13	24.20	2.59	6.63	3.50	5.45	18.16	251%	121%	73%	131%	133%
1980	0.16	11.25	7.00	4.84	23.25	2.59	6.63	3.50	5.45	18.16	6%	170%	200%	89%	128%
1981	1.35	3.70	4.26	5.51	14.82	2.59	6.63	3.50	5.45	18.16	52%	56%	122%	101%	82%
1982	1.18	5.53	6.86	12.02	25.59	2.59	6.63	3.50	5.45	18.16	46%	83%	196%	221%	141%
1983	6.18	9.39	5.14	3.92	24.63	2.59	6.63	3.50	5.45	18.16	239%	142%	147%	72%	136%
1984	2.57	3.86	0.95	12.41	19.79	2.59	6.63	3.50	5.45	18.16	99%	58%	27%	228%	109%
1985	2.33	8.55	2.18	2.36	15.42	2.59	6.63	3.50	5.45	18.16	90%	129%	62%	43%	85%
1986	4.58	3.09	5.93	5.92	19.52	2.59	6.63	3.50	5.45	18.16	177%	47%	170%	109%	107%
1987	2.16	6.15	4.20	5.95	18.46	2.59	6.63	3.50	5.45	18.16	84%	93%	120%	109%	102%
1988	6.71	3.50	5.50	3.65	19.36	2.59	6.63	3.50	5.45	18.16	259%	53%	157%	67%	107%
1989	0.95	5.79	2.17	1.63	10.54	2.59	6.63	3.50	5.45	18.16	37%	87%	62%	30%	58%
1990	0.68	5.44	4.33	11.28	21.73	2.59	6.63	3.50	5.45	18.16	26%	82%	124%	207%	120%
1991	1.24	6.97	3.09	5.14	16.44	2.59	6.63	3.50	5.45	18.16	48%	105%	88%	94%	91%
1992	1.95	7.60	8.11	3.64	21.30	2.59	6.63	3.50	5.45	18.16	75%	115%	232%	67%	117%
1993	4.00	17.06	3.84	6.50	31.40	2.59	6.63	3.50	5.45	18.16	155%	257%	110%	119%	173%
1994	3.94	5.48	3.08	15.75	28.25	2.59	6.63	3.50	5.45	18.16	152%	83%	88%	289%	156%
1995	3.46	8.62	7.98	4.65	24.71	2.59	6.63	3.50	5.45	18.16	134%	130%	228%	85%	136%
1996	0.38	6.12	1.37	5.38	13.25	2.59	6.63	3.50	5.45	18.16	15%	92%	39%	99%	73%
1997	3.30	7.45	0.25	8.00	19.00	2.59	6.63	3.50	5.45	18.16	128%	112%	7%	147%	105%
1998	1.63	7.87	4.25	5.75	19.50	2.59	6.63	3.50	5.45	18.16	63%	119%	121%	106%	107%
1999	2.01	0.99	2.87	10.00	15.87	2.59	6.63	3.50	5.45	18.16	78%	15%	82%	184%	87%
2000	0.88	4.00	0.88	0.26	6.02	2.59	6.63	3.50	5.45	18.16	34%	60%	25%	5%	33%
2001	3.78	7.12	4.20	0.93	16.03	2.59	6.63	3.50	5.45	18.16	146%	107%	120%	17%	88%
2002	1.44	1.25	0.50	2.56	5.75	2.59	6.63	3.50	5.45	18.16	56%	19%	14%	47%	32%
2003	2.13	5.00	4.62	5.38	17.13	2.59	6.63	3.50	5.45	18.16	82%	75%	132%	99%	94%
2004	1.43	6.82	1.06	4.19	13.50	2.59	6.63	3.50	5.45	18.16	55%	103%	30%	77%	74%
2005	9.35	13.49	4.00	2.63	29.47	2.59	6.63	3.50	5.45	18.16	362%	204%	114%	48%	162%
2006	1.38	0.93	5.56	3.44	11.31	2.59	6.63	3.50	5.45	18.16	53%	14%	159%	63%	62%
2007	2.00	2.12	0.69	8.12	12.93	2.59	6.63	3.50	5.45	18.16	77%	32%	20%	149%	71%
2008	0.37	12.33	0.67	6.88	20.25	2.59	6.63	3.50	5.45	18.16	14%	186%	19%	126%	112%
2009	2.12	7.38	1.25	2.25	13.00	2.59	6.63	3.50	5.45	18.16	82%	111%	36%	41%	72%
2010	0.34	7.00	2.60	0.94	10.88	2.59	6.63	3.50	5.45	18.16	13%	106%	74%	17%	60%
2011	4.50	8.85	3.83	2.33	19.50	2.59	6.63	3.50	5.45	18.16	174%	134%	109%	43%	107%
2012	3.00	3.25	1.75	6.68	14.68	2.59	6.63	3.50	5.45	18.16	116%	49%	50%	123%	81%
2013	0.75					2.59	6.63	3.50	5.45	18.16	29%				

Historical Precipitation Report

Field Office 300 **Poverty Precipitation Rain Gauge** **Rain Gauge Number:** 12

Seasonal Precipitation Amounts						Annual Average					Percent of Normal				
Year	Fall	Winter	Spring	Summer	Annual	Fall	Winter	Spring	Summer	Annual	Fall	Winter	Spring	Summer	Annual
1978	1.85	10.00	3.68	1.76	17.29	2.28	5.59	2.74	4.69	15.30	81%	179%	134%	38%	113%
1979	4.76	8.00	2.57	4.78	20.11	2.28	5.59	2.74	4.69	15.30	209%	143%	94%	102%	131%
1980	2.02	6.44	2.57	5.17	16.20	2.28	5.59	2.74	4.69	15.30	89%	115%	94%	110%	106%
1981	1.45	2.37	4.72	6.18	14.72	2.28	5.59	2.74	4.69	15.30	64%	42%	172%	132%	96%
1982	1.35	5.40	5.25	8.60	20.60	2.28	5.59	2.74	4.69	15.30	59%	97%	191%	183%	135%
1983	4.78	5.50	4.20	4.81	19.29	2.28	5.59	2.74	4.69	15.30	210%	98%	153%	103%	126%
1984	3.13	4.76	0.80	6.60	15.29	2.28	5.59	2.74	4.69	15.30	137%	85%	29%	141%	100%
1985	2.14	8.37	1.72	3.75	15.98	2.28	5.59	2.74	4.69	15.30	94%	150%	63%	80%	104%
1986	4.50	2.06	3.50	4.77	14.83	2.28	5.59	2.74	4.69	15.30	197%	37%	128%	102%	97%
1987	1.85	5.66	3.00	3.42	13.93	2.28	5.59	2.74	4.69	15.30	81%	101%	109%	73%	91%
1988	4.33	2.66	3.50	4.45	14.94	2.28	5.59	2.74	4.69	15.30	190%	48%	128%	95%	98%
1989	0.97	5.68	1.79	2.37	10.81	2.28	5.59	2.74	4.69	15.30	43%	102%	65%	51%	71%
1990	0.50	3.59	2.63	6.56	13.28	2.28	5.59	2.74	4.69	15.30	22%	64%	96%	140%	87%
1991	1.50	5.25	1.50	4.30	12.55	2.28	5.59	2.74	4.69	15.30	66%	94%	55%	92%	82%
1992	1.18	4.90	5.64	4.94	16.66	2.28	5.59	2.74	4.69	15.30	52%	88%	206%	105%	109%
1993	3.80	11.45	3.21	5.25	23.71	2.28	5.59	2.74	4.69	15.30	167%	205%	117%	112%	155%
1994	2.88	4.40	2.47	2.00	11.75	2.28	5.59	2.74	4.69	15.30	126%	79%	90%	43%	77%
1995	2.56	10.88	5.31	3.75	22.50	2.28	5.59	2.74	4.69	15.30	112%	195%	194%	80%	147%
1996	0.05	5.95	1.00	3.50	10.50	2.28	5.59	2.74	4.69	15.30	2%	106%	36%	75%	69%
1997	2.75	5.25	1.50	8.88	18.38	2.28	5.59	2.74	4.69	15.30	121%	94%	55%	189%	120%
1998	1.63	7.74	2.38	6.50	18.25	2.28	5.59	2.74	4.69	15.30	71%	138%	87%	139%	119%
1999	2.85	1.90	3.25	6.75	14.75	2.28	5.59	2.74	4.69	15.30	125%	34%	119%	144%	96%
2000	0.25	3.50	0.63	10.50	14.88	2.28	5.59	2.74	4.69	15.30	11%	63%	23%	224%	97%
2001	3.62	5.12	4.63	1.25	14.62	2.28	5.59	2.74	4.69	15.30	159%	92%	169%	27%	96%
2002	0.62	2.00	0.76	2.12	5.50	2.28	5.59	2.74	4.69	15.30	27%	36%	28%	45%	36%
2003	2.44	4.25	3.56	4.56	14.81	2.28	5.59	2.74	4.69	15.30	107%	76%	130%	97%	97%
2004	1.00	4.00	1.25	4.56	10.81	2.28	5.59	2.74	4.69	15.30	44%	72%	46%	97%	71%
2005	9.25	11.22	3.79	2.13	26.39	2.28	5.59	2.74	4.69	15.30	406%	201%	138%	45%	172%
2006	1.63	1.05	5.07	3.37	11.12	2.28	5.59	2.74	4.69	15.30	71%	19%	185%	72%	73%
2007	1.19	2.62	0.87	7.32	12.00	2.28	5.59	2.74	4.69	15.30	52%	47%	32%	156%	78%
2008	0.25	9.82	1.05	4.25	15.37	2.28	5.59	2.74	4.69	15.30	11%	176%	38%	91%	100%
2009	2.37	5.88	1.25	2.56	12.06	2.28	5.59	2.74	4.69	15.30	104%	105%	46%	55%	79%
2010	0.34	6.87	2.54	1.75	11.50	2.28	5.59	2.74	4.69	15.30	15%	123%	93%	37%	75%
2011	3.75	7.75	3.00	2.00	16.50	2.28	5.59	2.74	4.69	15.30	164%	139%	109%	43%	108%
2012	2.00	3.38	1.38	8.75	15.50	2.28	5.59	2.74	4.69	15.30	88%	60%	50%	186%	101%
2013	0.56					2.28	5.59	2.74	4.69	15.30	25%				

Standards for Rangeland Health and Guidelines for Grazing Administration
Implementation Project: Allotment Assessment
Wildcat - 4854

I. Introduction

The Wildcat Allotment Assessment was conducted in accordance with directions set forth in the Washington Office Instruction Memorandum No. 98-91 and Arizona State Instruction Memorandum No. 99-012 for implementation of Standards for Rangeland Health and Guidelines for Grazing Administration (Standards and Guides).

The purpose of Standards and Guides is to insure the health of public rangelands. These standards help the Bureau of Land Management (BLM), rangeland users, and interested members of the public achieve a common understanding of acceptable resource conditions, and work together to implement that vision (see appendices for a copy of the Standards and Guidelines).

Arizona's Standards and Guides were developed by the BLM State Standards and Guides Team and the Arizona Resource Advisory Council (RAC), a state level council appointed by the Secretary of the Interior.

The Secretary of the Interior approved the Standards and Guides in April 1997. The Decision Record, signed by the BLM State Director (April 1997) provides for full implementation of the Standards and Guides in all Arizona Land Use Plans.

This assessment was conducted by an interdisciplinary assessment team (IAT) of resource specialists from:

- BLM.
- Natural Resource Conservation Service (NRCS).
- Arizona Game and Fish Department (AGFD).
- Mohave County Extension.

The IAT was assisted by the Rangeland Resource Team (RRT), a diverse group of local residents formed and appointed under the RAC charter (see appendices for a list of members on both teams). The RRT may provide informal advice to the BLM Field Manager regarding implementation of Standards and Guides, and "will have opportunities to raise any matter of concern with the resource advisory council and ... to provide information and options to the council for their consideration" as provided for by regulations at 43 CFR 1784.6-2(a)(2)(iv)(A).

The BLM/RAC Implementation Strategy for Arizona states that the RRT's primary role is to assist BLM managers in assuring the S&G's are consistently applied and technically sound. The IAT analyzed all available information in cooperation with the RRT. Based on field observations, team members determined whether rangeland conditions were meeting, progressing toward meeting, or not meeting the Standards for Rangeland Health.

The RRT, IAT, permittees and other interested parties were invited to attend an issue scoping meeting on October 27, 2004, and a field visit on July 6, 2005. In cases where standards were not being met, the group identified which resource uses needed to be addressed, and teams presented recommendations to improve resource conditions.

After consultation with interested persons, permittees, and the IAT, the Authorized Officer will select the appropriate actions. The selected management actions will be analyzed through the National Environmental Policy Act (NEPA) process and a proposed decision will be issued.

II. Grazing Use

A. Total grazing privileges

Livestock Numbers	Season Of Use	% Federal	Active AUMs
447 Cattle	12/01-11/30	84%	4,512
8 Horses	12/01-11/30	84%	81

B. Season(s) of use

447 cattle from December 1st to November 30th
8 Horses from December 1st to November 30th

C. Kind and class of livestock

Cow/Calf Operation

D. Percent federal range

The Wildcat allotment is 84% federal range. The private and state lands within the allotment boundaries are grazed in conjunction with federal lands and are part of the Allotment Management Plan (AMP) grazing rotation.

III. Allotment Profile

A. Description

The Wildcat allotment is located approximately 70 miles south of St. George, Utah on the Arizona Strip. The allotment is within the boundaries of T. 32, 33, and 34 N., R. 12, 13, and 14 on the Shivwits Plateau. Elevations range from 4,430' in the desert shrub land on Grand Gulch Bench to 5,930' on the pinyon-juniper ridges of the plateau.

B. Acreage

The allotment contains:

- 89,041 acres of federal land
- 680 acres of state land
- 5,341 acres of private land

C. Objectives

1. Land Use Plan Objectives

Shivwits Resource Area Implementation Plan for the Arizona Strip Resource Management Plan

GZ17- Allowable use on key forage species is 50 percent of current years growth on allotments with rotational grazing systems.

WS01- Manage vegetation cover towards ecological stability and sound long-term protective soil cover using mechanical, biological or fire as tools for accomplishment.

WS22 - Manage watershed areas according to watershed categorizations to achieve identified objectives.

RR06 - Implement actions to restore and/or maintain natural conditions or appearance in all areas.

RR08 - Manage the majority of the resource area for extensive recreation while maintaining its naturalness/remoteness. The exception to this is the Cedar Pockets Campground.

RR09 - Commercial recreation permits would be issued to the extent that their cumulative impacts are consistent with the overall objectives of this plan and in the public interest.

TE01 -Manage areas consistent with multiple uses to conserve candidate species and their habitats and ensure that actions authorized, funded, or carried out do not contribute to the need to list any of these species as threatened or endangered. Adverse impacts to listed species will be avoided.

WL02 Maintain productive wildlife habitat and ensure wildlife needs and considerations are incorporated into land use planning, National Environmental Policy Act documents, and management decisions.

WL06 In cooperation with Arizona Game and Fish Department, continue restoration of native wildlife into their historic ranges by supporting and assisting in the releases of native species.

WL07 Manage wildlife habitat through the Habitat Management Plan process to achieve desired plant community objectives.

WL16 Complete ecological site inventories in key areas to determine site potentials and present ecological conditions; establish desired plant community objectives for various areas and include these objectives in Allotment Management Plans, Habitat Management Plans, watershed plans, and other plans in order to prescribe management or improvement practices to achieve these objectives.

2. Specific Resource Objectives

California Condor Recovery Plan Objectives (April, 1996)

CC-1 Provide foraging habitat for California condors.

CC-2 Maintain a healthy, self-sustaining population of California condors with a positive growth rate of at least 150 individuals with at least 15 breeding pairs.

Bald Eagle[1]

BE-1 The wintering population of bald eagles would be recovered and delisted.

BE-2 Restrict authorized and/or permitted activities within 0.5 miles of active bald eagle wintering roosts.

Mule Deer[a]

MD-1. Self-sustaining mule deer populations would be enhanced or maintained in Game Management Units 12B, 13A, and 13B. Initial or supplemental transplants could be authorized on a case by case basis. Existing habitat areas could be expanded and new habitat areas may be added where appropriate.

MD-2. Crucial summer mule deer habitat would be managed for at least 10% grasses and forbs and 30% palatable browse species CBW, where consistent with site potential. Crucial winter mule deer habitat would be managed to include at least 30% palatable browse species, where consistent with site potential. Palatable browse species would be maintained and enhanced through vegetation conversion. Palatable browse species could include, but are not limited to cliffrose, bitterbrush, ceanothus, four-wing saltbush, desert holly, Mormon tea, and mountain mahogany.

[1] The Arizona Strip BLM is currently in the process of developing a new resource management plan (RMP). These objectives are part of the draft RMP and were derived from recovery plans, conservation strategies, and other applicable documents. These objectives are subject to change pending completion of the RMP process.

Allotment Management Plan[b]

Reduce the composition of sagebrush (ARTR2) from 52% to 0-30% and increase the composition of perennial grasses and forbs from 21% to 60-85% in the identified treatment area of the Upper Pigeon pasture by 1998.

Reduce the combined amount of pinyon-juniper and sagebrush from 83% to 2-35% and increase the composition of perennial grasses, forbs, and browse from 21% to 32-90% in the identified treatment areas of the Salt House pasture by 2010.

Key Area #1; Bench Pasture
- Increase the frequency of ORHY from 4% to 8%
- Increase the frequency of SIHY from 6% to 10%

Key Area #3; North Pasture
- Maintain the frequency of SIHY at 64%
- Increase the frequency of ORHY from 6% to 10%

Key Area #4; Salt House Pasture
- Maintain the frequency of SIHY at 20%
- Increase the frequency of KOCR from 9% to 14%
- Increase the frequency of AGSM from0.5% to 3%

Desired Plant Community (DPC) Objectives

DPC objectives were developed during this evaluation process by an interdisciplinary team of resource specialists. These objectives focus on the ecological sites and their potentials, which reflect the vegetative diversity of the area. DPC objectives are expressed in figures of Composition by Weight (CBW). Composition data is collected using the Dry Weight Rank sampling method.

Key Area #1 – Bench pasture (Shallow Upland, Calcarious 10-14" p.z.)

Maintain perennial grass composition between 12-30% through 2030 by,
  Maintaining ORHY, CBW at between 2-7%
  Maintaining SIHY, CBW at between 1-5%
  Maintaining other perennial grasses, CBW at between 1-5%
Maintain COME, CBW at between 1-3%
Maintain EPNE, CBW at between 3-5%
Maintain shrubs CBW to between 30-45% by 2030.
Maintain forb CBW at between 5-10% through 2030.
Maintain ground litter at between 25 and 40% through 2030.
Maintain basal cover at between 2 and 10% through 2030.

[b] Current frequency objectives found in the Allotment Management Plan will be analyzed in this assessment. They will, however, be replaced by Desired Plant Community objectives for future assessments.

Rational: The ecological site for this key area is a Shallow Upland, calcarious 10-14" precipitation zone and is within a transition zone between the Great Basin and Mojave Ecoregion identified in the Grand Canyon-Parashant National Monument Environmental Impact Statement/Land Use Plan (GCPNM EIS/LUP) currently in draft. This draft LUP proposes the ecoregion is to be managed for a mosaic of early and mid seral vegetation communities. The key area and surrounding acreage has been burned by wildfire at least twice in the last three decades. The most recent fire occurred in 2005.

Grass species listed individually are components of the ecological site and are recognized as key species. The site guide allows from 1 to 2 % CBW for ORHY, and 1 to 3% for SIHY. Browse included as key species are Cliffrose (COME) and Mormon tea (EPNE). The site guide allows from 1-3% CBW for COME and 3-5% CBW for EPNE. In general forbs are very important for wildlife, but forb CBW varies widely depending on the season of the year, weather, and other factors.

Monitoring data suggests achievement of these DPC objectives is attainable and within the potential of the site.

Key Area #2 – Upper Pigion pasture (Shallow Loamy 10-14" p.z.)

Maintain perennial grass composition between 35-65% through 2030 by,
- Maintaining ORHY, CBW at between 1-5%
- Maintaining SIHY, CBW at between 5-10%
- Maintaining BOGR, CBW at between 30-60%
- Maintaining SPCR, CBW at between 1-5%
- Maintaining other perennial grasses, CBW at between 1-5%

Maintain shrubs CBW to between 25-45% by 2030.
Maintain forb CBW at between 5-10% through 2030.
Maintain ground litter at between 15 and 30% through 2030.
Maintain basal cover at between 2 and 10% through 2030.

Rational: The ecological site for this key area is a Shallow Loamy 10-14" precipitation zone and is within the Great Basin Ecoregion identified in the Grand Canyon-Parashant National Monument Environmental Impact Statement/Land Use Plan (GCPNM EIS/LUP) currently in draft. This draft LUP proposes the ecoregion is to be managed for a mosaic of early and mid seral vegetation communities. Grass species listed individually are components of the ecological site and are recognized as key species. The site guide allows from 5 to 10 % CBW for ORHY, and 5 to 10% for SIHY, 5 to 15% for BOGR, and 5 to 10% for STCO. Other species of shrubs and trees found at the key area provide important thermal and hiding cover for wildlife. In general forbs are very important for wildlife, however forb CBW varies widely depending on the season of the year, weather, and other factors. Monitoring data suggests achievement of these DPC objectives is attainable and within the potential of the site.

Key Area #3 – North pasture (Shallow Loamy 10-14" p.z.)

Maintain perennial grass composition between 30-55% through 2030 by,
- Maintaining BOGR, CBW at between 30-45%
- Maintaining ORHY, CBW at between 2-6%
- Maintaining SIHY, CBW at between 5-10%
- Maintaining STCO, CBW at between 1-5%
- Maintaining other perennial grasses, CBW at between 1-5%

Maintain shrubs CBW to between 30-50% by 2030.
Maintain forb CBW at between 5-10% through 2030.
Maintain ground litter at between 20 and 35% through 2030.
Maintain basal cover at between 5 and 10% through 2030.

Rational: The ecological site for this key area is a Shallow Loamy 10-14" precipitation zone and is within the Great Basin Ecoregion identified in the Grand Canyon-Parashant National Monument Environmental Impact Statement/Land Use Plan (GCPNM EIS/LUP) currently in draft. This draft LUP proposes the ecoregion is to be managed for a mosaic of early and mid seral vegetation communities.

The grass species listed individually are components of the ecological site and are recognized as key species. The site guide allows from 5 to 10 % CBW for SIHY, 5 to 15% for BOGR, 5-10% for ORHY, and 1 to 5% for STCO. Forbs are generally very important for wildlife, but forb CBW varies widely depending on the season of the year, weather, and other factors.

Key Area #4 – Salt House pasture (Loamy Upland, Gravelly 10-14" p.z.)

Maintain perennial grass composition between 30-45% through 2030 by,
- Maintaining BOGR, CBW at between 15-20%
- Maintaining SIHY, CBW at between 5-10%
- Maintaining KOCR, CBW at between 2-8%
- Maintaining other perennial grasses, CBW at between 1-5%

Maintain shrubs CBW to between 30-50% by 2030.
Maintain trees CBW to between 5-10% by 2030.
Maintain forb CBW at between 5-10% through 2030.
Maintain ground litter at between 25 and 35% through 2030.
Maintain basal cover at between 5 and 10% through 2030.

Rational: The ecological site for this key area is a Loamy Upland 10-14" precipitation zone and is within the Great Basin Ecoregion identified in the Grand Canyon-Parashant National Monument Environmental Impact Statement/Land Use Plan (GCPNM EIS/LUP) currently in draft. This draft LUP proposes the ecoregion is to be managed for a mosaic of early and mid seral vegetation communities.

The species listed individually are components of the ecological site and are recognized as key species for the area. The site guide allows from 15 to 20 % CBW for BOGR, 5 to 10% for SIHY, and 1 to 5% for KOCR. The tree and shrub

component are important for overall site diversity. In general, forbs are very important for wildlife, but forb CBW varies widely depending on the season of the year, weather, and other factors.

Key Area #5 – Savanic pasture (Shallow Sandy Loam, Calcarious 10-14" p.z.)

Maintain perennial grass composition between 5-20% through 2030 by,
- Maintaining BOER, CBW at between 7-15%
- Maintaining HIRI, CBW at between 1-5%
- Maintaining SIHY, CBW at between 1-3%
- Maintaining other perennial grasses, CBW at between 1-5%

Maintain shrubs CBW to between 35-65% by 2030.
Maintain trees CBW to between 5-10% by 2030.
Maintain forb CBW at between 5-10% through 2030.
Maintain ground litter at between 15 and 30% through 2030.
Maintain basal cover at between 2 and 8% through 2030.

Rational: The ecological site for this key area is a Shallow Sandy Loam, calcarious 10-14" precipitation zone and is within a transition zone between the Great Basin and Mojave Ecoregion identified in the Grand Canyon-Parashant National Monument Environmental Impact Statement/Land Use Plan (GCPNM EIS/LUP) currently in draft. This draft LUP proposes the ecoregion is to be managed for a mosaic of early and mid seral vegetation communities. The key area and surrounding acreage has been burned by wildfire at least twice in the last three decades. The most recent fire occurred in 2005, but did not affect the Key Area.

This site is recognized by the ecological site guide as a shrub community with a minor grass component. There may be however, inclusions within this site that produce a heavier percentage of grass. This site demonstrates this by the presence of Black grama (BOER). The site guide does not recognize BOER as a significant species, yet it makes up 11% of the perennial grass component. Most species listed individually are components of the ecological site and are recognized as key species. The site guide allows from 0 % CBW for BOER, 0 to 5% for SIHY, and 0 to 5% for HIRI. A variety of shrubs and half shrubs are found at the site and are important in overall structure and diversity. Forbs are very important for wildlife, but forb CBW varies widely depending on the season of the year, weather, and other factors.

D. Key Species

Plant Category	Common Name	Scientific Name
Cool Season Grasses	Squirrel Tail	Sitanion hystrix
	Indian rice grass	Oryzopsis hymenoides
	Prairie junegrass	Koeleria cristatum

Warm Season grasses	Blue grama	Bouteloua gracilus
	Big galleta	Hilaria ridgida
	Sand dropseed	Sporobolus cryptandrus
	Black grama	Bouteloua eriopoda
Browse species	Cliffrose	Cowania mexicana
	Four-wing saltbush	Atriplex canescense
	Mormon tea	Ephedra nevedensis

E. Grazing System

The Wildcat allotment is a cow-calf operation. Cattle are moved to the winter pastures in mid December and remain until approximately May 15. The winter unit consists of three pastures (Savanic, Bench and Pigeon). The winter unit is managed under a 3-pasture deferred rotation system. This system will provide spring growing season deferment every third year.

Cattle are allowed to drift into the Pigeon breaks between May 1st and May 15th. Livestock use the breaks for approximately two to three weeks as they move toward summer pastures. Cattle are generally in the summer pasture by June 1. The summer unit consists of five pastures (Upper Pigeon, Salt House, McDonald Flat, House and North) which will be operated under a 5-pasture deferred rotation system for the interim. Grazing use on the Salt House and Upper Pigeon pastures are alternated every year to provide for early or late growing season deferment. The first pasture is grazed from June 1 to July 31, while the second is grazed August 1 to September 15. During late summer and fall (September 16 through December 16 livestock are rotated through the McDonald Flat, House and North pastures. Upon completion of the proposed Salt House pasture fence, the 5-pasture system would become a 6-pasture deferred rotation system. The grazing treatment would be revised at that time to reflect the new schedule.

Initially the allotment will be grazed with a maximum of 250-300 head of cattle. This number may be adjusted upward or downward based on monitoring data and evaluation of progress toward meeting the stated goals and objectives.

F. Other uses

1. Special Status Species

Special Status Animals

The following federally listed, proposed, candidate, State, or BLM sensitive species may occur within or adjacent to this Allotment.

- California condor (*Gymnogyps californianus)* (Endangered – experimental, non-essential population)

- Bald eagle (*Haliaeetus leucocephalus)* (Threatened - proposed for de-listing)
- Peregrine falcon (*Falco peregrinus*) (Delisted, monitoring is ongoing. AZ species of concern.)
- Mexican spotted owl (*Strix occidentalis lucida*) (Threatened)
- Ferruginous hawk (*Buteo regalis*) (AZ species of concern)
- Western burrowing owl (*Athene cunicularia hypugaea*) (BLM sensitive)
- Loggerhead shrike (*Lanius ludovicianus*) (BLM sensitive)

California condor. An experimental non-essential population of California condors was established on the Vermilion Cliffs in 1996. Condors may fly over or forage within this allotment at any time of the year. These birds may occasionally forage on carrion within the allotment.

Bald eagles are only found on the Arizona Strip during the winter months. They do not nest in this area. In winter, they may fly over and forage for food in this allotment. They are infrequently seen along the slopes of the Kaibab Plateau and in canyons near the Grand Canyon during the colder months.

Peregrine falcons range across the Arizona Strip and nest on cliff faces. Peregrines were removed from federal listing in 1999, and a monitoring plan is in place.

Mexican spotted owls are known to nest in Zion and Grand Canyon National Parks near Arizona Strip BLM lands. To date, no spotted owls have been found to nest on the Arizona Strip, although the area may be used as winter habitat or by dispersing juveniles.

Ferruginous hawks. Typical habitat includes pinyon-juniper and open country. The Strip is at the periphery of the ferruginous hawk breeding range, but nesting has not been documented. They are uncommon visitors in winter months.

Western burrowing owls have been known to nest in isolated instances on the Strip. They typically nest in burrows excavated by mammals and are most often associated with prairie dog towns. There are no prairie dog towns on the Strip. However, many areas have sufficient rodent burrows that could provide suitable nesting sites for burrowing owls.

Loggerhead shrikes range across the Arizona Strip. Habitat requirements include tree or shrub nesting substrate, perches for hunting and territory advertisement, open foraging areas, and prey impaling sites.

A variety of sensitive bat species have been captured on the Strip including Townsend's big-eared (*Corynorhinus townsendii*), spotted bats (*Euderma maculatum*), small-footed myotis (*Myotis ciliolabrum*), fringed myotis (*Myotis thysanodes*), and big free-tailed bats (*Nyctinomops macrotis*). Bat inventories have not been conducted on this allotment.

Herpetological inventories have not been done for the spring sites found on the allotment. No special status reptiles or amphibians are known or suspected to occur on this allotment.

2. Other Wildlife Species

The Wildcat allotment is in the Arizona Game and Fish Department's Game Management Unit 13B. Mule deer (*Odocoileus hemionus*) and desert bighorn sheep *(Ovis canadensis)* are big game animals that can be found in this allotment.

A small amount (less than two square miles) of habitat for the introduced Merriam's turkey (*Meleagris galopavo merriami*) exists in the southern end of the allotment.

Other wildlife includes a variety of passerines (perching birds), reptiles, small mammals, and invertebrates.

3. Recreation

This Allotment is located within the Grand Canyon Parashant National Monument and is considered to have recreation values for its geology, scenic view sheds, and remoteness. General recreation activities could include sightseeing, horseback riding, hiking, camping, hunting, photography, bird watching and nature study.

Off Highway Vehicle Management: OHV classification: Limited to existing roads and trails.

Planning: Arizona Strip District Resource Management Plan (RMP): No specific objectives for recreation/wilderness planning were proposed for this area.

Recreational Opportunity Spectrum (ROS): The ROS classes found in this allotment are Semi-Primitive Motorized and Semi-Primitive Non-Motorized.

Visual Resource Management: Two VRM Classes are found on this allotment: Classes 2 and 4.

Trails: No developed recreation trail or formal designation for any road/trail is known in this allotment.

4. Wilderness

No Wilderness or Wild & Scenic River resources are located on this allotment.

G. Issues brought out in scoping.

1. Issues relating to Rangeland Health

a. Lack of good ground cover along the West Fork Parashant Wash and gully cutting of some of its tributaries, at the south end of the allotment.

b. Vegetative diversity, lack of understory in north part of Salt House pasture.

c. Weeds in the proximity of Log Spring

d. Dewatered Upper Pigeon Spring

2. Issues not relating to Rangeland Health, and not discussed further in this document.

a. Wildlife access to Lower Pigeon Spring and Lundell Tank

The BLM Rangeland Management Specialist, AGFD Wildlife Manager and the livestock permittee will collaborate on an individual project basis. They will work together to alleviate the wildlife access problems without compromising the effectiveness of the development for managing livestock.

b. Yearlong water availability at tanks west of Lower Pigeon Spring

This statement was more of a request from AGFD, rather than an issue. It has been a standard operating procedure for the livestock permittee to leave water in the storage tanks and troughs on a year-long basis. There have been times when the storage tanks have gone dry, however this was a result of pipeline problems and not the permittee purposely turning the water off.

IV. Management Evaluation

A. Purpose of Evaluation

The purpose of this assessment is to determine if the existing soil, water, and vegetative resources are meeting/making progress toward meeting or are not meeting the Arizona Standards for Rangeland Health. These resources are managed according to resource management plans, Allotment Management Plans, and other activity plans, which identify terms and conditions for management on public lands within the Wildcat Allotment. If the current livestock grazing practices are determined to be causing non-attainment of Standards then they will be modified to comply with the Guidelines for Grazing Administration. This assessment will also evaluate and update existing Activity Plan objectives to ensure multiple use objectives are tied to the indicators for rangeland health.

B. Summary of Studies Data

1. Livestock Actual Use

Actual use was determined from licensed use. Total active preference for the allotment is 4,593 AUMs.

Grazing Year	AUMs Used	% of Authorized AUMs Used
1991	2,873	63%
1992	3,024	66%
1993	1,135	25%
1994	410	9%
1995	683	15%
1996	498	11%
1997	2,519	55%
1998	2,513	55%
1999	2,588	56%
2000	2,715	59%
2001	2,814	61%
2002	1,148	25%
2003	1,366	30%
2004	2,142	47%

2. Precipitation

Average annual precipitation on Wildcat is approximately 17-19". Since there is no rain gauge on the allotment, the two nearest gauges at Salt House and Poverty Mountain are used to interpret annual rainfall amounts. The Salt House rain gauge is located in T32N, R13W, Sec.27, approximately 1 mile south of Wildcat. Average precipitation is ~19" annually. Approximately 14 percent (2.63") comes in the fall, 34 percent (6.80") in the winter, 20 percent (3.99") in the spring and 32 percent (6.35") in the summer.

The Poverty Mountain rain gauge is located in T35N, R12W, Sec.33, approximately 6 miles north-northeast of the allotment. Average precipitation is 16"+ annually. Approximately 14 percent (2.31") comes in the fall, 36 percent (5.73") in the winter, 18 percent (2.91") in the spring, and 32 percent (5.20 percent) in the summer. Even though the two rain gauges differ in the amount of annual rain fall, seasonal distribution of the precipitation is very similar.

	Annual Precipitation 1991-1998							
Rain Guage	**1991**	**1992**	**1993**	**1994**	**1995**	**1996**	**1997**	**1998**
Salt House	16.44"	21.30"	31.40"	28.25"	24.71"	13.25"	19.00"	19.50"
Poverty	12.55"	16.66"	23.71"	11.75"	22.50"	10.50"	18.38"	18.25"

	Annual Precipitation 1999-2006							
Rain Guage	**1999**	**2000**	**2001**	**2002**	**2003**	**2004**	**2005**	**2006**
Salt House	15.87"	6.02"	16.03"	5.75"	17.13"	13.50"	29.47"	11.31"
Poverty	14.75"	14.88"	14.62"	5.50"	14.81"	10.81"	26.39"	11.12"

3. Utilization

Utilization is the portion or amount of a key plant species current year's growth that is consumed or destroyed by animals. Utilization data from 1994-2004 has been compiled for this evaluation. The Key Species Grazed Class method was used to collect the data. Utilization is read at or around the designated key area for each pasture. ND = No data collected, NU = Non-use, meaning livestock did not graze the pasture.

Percent Utilization of Key Species at Key Area #1 (Bench Pasture)											
	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Orhy	NU	NU	26	25	38	51	45	37	30	34	34
Sihy	NU	NU	ND	20	38	43	44	31	30	28	30
Come	NU	NU	24	17	42	32	37	38	34	28	35
Epne	NU	NU	26	3	41	31	31	23	42	34	33

Utilization levels on a key species in the Bench pasture exceeded the 50% allowable on ORHY once during the evaluation period from 1994 through 2004. The highest overall use in the Bench pasture occurred in 1999 at 41%. Overall key species utilization in the pasture for the evaluation period was 32%.

Percent Utilization of Key Species at Key Area #2 (Upper Pigeon Pasture)											
	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Sihy	NU	NU	NU	39	42	39	39	42	42	44	36
Bogr	NU	NU	NU	30	36	36	26	39	35	39	28
Spcr	NU	NU	NU	42	33	43	28	46	47	51	26

Utilization levels on a key species in the Upper Pigeon pasture exceeded the 50% allowable on once during the evaluation period from 1994 through 2004. That use occurred in 2003 on sand dropseed at 51%. The highest overall use in the Upper Pigeon pasture was also in 2003 at 45%. Overall key species utilization in the pasture for the evaluation period was 38%.

Percent Utilization of Key Species at Key Area #3 (North Pasture)											
	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Sihy	NU	NU	40	41	30	32	32	36	30	42	35
Stco	NU	NU	33	47	38	38	45	38	30	33	45
Spcr	NU	NU	22	38	35	33	49	30	30	41	19
Bogr	NU	NU	24	32	32	44	41	34	30	31	41

Utilization levels on a key species at Key Area #3 in the North pasture did not exceeded the 50% allowable during the evaluation period from 1994 through 2004. The highest overall use at Key Area #3 occurred in 2000 at 41%. Overall utilization at the key area for the evaluation period was 35%.

Percent Utilization of Key Species at Key Area #4 (Salt House Pasture)											
	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Sihy	NU	NU	52	32	45	42	51	34	36	24	36
Kocr	NU	NU	62	27	38	41	29	15	37	14	27
Bogr	NU	NU	55	44	40	40	43	33	0	24	28
Spcr	NU	NU	59	48	47	48	53	37	0	23	36

Utilization levels on a key species at Key Area #4 in the Salt House pasture exceeded the 50% allowable two times during the evaluation period from 1994 through 2004. That use occurred on all key species in 1996 and on sand dropseed in 2000. The highest overall use at Key Area #4 was also in 1996 at 56%. Overall key species utilization at the key area for the evaluation period was 38%.

Percent Utilization of Key Species at Key Area #5 (Savanic Pasture)											
	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Boer	NU	NU	37	30	25	46	47	30	30	14	27
Sihy	NU	NU	55	51	44	53	44	29	30	21	24
Stco	NU	NU	55	39	42	44	36	35	30	25	38
Atca	NU	NU	53	59	48	39	42	31	30	19	12

Utilization levels on a key species at Key Area #5 in the Savanic pasture exceeded the 50% allowable five times during the evaluation period from 1994 through 2004. That use occurred on squirrel tail, needle and thread and four-wing saltbush in 1996, again on four-wing in 1997, and on squirrel tail in 1999. The highest overall use at Key Area #5 was also in 1996 at 50%. Overall key species utilization at the key area for the evaluation period was 37%.

4. Trend

Trend monitoring was conducted at five key areas over the allotment. The Bench, Upper Pigeon, North, Salt House, and Savanic pastures have key area locations where trend data is collected.

Data was collected using the Pace-Frequency method. This method of monitoring measures the percent of bare ground, litter, rock and live vegetation/basal cover. In addition, it measures the occurrence frequency of plant species. Key areas #3, #4, and #5 were established in 1982. Key Areas #1 and #2 were established in 1983.

The trend index, which combines percent frequency of key forage species, percent litter, and percent live vegetation (basal cover) into one numerical value, shows Key Area #3 in a downward trend, and #'s 1, 2, 4, and 5 are in an upward trend since baseline data was collected. Key species are identified by with an astrix (*).

Key Area #1, Bench Pasture, Shallow Upland, Calcareous 10-14" p.z , 4,500' elevation. Apparent Trend – Up; Live Basal Veg. Cover 6%.

Wildcat Allotment Key Area #1					
Plant Species (Pace Frequency)	**Included in the EcoSite Guide**	**Present at the Key Area**	**% Frequency in 1983**	**% Frequency in 2005**	**TREND**
Grasses					
Orhy*	Y	Y	15.8	16	Static
Sihy*	Y	Y	8.9	6	Static
Arlo	Y	Y	2	4	Static
Forbs					
Sphae	Y	Y	32.2	57	
Bamu	Y	Y	2.5	10	
Erigeron	Y	Y	0.5	0	
Encelia	Y	Y	0.5	0	
Eriogonum	Y	Y	0	10	
Lile	Y	Y	0	1	
Mimu	Y	Y	0	1	
Mentzelia	Y	Y	0	1	
Shrubs					
Gusa	Y	Y	27.7	22	
Cora	Y	Y	0	2	
Come*	Y	Y	3	2	Static
Yuba	Y	Y	6.4	11	
Epne*	Y	Y	0	2	Static
Aster	Y	Y	5.0	1	
Lyan	Y	Y	2	2	
Cover (Step Point)	**EcoSite potential Basal Cover**	**Reading in 1983**	**Reading in 2005**	**AMP objective for cover**	**TREND**
Live Basal Veg.	NA	1.5% cover	6% cover	NA	Static

Key Area #2, Upper Pigeon Pasture, Shallow Loamy 10-14" p.z; 5,820' elevation. Apparent Trend - Up, Live Basal Veg. Cover 19%.

Wildcat Allotment Key Area #2					
Plant Species (Pace Frequency)	**Included in the EcoSite Guide**	**Present at the Key Area**	**% Frequency in 1983**	**% Frequency in 2005**	**TREND**
Grasses					
Bogr*	Y	Y	75.8	90	Up
Arlo	Y	Y	0	1	
Sihy*	Y	Y	6.9	6	Static
Orhy	Y	Y	0	1	
Spcr*	Y	Y	0	3	Static
Stco	Y	Y	0	1	
Muto2	Y	Y	0	2	
Forbs					
Sphae	Y	Y	12.4	10	
Erigeron	Y	Y	0.9	0	
Phlox	Y	Y	2	5	
Astrag	Y	N	0.9	0	
Senecio	Y	Y	0	1	
Calcordus	Y	Y	0	2	
Aster	Y	N	0	1	
Lear4	Y	Y	0	7	
Peth2	Y	Y	0	2	
Plantago	Y	Y	0	38	
PPFF	Y	Y	0	7	
AAFF	Y	Y	0	91	
Shrubs					
Artr	Y	Y	41	10	
Gusa	Y	Y	67.8	14	
Befr	Y	Y	0	1	
Chvi8	Y	Y	0	8	
Opuntia	Y	Y	0	1	
Pied	N	Y	0	1	
Cover (Step Point)	**EcoSite potential Basal Cover**	**Reading in 1983**	**Reading in 2005**	**AMP objective for cover**	**TREND**
Live Basal Veg.	NA	4% cover	19% cover	NA	Up

Key Area #3, North Pasture, Shallow Loamy 10-14" p.z., 5,760' elevation. Apparent Trend - Down, Live Basal Veg. Cover 27%.

Wildcat Allotment Key Area #3					
Plant Species (Pace Frequency)	**Included in the EcoSite Guide**	**Present at the Key Area**	**% Frequency in 1982**	**% Frequency in 2004**	**TREND**
Grasses					
Bogr*	N	Y	64	82	Upward
Stco*	N	Y	3	10	Static
Sihy*	Y	Y	64	16	Down
Arlo	N	Y	0	7	
Spcr	Y	Y	0	4	
Orhy*	N	Y	6	3	Static
Forbs					
Sphae	Y	Y	13	7	
PPFF	Y	Y	9	6	
Lewis Flax	N	Y	0	2	
Erigeron	N	Y	16	5	
AAFF	Y	Y	0	0.5	
Eriogonum	Y	Y	4	3	
Shrubs					
Artr	Y	Y	27	4	
Gusa	Y	Y	28	55	
Chvi8	Y	Y	0	0.5	
Erfa	N	Y	0	1	
Opuntia	Y	Y	0	0.5	
Cover (Step Point)	**EcoSite Potential Basal Cover**	**Reading in 1983**	**Reading in 2004**	**AMP objective for cover**	**TREND**
Live Basal Veg.	NA	5% cover	27% cover	NA	Upward

Key Area #4, Salt House Pasture, Loamy Upland, Gravelly 13-17" p.z., 5,900' elevation. Apparent Trend - Upward, Live Basal Veg. Cover 8%.

Wildcat Allotment Key Area #4					
Plant Species (Pace Frequency)	**Included in the EcoSite Guide**	**Present at the Key Area**	**% Frequency in 1982**	**% Frequency in 2005**	**TREND**
Grasses					
Bogr*	Y	Y	51	67	Upward
Sihy*	Y	Y	20	10	Static
Kocr*	Y	Y	9	27	Upward
Agsm	Y	Y	0.5	1	
Pofe	Y	Y	0	1	
AAGG		Y	0	76	
Forbs					
Hyfi	Y	Y	0	1	
Phlox	N	Y	0	22	
Euin	N	Y	0	4	
Calcordius	Y	Y	0	8	
Senecio	Y	Y	0	9	
Eriogonum	Y	Y	0	5	
PPFF	Y	Y	24	9	
Plantego	Y	Y	0	32	
AAFF		Y	0	89	
Shrubs					
Artr	Y	Y	57	50	
Gusa	Y	Y	24	39	
Juos		Y	1	4	
Come		Y	0	1	
Cover (Step Point)	**EcoSite Potential Basal Cover**	**Reading in 1982**	**Reading in 2005**	**AMP objective for cover**	**TREND**
Live Basal Veg.	NA	0.5% cover	8% cover	NA	Static

Key Area #5, Savanic Pasture, Shallow Sandy Loam, Calcareous 10-14" p.z., 4,400' elevation. Apparent Trend - Upward, Live Basal Veg. Cover 8%.

Wildcat Allotment Key Area #5					
Plant Species (Pace Frequency)	**Included in the EcoSite Guide**	**Present at the Key Area**	**% Frequency in 1982**	**% Frequency in 2005**	**TREND**
Grasses					
Boer*	N	Y	25	14	Down
Sihy*	N	Y	6	1	Static
Hiri	Y	Y	2	4	
Spcr*	N	Y	0	2	Static
Stco*	Y	Y	7	1	Static
AAGG		Y	0	96	
Forbs					
Bamu	Y	Y	0	3	
Eriogonum	N	Y	4	30	
Penstamon	N	Y	1	9	
Stephanomeria	Y	Y	0	14	
AAFF	Y	Y	0	68	
Shrubs					
Erfa	Y	Y	0	6	
Atca		Y	1	1	
Lyan		Y	6	4	
Gusa		Y	34	4	
Epne		Y	0	1	
Cora		Y	6	10	
Chvi8		Y	0	1	
Ukwn ½ shrub	Y	Y	0	4	
D. almond		Y	0	2	
Yuba		Y	0	2	
Juos		Y	4	6	
Cover (Step Point)	**EcoSite Potential Basal Cover**	**Reading in 1982**	**Reading in 2005**	**AMP objective for cover**	**TREND**
Live Basal Veg.	NA	0% cover	4% cover	NA	Static

Wildcat Exclosure, Clay Loam Upland 10-14" p.z., 5,700'

Frequency Data Inside Exclosure				Frequency Data Outside Exclosure			
Species	**%Freq. 1982 12/22/82**	**%Freq. 2005 6/22/05**	**% Comp 2005**	**Species**	**%Freq. 1982 12/22/82**	**%Freq. 2005 6/22/05**	**% Comp 2005**
Trees/Shrubs				**Trees/Shrubs**			
Artr	30	41	25	Artr	39	56	25
Gusa	19	9	2	Gusa	12	32	6
Opuntia				Opuntia		1	1
Grasses				**Grasses**			
Bogr	50	55	26	Bogr	59	36	20
Kocr		2	1	Kocr			
Arlo	1	2		Arlo			
Sihy	36	28	10	Sihy	16	31	8
Muto2		2	1	Muto2			
Orhy	2	3	1	Orhy		2	1
Feoc		10		Brru		1	
Forbs/Annuals				**Forbs/Annuals**			
Aster	8	41	18	Aster	22	42	15
Eriog.	10			Eriog.	2	1	1
Astrag.		13	1	Astrag.	1	6	1
AAFF		8		AAFF		22	
Calochortus		1		Calochortus			
Delphinium		0		Delphinium		1	
Euphorbia		4		Euphorbia		4	
Giag		2	1	Giag		2	1
Lupinus		4		Lupinus		1	
Menzilia		1		Menzilia			
Peth2		17	3	Peth2		36	7
Phlo2		26	6	Phlo2		41	11
Plantago		22		Plantago			
PPFF		11		PPFF		2	1
Semu3		8		Semu3		2	1
Sesp3		4		Sesp3			
Sphae		8	3	Sphae		6	4
Bare Ground	80	36		**Bare Ground**	78	53	
Litter	12	34		**Litter**	17	36	
Rock		22		**Rock**			
Basal Hits	8	8		**Basal Hits**	5	6	
Ground Cover	20	42		**Ground Cover**	22	42	
Ecological Condition			58% LS	**Ecological Condition**			61% LS

5. Ecological Site Inventory

The "Dry Weight Rank" vegetative sampling method is used to determine species composition. The present composition and the potential for each key species are used to set composition objectives. The potential composition is determined by the applicable soil type and precipitation zone. These potentials are described in Ecological Site Guides provided by the Natural Resources Conservation Service.

Key Area #1 Plant Spp	Site Guide Allowable Composition	No Prior Composition	2005 Composition	Desired Composition Objective
Grasses				
Orhy*	1-2%		7%	2-7%
Sihy*	1-3%		4%	1-5%
Arlo	0%		4%	
Forbs				
Sphae	1-3%		46%	
Bamu	1-3%		4%	
Erigeron			T	
Encelia			T	
Eriogonum	1-3%		3%	
Lile			T	
Mimu			T	
Mentzelia			T	
Shrubs				
Gusa	1-2%		16%	
Cora	45-65%		3%	
Come*	1-3%		1%	1-3%
Yuba	2-5%		5%	
Epne*	3-5%		2%	3-5%
Aster	0%		1%	
Lyan	1-3%		4%	

Key Area #1, Shallow Upland, Calcareous 10-14" p.z., Mid seral (33% of PNC)

Key Area #2 Plant Spp	Site Guide Allowable Composition	No Prior Composition	2005 Composition	Desired Composition Objective
Grasses				
Orhy*	5-10%		T	1-5%
Sihy*	5-10%		5%	5-10%
Arlo	1-5%		T	
Bogr2*	5-15%		60%	30-60%
Muto2	1-5%		T	
Spcr*	1-5%		2%	1-5%
Stco	5-10%		T	1-5%
Forbs				
Sphae	1-5%		5%	1-5%
Calochortus			T	
Phlo2			1%	
Peth2			1%	
Senecio			1%	
PPFF	1-5%		1%	1-5%
Lear4			1%	
Shrubs				
Gusa	5-10%		10%	5-10%
Artr	5-30%		8%	5-30%
Befr	5-10%		T	
Chvi8	5-10%		4%	
Pied	5-10%		T	1-5%
Aster			1%	
Opuntia	1-5%		1%	

Key Area #2, Shallow Loamy 10-14" p.z., Late seral (63% of PNC)

Key Area #3 Plant Spp	Site Guide Allowable Composition	1995 Composition	2005 Composition	Desired Composition Objective
Grasses				
Orhy*	5-10%	1%	2%	2-6%
Sihy*	5-10%	18%	6%	5-10%
Arlo	1-5%	1%	2%	
Bogr2*	5-15%	44%	44%	30-45%
Muto2	1-5%	T	T	
Spcr	1-5%	4%	2%	
Stco*	5-10%	T	2%	1-5%
Forbs				
Sphae	1-5%	6%	1%	1-5%
Lewis flax		4%	1%	
Eriogonum		2%	1%	
Erigeron		5%	0%	
AAFF	1-5%	6%	1%	1-5%
Shrubs				
Gusa	5-10%	9%	35%	
Artr	5-30%	T	1%	5-20%
Chvi8	5-10%	T	1%	
Erfa	1-5%	0	1%	

Key Area #3, Shallow Loamy 10-14" p.z., Mid seral (46% of PNC)

Key Area #4 Plant Spp	Site Guide Allowable Composition	No Prior Composition	2005 Composition	Desired Composition Objective
Grasses				
Bogr2*	15-20%		19%	15-20%
Sihy*	5-10%		5%	5-10%
Kocr*	1-5%		9%	2-8%
Agsm	5-20%		T	1-5%
Pofe	5-10%		T	1-5%
Forbs				
Hyfi			T	
Calochortus			T	
Phlo2			4%	
AAFF	1-5%		2%	1-5%
Senecio			2%	
PPFF	1-5%		1%	1-5%
Eriogonum			T	
Shrubs				
Gusa	5-10%		17%	
Artr	5-30%		36%	5-30%
Juos	5-10%		5%	5-10%

Key Area #4, Loamy Upland, Gravelly 10-14" p.z., Late seral (70% of PNC)

Key Area #5 Plant Spp	Site Guide Allowable Composition	No Prior Composition	2005 Composition	Desired Composition Objective
Grasses				
Boer*	0%		11%	7-15%
Hiri	0-5%		4%	1-5%
Sihy*	0-5%		1%	1-5%
Stco*	0%		T	1-2%
Spcr*	0%		T	1-2%
AAGG	0-5%		2%	
Forbs				
Bamu			1%	
Penstamon			11%	
AAFF	1-5%		1%	1-5%
PPFF	1-5%		5%	1-5%
Gaura			3%	
Eriogonum			21%	
Shrubs				
Atca	0%		1%	1-3%
Chvi8	0-3%		1%	1-3%
Cora	30-60%		11%	
Epne	3-8%		T	1-5%
Gusa	2-5%		4%	
Juos	0-15%		9%	0-15%
Lyan	0-4%		6%	
Opuntia	0-3%		T	
Erfa	0-3%		5%	
Prfa	0-3%		1%	
Yuba	3-7%		2%	

Key Area #5, Shallow Sandy Loam, Calcareous 10-14" p.z., Late seral (57% of PNC)

6. Special Status Species

California condor: The re-introduction of condors to northern Arizona began with the release of six captive-reared birds on the Vermilion Cliffs in 1996. As of June 1, 2005, there were 53 condors in the wild in northern Arizona. The reintroduced population as a whole appears to be stable and is increasing.

Bald eagle: Bald eagles have not been known to nest anywhere on the Arizona Strip. Their typical habitat components include bodies of water with fish, which are not available in this allotment. There have not been studies or data collected on bald eagles on the Arizona Strip. To date, there are no official records of this species roosting, foraging, or flying over this allotment.

California condors currently range across the entire Arizona Strip, throughout the Grand Canyon, into adjacent Utah and Nevada, and south of the Grand Canyon in Arizona. Condors range widely, easily covering over 100 miles in a day. Condors are most commonly observed near the release site on the Vermilion Cliffs, at Navajo Bridge near Marble Canyon, on the Kaibab Plateau, and near the South Rim of the Grand Canyon. Condors occasionally fly over and may feed on carrion in this allotment.

Peregrine falcon: Optimum peregrine falcon habitat is considered to be steep cliffs overlooking woodlands, riparian habitats or other areas supporting abundant avian prey species. Peregrines return to breeding areas in Arizona from mid-February to mid-March. Egg laying and incubation occurs from mid-March through mid-May, and the young can fledge from May through August.

This allotment contains areas considered suitable for peregrine falcon nesting habitat. However, peregrines have not been known to nest in the Wildcat allotment.

Mexican spotted owl: Surveys for Mexican spotted owls were conducted sporadically from 1978 to 1997. Since 1998, owl surveys have been conducted annually on the Strip. Habitat requirements in canyons include steep, narrow canyons with microsites that remain cool during most of the day. They can also use mixed conifer stands. There is no mixed conifer on the Strip and canyons are generally too open and hot to support Mexican spotted owls. To date, no spotted owls have been observed nesting, roosting, foraging, or flying over Arizona Strip BLM-managed lands.

This allotment contains areas considered to be suitable spotted owl habitat by the Spotskey-Willey Habitat Model. However, these habitat polygons are small (averaging approximately 1/16 square mile) and are not expected to support spotted owls. Surveys for them have not been conducted in this allotment.

Ferruginous hawk: Typical habitat requirements of open country with pinyon-juniper or woodland periphery are present on the Strip but the area is at the edge of their breeding range. There are probably only 5-10 known laying pairs in Arizona. There have not
been studies or data collected on ferruginous hawks on the Arizona Strip. To date, this species has not been observed nesting, roosting, foraging, or flying over this allotment.

Western burrowing owl: Burrowing owls are occasionally observed on the Strip but are uncommon. In this allotment their habitat requirements are in place with the exception of an abundance of suitable burrows. To date, this species has not been observed nesting, roosting, foraging, or flying over this allotment.

Loggerhead shrike: Loggerhead shrikes are permanent residents on the Strip and are fairly common. Their habitat requirements appear to be adequately met on this allotment. Rangewide, the loggerhead shrike is in decline due primarily to loss and degradation of suitable habitat. Arizona Strip habitat has not been altered to the degree of most of the overall shrike range. This species occurs on this allotment, but population trend data is not available.

7. Wildlife Habitat

This allotment contains mule deer habitat areas that are considered winter crucial, summer crucial, summer, and yearlong. Deer population data is not collected specifically for this allotment, but is collected for the Game Management Unit as a whole. Game Management Unit 13B covers Arizona Strip BLM managed lands west of the Hurricane Cliffs. (Please refer to Appendix E for unit data.) Unit 13B is famous for producing large antlered "trophy" class mule deer bucks. Despite low deer densities throughout the unit, good numbers of deer can typically be found in the higher elevations, generally over 4,000 feet. In the southern portion of the unit, from approximately Hidden Canyon south, hunters can find deer in the "Parashant" area of Mount Dellenbaugh and Snap point and all points in between. Other areas include Grassy Mountain, the Hidden Rim and Whitmore Point.

The 13B population trend/status is probably currently static. Recent drought and associated higher fawn and adult mortality make id difficult for the population to expand. Fawn survival in 2003 was very good.

The western portion of the allotment, along the Lower Grand Wash Cliffs, is habitat for desert bighorn sheep *(Ovis canadensis)*. Desert Bighorn exist in two areas in unit 13B and are managed separately. This allotment is in the 13B South Unit. Unit 13B South includes bighorn populations in the Grand Wash Cliffs.

The allotment is not considered to be habitat for pronghorn antelope (*Antilocapra americana*).

8. Riparian/Fisheries Habitat

There is no riparian or fisheries habitat on this allotment.

9. Wild Horse and Burro Habitat

There are no wild horses or burros on this allotment.

10. Lithology and Soils

a. Lithology

The Wildcat allotment consists of loamy to clayey soils on stream terraces, mesas, benches and hills, composed of limestone, mudstone and basalt. Portions have extensive pj-woodland.

b. Soils

SOILS AND ECOLOGICAL SITES (623)

02 Albers silty clay, 0 to 1 percent slopes (stream terrace), basalt, Moenkopi; Clay Upland, 13" to 17" ppt
08 Barx fine sandy loam, 1 to 5 percent slopes, (fan terraces), mixed; Loamy Upland, 9" to 13"
14 Boquillas family-Showlow complex, 25 to 50 percent slopes, (basalt mesas), basalt, shale; Basalt Slopes, 13" to 17"
18 Childers-Rizno association, 4 to 15 percent slopes, (plateaus), limestone and sandstone; Childers=Shallow Upland (calcareous), 9" to 13"ppt
21 Disterheff-Natank-Yumtheska complex, 2 to 15 percent slopes (hills) Virgin/lower red; Disterheff and Natank=Clay Loam Upland (Gravelly), 13" to 17"; Yumtheska=Limestone Slopes, 13' to 17"
25 Goesling loam, 1 to 5 percent slopes (stream terrace), Moenkopi; Loamy Upland (Gravelly), 13" to 17"
34 Hindu-RO-Gypill complex, 35 to 70 percent slopes, (cliffs, scarps, mtns), gyp, LS, SS, CG; Hindu=Limestone Hills, 6" to 9"; Gyphill=Gypsum Hills, 6" to 9"
45 Mellenthin-Rock outcrop-Torriorthents complex, 10 to 70 percent slopes (hills) Kiabab; Mellenthin=Shallow Loamy, 9" to 13"; Torriorthents=Breaks, 9" to 13"
46 Mellenthin-Strych Complex, 4 to 25 percent slopes, cool, (plateaus, mesas), limestone; Mellenthin=Shallow Loamy, 9" to 13"; Strych=Loamy Upland, 9" to 13"
52 Meriwhitica-RO-Strych complex, 35 to 70 percent slopes, warm, (scarps, cliffs, canyon walls), basalt, limestone, sandstone, gypsite, shale, conglomerates; Meriwhitica=Breaks (calcareous), 9" to 13"; Strych=Loamy Upland (calcareous), 9" to 13"

59 Padilla silt loam, 1 to 5 percent slopes, (fan terrace), mixed sedimentary; Clay Loam Upland, 9" to 13" ppt

63 Radnik loam, 1 to 5 percent slopes (floodplain) mixed; Loamy Bottom, 9" to 13" ppt

65 Rizno-Bond_RO complex, 4 to 25 percent slopes, (plateau slopes), Navajo sandstone; Shallow Sandy Loam, 9" to 13" ppt

69 Showlow-Thunderbird complex, 2 to 25 percent slopes, (basalt mesas), basalt;Clay Loam Upland (gravelly) PJ-Woodland, 13" to 17"

73 Strych very gravelly loam, 2 to 10 percent slopes (fan) mixed; Loamy Upland, 9" to 13"

76 Tassi-Risno complex, 5 to 35 percent slopes, (benches), limestone, sandstone; Tassi=Shallow Upland (calcareous), 9" to 13" ppt

93 Yumtheska-Katzine-Rock Outcrop complex, 2 to 30 percent slopes (hills) limestone; Yumtheska=Limestone Slopes (PJ-Woodland), 13" to 17"; Katzine=Loamy Upland (gravelly) PJ-Woodland, 13" to 17"

95 Yumtheska- Natank complex, 10 to 45 percent slopes (plateau, mesa), limestone; Yumtheska=Limestone Slopes (PJ-Woodland), 13" to 17"; Natank=Clay Loam Upland (gravelly) PJ-Woodland, 13" to 17"

c. Soil Condition Assessment:

Four large drainages in the Parashant area were reconnoitered for soil condition. Platy, physical surface crusts have reduced the infiltration rates and increased runoff in some areas. Old roads and trails have gullied in some areas. The physical properties of the drainage soils make them very susceptible to compaction. Soil samples were taken from the structurally altered (subangular blocky to platy or massive), compacted, near surface layers on these areas and tested for texture and bulk density (Db). Percent change from normal bulk density for that texture and the decrease in porosity were noted.

Soil Sample	Location	Texture	Normal Bulk Density (Db) g/cc	Root restricting Db g/cc*	Sample Db g/cc	% Increase in Db	% Decrease in Porosity
Db-1, Radnik mu 63, (1-3")	T33N R12W sec 29 SWNE big sage, grasses Marys Tank drainage	silt loam	1.15	1.55	1.34	16.5	12.7
Db-2, Radnik mu 63, (1-4")	T33N R12W sec 29 SWSW Big sage, annuals Marys Tank drainage	silty clay loam	1.15	1.50	1.42	23.5	18.0

Db-3, Goesling mu 25, (1-4")	T32N R13W sec 11 SESENW Big sage, cheatgrass Snap Draw	silt loam	1.15	1.55	1.29	12.2	9.4
Db-4, Goesling mu 25, (0-3")	T32N R13W sec 13 SWNW Big sage, annuals Salt House Draw	silt loam +	1.15	1.55	1.40	21.7	16.6
Db-5, Albers mu 02, (1-5")	T32NR12W sec 17 SWSWSE Sage, cheat & grasses West Parashant Wash	silt loam	1.15	1.55	1.42	23.5	18.0
Db-6, Albers mu 02, (2-6")	T32N R12W sec 08 SENW Big sage West Parashant Wash	silty clay loam	1.15	1.50	1.54	33.9	26.0
Db-7, Albers mu 02, (1-5")	T33N R12W sec 32 NWSESE big sage, grasses West Parashant Wash	silt loam	1.15	1.55	1.31	13.9	10.6
Hoof print by Db-7	"	"	"	"	1.49	29.6	22.6

*NRCS soil quality information sheet "Rangeland Soil Quality – Compaction", May 2001. Most root systems are greatly affected at these Db levels, especially young grasses. The initiation of root restriction for many plants will usually start well below these Db levels.

Compaction is greatest at the 1 to 6 inch depth where surface weathering and powdering are not effective in reversing the problem. Freeze/thaw and shrink/swell of clayey textures may loosen the near surface soils slightly. The bulk density data shows that these soils, in the average 1 to 6 inch depth, have an increase of 12.2 to 33.9 percent in density over what would be expected for these textures. A rule of thumb is that a Db increase of 15 percent results in a decreased infiltration/permeability rate of about 50 percent. Since the larger pores are the first to be reduced by compressive forces, the effect is to reduce the infiltration rate and to increase runoff. These soils receive runoff and fine sediments from the surrounding uplands and have a high potential to gully when disturbed. The infiltration rate and near surface permeability have been reduced by compaction resulting in greatly increased runoff. The drainages are no longer depositional sites of soil formation, but sites of accelerated soil erosion. This is evident by the visibly active sheet, rill, and gully erosion.

Reduced porosity also means a loss in root space, productive potential, available water holding capacity, and aeration. The porosity loss in these soil layers ranges from 9.4 to 26.0 percent. Sprouts would find it hard to penetrate compacted layers or to break through a clayey surface crust. Thus, the site is dryer now than prior to compaction and gully formation, given the same amount of precipitation. Achieving the potential plant community of the ecological site guide, under these degraded soil conditions, may not be possible.

Nearing or exceeding the root restricting Db helps to explain why there are some barren interspaces between bushes. These soils have been subject to over 100 years of trampling. Most compaction likely occurred during the first decades of heavy use and would be maintained by winter and early spring use when the soils are wettest to depth and are most vulnerable to compaction. The current grazing system uses the most compactable soils (Parashant area) when they are dry, in the summer, and is therefore compatible with watershed needs.

Much of the surrounding uplands have increased P-J to the point that big sagebrush and other under-story plants are dying off. Sheet erosion has stripped off the A horizons in some areas. The resulting barren interspaces between the trees are causing excessive runoff to the stream terraces in the drainages, accelerating the head cutting and other erosion problems. Gardner Canyon and the south Pigeon draw at the northwest side of the allotment have much recent cutting.

C. Information and/or Data Pertaining to Issues (from III.G.1.)

1. Issues relating to Rangeland Health

a. Lack of good ground cover along the West Fork Parashant Wash and gully cutting of some of its tributaries, at the south end of the allotment.

The surrounding woody dominated uplands (approximately 2,000 acres) have rendered this area in general at risk. As the woody species (mainly juniper and pinyon) have increased on the upland sites, the understory species have decreased. This decrease in understory species includes sagebrush, cliffrose, and desert holly which are typically fairly aggressive species. As these understory species give way to the more dominate, aggressive woody species, bare interspaces become larger, water moves off the site and soil movement begins taking place. This soil movement results in small rills and gully cutting.

b. Vegetative diversity, lack of understory in north part of Salt House pasture.

This issue mirrors issue (a) above and is also the result of those upland acres being dominated by pinyon-juniper species. This seems to be a common occurrence and is not isolated to this allotment.

c. Weeds in the proximity of Log Spring

Scotch thistle has been discovered in the proximity of Log Spring. The infested area is less than ½ acre.

d. Dewatered Upper Pigeon Spring

Upper Pigeon Spring is one of the base waters for the Wildcat allotment and was first developed in the late 1940's. The current permittee has not used water from the spring for over 20 years. A seep defines the water source much more accurately than a spring. Upper pigeon has long been a maintenance problem, and requires routine clean out so water collects in large enough volume to be moved into a trough. If the seep is not cleaned out and collected in some type system, water disappears underground and is dispersed throughout the fractured limestone stratum, and is thus dewatering itself through natural processes and not by the current livestock operation. Upper pigeon is not a free flowing water source that produces pools or supports abundant riparian habitat.

V. Conclusions

A. Pertaining to Objectives

1. Land Use Plan Objectives

GZ17 *- Allowable use on key forage species is 50 percent of current years growth on allotments with rotational grazing systems.*

This objective has been met. Utilization levels for the evaluation period across the allotment in established key areas were 32%, 38%, 35%, 38%, and 37%. These use levels are below the 50% allowable.

WS01 *- Manage vegetation cover towards ecological stability and sound long-term protective soil cover using mechanical, biological or fire as tools for accomplishment.*

Most of the area has adequate soil cover, but where the pinyon-juniper forest is thickening and killing off the understory, ground cover is decreasing. Excessive runoff and erosion are evident where the understory is sparse.

WS22 *- Manage watershed areas according to watershed categorizations to achieve identified objectives.*

The allotment was classified in the RMP as category IV. This means that the watershed units currently are in unsatisfactory erosion condition and the soils would be responsive to treatment. It should remain a category IV until enough projects are accomplished to improve watershed conditions to an acceptable level.

RR06 *- Implement actions to restore and/or maintain natural conditions or appearance in all areas.*

This objective is being met. This objective is a process that is an ongoing effort based on observations of range and other specialists and restoration actions are evaluated through the planning and NEPA process for interdisciplinary input and review.

RR08 *- Manage the majority of the resource area for extensive recreation while maintaining its naturalness/remoteness. The exception to this is the Cedar Pockets Campground.*

This objective is being met. Visitors to this AMP area engage in hunting, camping, and sightseeing and indulge in a variety of legitimate recreation activities and are monitored to see that the area's values are not degraded by overuse.

RR09 *- Commercial recreation permits would be issued to the extent that their cumulative impacts are consistent with the overall objectives of this plan and are in the public interest.*

This objective is being met. As new requests for commercial special recreation use permits are received they are evaluated and reviewed for consistency with this objective and processed accordingly.

TE01 *Manage areas consistent with multiple uses to conserve candidate species and their habitats and ensure that actions authorized, funded, or carried out do not contribute to the need to list any of these species as threatened or endangered. Adverse impacts to listed species will be avoided.*

This objective has been met. No actions which might contribute to the need to list candidate species have occurred. No adverse impacts to listed species are known.

WL02 *Maintain productive wildlife habitat and ensure wildlife needs and considerations are incorporated into land use planning, National Environmental Policy Act documents, and management decisions.*

This objective is being met. Wildlife and wildlife habitat needs are incorporated into management decisions. An interdisciplinary team evaluates and proposed actions and ensures wildlife needs for productive habitat are incorporated into any pertinent plans or decisions. Because this allotment is within the Grand Canyon-Parashant National Monument, proposals are carefully reviewed and receive extra scrutiny.

WL06 *In cooperation with Arizona Game and Fish Department, continue restoration of native wildlife into their historic ranges by supporting and assisting in the releases of native species.*

This objective is being met. No restorations of native wildlife have occurred in this allotment, but the re-introduction of the California condor, desert bighorn sheep, and pronghorn elsewhere on the Arizona Strip have led to increased wildlife diversity in this allotment. Condors and bighorn sheep occur at times in this allotment.

WL07 *Manage wildlife habitat through the Habitat Management Plan process to achieve desired plant community objectives.*

This objective is being met. Wildlife species and habitats are managed through the Mt. Trumbull HMP. Desired plant community objectives consider the needs of wildlife and their habitat. Objectives for this allotment have been developed that incorporate wildlife needs.

WL16 *Complete in key areas to determine site potentials and present ecological conditions; establish desired plant community objectives for various areas and include these objectives in Allotment Management Plans, Habitat Management Plans, watershed plans, and other plans in order to prescribe management or improvement practices to achieve these objectives.*

This objective has been met. The ecological site inventories have been completed at key areas. As described above desired plant community objectives are being cooperatively set as part of this S&G process and will be incorporated into the various activity plans as they are revised and upon completion of the new land use plan (RMP) which is currently being developed.

2. Specific Resource Objectives

<u>California Condor Recovery Plan</u>

CC-1 *Provide foraging habitat for California condors.*

Foraging habitat is available for condors. Due to recent concerns raised about the condors eating contaminated food, leaving dead livestock on the range for the condors is not being encouraged. Condors are especially vulnerable to lead poisoning and carcasses possibly containing lead should be removed from the range. There is no evidence that the habitat is limiting or restricting condor population growth.

CC-2 *Maintain a healthy, self-sustaining population of California condors with a positive growth rate of at least 150 individuals with at least 15 breeding pairs.*

While this objective has not yet been met, the condor population appears to be stable and is increasing. Recent reports of at least two successful nests indicate that the birds are beginning to make progress towards self-sustaining populations. The condors at the Vermilion Cliffs are still very young birds, with many having just

recently reached sexual maturity. It may still be many years before the population objective reaches 150 individuals and at least 15 breeding pairs. There is no evidence that rangeland health on this allotment would inhibit the condor population from reaching this objective.

Bald Eagle

BE-1 *The wintering population of bald eagles would be recovered and delisted.*

This objective is being met, although it is more a nationwide objective that an Arizona Strip objective. Bald eagles are tentatively slated for delisting in 2005.

BE-2 *Restrict authorized and/or permitted activities within 0.5 miles of active bald eagle wintering roosts.*

This objective is being met. Site visits and clearances for any proposed activities are conducted by BLM biologists. Active bald eagles roosts are reported and appropriate actions taken to restrict activities within the 0.5 mile radius. At present, no known wintering roosts for bald eagles are known from this allotment.

Mule Deer

MD-1. Self-sustaining mule deer populations would be enhanced or maintained in Game Management Units 12B, 13A, and 13B. Initial or supplemental transplants could be authorized on a case by case basis. Existing habitat areas could be expanded and new habitat areas may be added where appropriate.

This objective is being met. Deer populations in this area are stable.

MD-2. Crucial summer mule deer habitat would be managed for at least 10% grasses and forbs and 30% palatable browse species CBW, where consistent with site potential. Crucial winter mule deer habitat would be managed to include at least 30% palatable browse species, where consistent with site potential. Palatable browse species would be maintained and enhanced through vegetation conversion. Palatable browse species could include, but is not limited to cliffrose, bitterbrush, ceanothus, four-wing saltbush, desert holly, Mormon tea, and mountain mahogany.

This objective is being met in compliance with DPC objectives.

Allotment Management Plan

Reduce the composition of sagebrush (ARTR2) from 52% to 0-30% and increase the composition of perennial grasses and forbs from 21% to 60-85% in the identified treatment area of the Upper Pigeon pasture by 1998.

Met. Monitoring data collected in 2005 show the composition of sagebrush (ARTR2) was at 8%, composition of perennial grasses was at 68%, and forb composition was 6%.

Reduce the combined amount of pinyon-juniper and sagebrush from 83% to 2-35% and increase the composition of perennial grasses, forbs, and browse from 21% to 32-90% in the identified treatment areas of the Salt House pasture by 2010.

Not met. This area has not yet received the planned treatment as prescribed in the Parashant Interdisciplinary Management Plan. This specific project has been coordinated with and entered into the 5 year fuels reduction plan. Perhaps by structuring the project as a joint, integrated vegetation management project this action can be implemented.

Key Area #1; Bench Pasture
- *Increase the frequency of ORHY from 4% to 8%*
- *Increase the frequency of SIHY from 6% to 10%*

Partially met. Frequency data from 2005 shows ORHY at 16% frequency and SIHY at 6%.

Key Area #3; North Pasture
- *Maintain the frequency of SIHY at 64%*
- *Increase the frequency of ORHY from 6% to 10%*

Not met. Frequency data was collected in 2004 and the following results were obtained. SIHY frequency was 16% and ORHY frequency was at 3%.
Key Area #4; Salt House Pasture
- *Maintain the frequency of SIHY at 20%*
- *Increase the frequency of KOCR from 9% to 14%*
- *Increase the frequency of AGSM from0.5% to 3%*

Partially met. Frequency data collected in 2005 show the frequency of SIHY at 14%, KOCR at 28%, and AGSM at 2%.

Desired Plant Community Objectives developed during this evaluation

Key Area #1 – Bench pasture (Shallow Upland, Calcarious 10-14" p.z.)

Maintain perennial grass composition between 12-30% through 2030 by,
Maintaining ORHY, CBW at between 2-7%
Maintaining SIHY, CBW at between 1-5%
Maintaining other perennial grasses, CBW at between 1-5%
Maintain COME, CBW at between 1-3%
Maintain EPNE, CBW at between 3-5%
Maintain shrubs CBW to between 30-45% by 2030.
Maintain forb CBW at between 5-10% through 2030.
Maintain ground litter at between 25 and 40% through 2030.
Maintain basal cover at between 2 and 10% through 2030.

These objectives are partially met. The ecological condition is 33% similar to PNC, which is mid seral. Present CBW for key species is as follows: Orhy is 7%, Sihy is 4%, Come is 1%, and Epne is 2%.

By functional group, CBW for shrubs is at 32%, CBW for perennial grasses is at 15%, CBW for trees is at 0% and CBW for forbs are at 53%. Basal cover is at 6%.

Key Area #2 – Upper Pigion pasture (Shallow Loamy 10-14" p.z.)

Maintain perennial grass composition between 35-65% through 2030 by,
Maintaining ORHY, CBW at between 1-5%
Maintaining SIHY, CBW at between 5-10%
Maintaining BOGR, CBW at between 30-60%
Maintaining SPCR, CBW at between 1-5%
Maintaining other perennial grasses, CBW at between 1-5%
Maintain shrubs CBW to between 25-45% by 2030.
Maintain forb CBW at between 5-10% through 2030.
Maintain ground litter at between 15 and 30% through 2030.
Maintain basal cover at between 2 and 10% through 2030.

These objectives are met. The ecological condition is 63% similar to PNC, which is late seral. Present CBW for key species is as follows: Orhy is a trace, Sihy is 5%, Bogr is 60%, and Spcr is 2%.

By functional group, CBW for shrubs is at 23%, CBW for perennial grasses is at 67%, CBW for trees is at 0% and CBW for forbs are at 10%. Basal cover is at 19%.

Key Area #3 – North pasture (Shallow Loamy 10-14" p.z.)

Maintain perennial grass composition between 30-55% through 2030 by,
Maintaining BOGR, CBW at between 30-45%
Maintaining ORHY, CBW at between 2-6%
Maintaining SIHY, CBW at between 5-10%
Maintaining STCO, CBW at between 1-5%
Maintaining other perennial grasses, CBW at between 1-5%
Maintain shrubs CBW to between 30-50% by 2030.
Maintain forb CBW at between 5-10% through 2030.
Maintain ground litter at between 20 and 35% through 2030.
Maintain basal cover at between 5 and 10% through 2030.

These objectives are met. The ecological condition is 46% similar to PNC, which is mid seral. Present CBW for key species is as follows: Bogr is 44%, Orhy is 2%, Sihy is 6%, and Stco is 2%.

By functional group, CBW for shrubs is at 38%, CBW for perennial grasses is at 58%, CBW for trees is at 0% and CBW for forbs are at 4%. Basal cover is at 27%.

Key Area #4 – Salt House pasture (Loamy Upland, Gravelly 10-14" p.z.)

Maintain perennial grass composition between 30-45% through 2030 by,
Maintaining BOGR, CBW at between 15-20%
Maintaining SIHY, CBW at between 5-10%

Maintaining KOCR, CBW at between 2-8%
Maintaining other perennial grasses, CBW at between 1-5%
Maintain shrubs CBW to between 30-50% by 2030.
Maintain trees CBW to between 5-10% by 2030.
Maintain forb CBW at between 5-10% through 2030.
Maintain ground litter at between 25 and 35% through 2030.
Maintain basal cover at between 5 and 10% through 2030.

These objectives are met. The ecological condition is 70% similar to PNC, which is late seral. Present CBW for key species is as follows: Bogr is 19%, Sihy is 5%, and Kocr is 9%.

By functional group, CBW for shrubs is at 53%, CBW for perennial grasses is at 33%, CBW for trees is at 5% and CBW for forbs are at 9%. Basal cover is at 8%.

Key Area #5 – Savanic pasture (Shallow Sandy Loam, Calcarious 10-14" p.z.)

Maintain perennial grass composition between 5-20% through 2030 by,
Maintaining BOER, CBW at between 7-15%
Maintaining HIRI, CBW at between 1-5%
Maintaining SIHY, CBW at between 1-3%
Maintaining other perennial grasses, CBW at between 1-5%
Maintain shrubs CBW to between 35-65% by 2030.
Maintain trees CBW to between 5-10% by 2030.
Maintain forb CBW at between 5-10% through 2030.
Maintain ground litter at between 15 and 30% through 2030.
Maintain basal cover at between 2 and 8% through 2030.

These objectives are met. The ecological condition is 57% similar to PNC, which is late seral. Present CBW for key species is as follows: Boer is 11%, Hiri is 4%, and Sihy is 1%.

By functional group, CBW for shrubs is at 40%, CBW for perennial grasses is at 16%, CBW for trees is at 9% and CBW for forbs are at 42%. Basal cover is at 4%.

B. Pertaining to Issues

1. Issues relating to Rangeland Health

a. Lack of good ground cover along the West Fork of Parashant Wash and gully cutting of some of its tributaries, at the south end of the allotment.

The ecological status and functionality of this area is not a new issue specific to this allotment evaluation. This issue was scoped and addressed during the development of the Parashant Interdisciplinary Management Plan (1997). From that planning effort, a 1,000 acre project was proposed (Salt House Pinyon-

Juniper Removal Project) and an environmental assessment prepared to help address this issue. Passage of time and monument designation has not diminished the need for treatment in the area, in fact, the project area should be expanded. To fully realize the projected benefits to ecological diversity, watershed function, and wildlife habitat restoration, the project should be carried forward as a viable project for future consideration. This project has been identified as an action in BLM's five year fuels reduction plan which would be implemented as a multi-discipline project.

b. *Vegetative diversity, lack of understory in north part of Salt House pasture.*

The vegetative diversity issue in north Salt House pasture is addressed above in (a), as the issues are consistent with one another. The Salt House pasture is located within the West Fork of the Parashant drainage and would be addressed with implementing the 1,000 acre project proposed in the Parashant Interdisciplinary Management Plan (1997).

c. *Weeds in the proximity of Log Spring.*

Noxious weeds issues are taken very seriously, and this one in proximity to Log Spring is no different. Past, present, and future efforts to eradicate this weed will continue. Inventory and treatment of weed areas are on-going and occur at least annually or more frequent if necessary.

Weeds near Log Spring have been treated with herbicide and hand tools since 1995. The infested area continues to decrease in size. On going efforts to eradicate the weeds will continue to prevent further spread.

d. *Dewatered Upper Pigeon Spring.*

During the allotments field visit, this issue evolved from a dewatered spring source to an issue of a seep needing maintenance so that water could remain at the source and not go underground. Arizona Game and Fish Department (AGFD) expressed interest in cooperating with the permittee to re-work the seep so water might be more available to wildlife using the area. The permittee was amenable to the proposal and had no problems with leaving water at the source. The permittee cautioned AGFD of the maintenance problems of the seep and did not want that to become his responsibility. Because Upper Pigeon Spring has base water status, AGFD and the permittee will explore options for remedy and work together for future solutions.

The following is added for conclusions relative to implementation of the Standards for Rangeland Health and Guidelines for Grazing Administration

Based on the analyses and supporting documentation referenced herein, resource conditions on the allotment:

[ ] Meet all applicable standards for rangeland health

[X] Are making significant progress toward meeting the applicable standards for rangeland health

Do not meet the standards for rangeland health for:

[ ] No. 1: Upland sites
[ ] No. 2: Riparian-Wetland sites
[ ] No. 3: Desired Resource Conditions
[ ] Have not been sufficiently documented to make a specific determination, but there is no reason to believe that current management would preclude meeting the standards for rangeland health.

VI. Recommendations

A. Renew the ten year grazing permit on the Wildcat allotment with current terms and conditions of that permit.

B. Carry forward as a priority project the Salt House Pinyon-Juniper Removal treatment project to restore vegetation diversity, ground cover abundance, and assist in watershed functionality in the West Fork of Parashant drainage. This project along with others should be dove-tailed to existing planning and a future watershed treatment plan.

C. Continue using the herbicide Tebuthiuron "Spike 20P" as a tool to reduce the composition of sagebrush or other woody species in identified treatment areas to meet desired plant community objectives.

D. Allow AGFD and the livestock permittee to go forward with developing maintenance solutions of Upper Pigeon Spring.

E. Continue to treat any noxious weeds found on the allotment.

AUTHORIZED OFFICER CONCURRENCE:

__X__ I concur with the conclusions and recommendations as written.

_____ I do not concur.

_____ I concur, with the following modifications:

Dennis Curtis — 8/6/09

Monument Manager — Date
Grand Canyon – Parashant National Monument

Wildcat Allotment

1 0.5 0 1 Miles

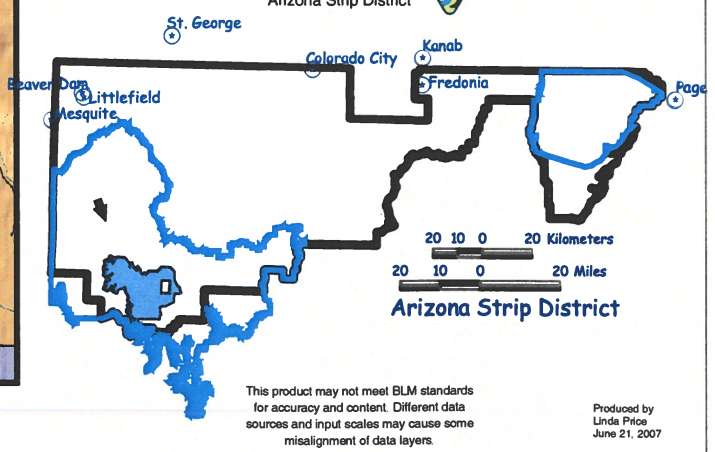
1 0.5 0 1 Kilometers

1:100,000

- Noxious Weeds
- Fenced Reservoir
- Trough
- Undeveloped Spring
- Unfenced Reservoir
- Water Storage Tank
- Well
- Wildlife Catchment
- Wildlife Drinker
- Windmill
- Cattleguard
- Corral
- Developed Spring
- Livestock Catchment
- Key Area
- Fence
- Pipeline
- Monument Boundary
- Grazing Allotments
- Wilderness Boundary

Ownership
- BLM
- Forest Service
- Indian Reservation
- National Park
- Private
- Recreation Area
- State

Bureau of Land Management
Arizona Strip District

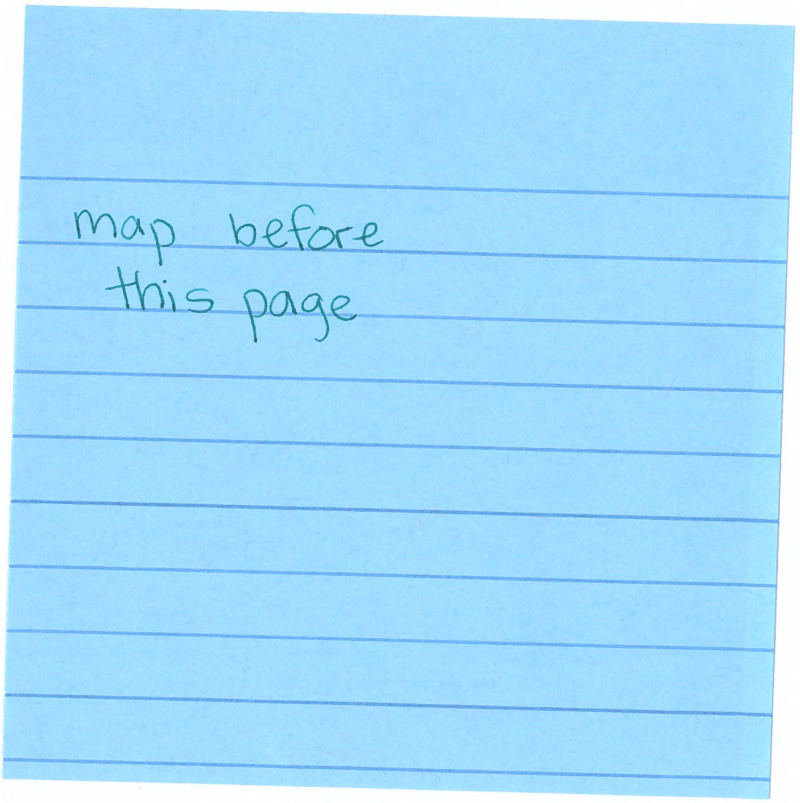


This product may not meet BLM standards for accuracy and content. Different data sources and input scales may cause some misalignment of data layers.

Produced by
Linda Price
June 21, 2007

Appendix A

ARIZONA STANDARDS FOR RANGELAND HEALTH AND GUIDELINES FOR GRAZING ADMINISTRATION



ARIZONA STANDARDS FOR RANGELAND HEALTH AND GUIDELINES FOR GRAZING ADMINISTRATION

INTRODUCTION

The Department of the Interior's final rule for Grazing Administration, issued on February 22, 1995, and effective August 21, 1995, requires that Bureau of Land Management (BLM) State Directors develop State or regional standards and guidelines for grazing administration in consultation with BLM Resource Advisory Councils (RAC), other agencies and the public. The final rule provides that fallback standards and guidelines be implemented, if State standards and guidelines are not developed by February 12, 1997. Arizona Standards and Guidelines and the final rule apply to grazing administration on public lands as indicated by the following quotation from the Federal Register, Volume 60, Number 35, page 9955.

> "The fundamentals of rangeland health, guiding principles for standards and the fallback standards address ecological components that are affected by all uses of public rangelands, not just livestock grazing. However, the scope of this final rule, and therefore the fundamentals of rangeland health of §4180.1, and the standards and guidelines to be made effective under §4180.2, are limited to grazing administration."

Although the process of developing standards and guidelines applies to grazing administration, present rangeland health is the result of the interaction of many factors in addition to grazing by livestock. Other contributing factors may include, but are not limited to, past land uses, land use restrictions, recreation, wildlife, rights-of-way, wild horses and burros, mining, fire, weather, and insects and disease.

With the commitment of BLM to ecosystem and interdisciplinary resource management, the standards for rangeland health as developed in this current process will be incorporated into management goals and objectives. The standards and guidelines for rangeland health for grazing administration, however, are not the only considerations in resolving resource issues.

The following quotations from the Federal Register, Vol. 60, No. 35, page 9956, February 22, 1995, describe the purpose of standards and guidelines and their implementation:

> "The guiding principles for standards and guidelines require that State or regional standards and guidelines address the basic components of healthy rangelands. The Department believes that by implementing grazing-related actions that are consistent with the fundamentals of §4180.1 and the guiding principles of §4180.2, the long-term health of public rangelands can be ensured.
>
> "Standards and guidelines will be implemented through terms and conditions of grazing permits, leases, and other authorizations, grazing-related portions of activity plans (including Allotment Management Plans), and through range improvement-related activities.
> "The Department anticipates that in most cases the standards and guidelines themselves will not be terms and conditions of various authorizations but that the terms and conditions will reflect the standards and guidelines.

"The Department intends that assessments and corrective actions will be undertaken in priority order as determined by BLM.

"The Department will use a variety of data including monitoring records, assessments, and knowledge of the locale to assist in making the "significant progress" determination. It is anticipated that in many cases it will take numerous grazing seasons to determine direction and magnitude of trend. However, actions will be taken to establish significant progress toward conformance as soon as sufficient data are available to make informed changes in grazing practices."

FUNDAMENTALS AND DEFINITION OF RANGELAND HEALTH

The Grazing Administration Regulations, at §4180.1 (43 Code of Federal Regulation [CFR] 4180.1), Federal Register Vol. 60, No. 35, pg. 9970, direct that the authorized officer ensures that the following conditions of rangeland health exist:

(a) Watersheds are in, or are making significant progress toward, properly functioning physical condition, including their upland, riparian-wetland, and aquatic components; soil and plant conditions support infiltration, soil moisture storage, and the release of water that are in balance with climate and landform and maintain or improve water quality, water quantity, and timing and duration of flow.

(b) Ecological processes, including the hydrologic cycle, nutrient cycle, and energy flow, are maintained, or there is significant progress toward their attainment, in order to support healthy biotic populations and communities.

(c) Water quality complies with State water quality standards and achieves, or is making significant progress toward achieving, established BLM management objectives such as meeting wildlife needs.

(d) Habitats are, or are making significant progress toward being, restored or maintained for Federal threatened and endangered species, Federal Proposed, Category 1 and 2 Federal candidate and other special status species.

These fundamentals focus on sustaining productivity of a rangeland rather than its uses. Emphasizing the physical and biological functioning of ecosystems to determine rangeland health is consistent with the definition of rangeland health as proposed by the Committee on Rangeland Classification, Board of Agriculture, National Research Council (Rangeland Health, 1994, pg. 4 and 5). This Committee defined Rangeland Health ". . .as the degree to which the integrity of the soil and the ecological processes of rangeland ecosystems are sustained." This committee emphasized ". . .the degree of integrity of the soil and ecological processes that are most important in sustaining the capacity of rangelands to satisfy values and produce commodities." The Committee also recommended that "The determination of whether a rangeland is healthy, at risk, or unhealthy should be based on the evaluation of three criteria: degree of soil stability and watershed function, integrity of nutrient cycles and energy flow, and presence of functioning mechanisms" (Rangeland Health, 1994, pg. 97-98).

Standards describe conditions necessary to encourage proper functioning of ecological processes on specific ecological sites. An ecological site is the logical and practical ecosystem unit upon which to base an interpretation of rangeland health. Ecological site is defined as:

". . . a kind of land with specific physical characteristics which differs from other kinds of land in its ability to produce distinctive kinds and amounts of vegetation and in its response to management" (Journal of

Range Management, 48:279, 1995). Ecological sites result from the interaction of climate, soils, and landform (slope, topographic position). The importance of this concept is that the "health" of different kinds of rangeland must be judged by standards specific to the potential of the ecological site. Acceptable erosion rates, water quality, productivity of plants and animals, and other features are different on each ecological site.

Since there is wide variation of ecological sites in Arizona, standards and guidelines covering these sites must be general. To make standards and guidelines too specific would reduce the ability of BLM and interested publics to select specific objectives, monitoring strategies, and grazing permit terms and conditions appropriate to specific land forms.

Ecological sites have the potential to support several different plant communities. Existing communities are the result of the combination of historical and recent uses and natural events. Management actions may be used to modify plant communities on a site. The desired plant community for a site is defined as follows: "Of the several plant communities that may occupy a site, the one that has been identified through a management plan to best meet the plan's objectives for the site. It must protect the site as a minimum." (Journal of Range Management, 48:279, 1995.)

Fundamentals (a) and (b) define physical and biological components of rangeland health and are consistent with the definition of rangeland health as defined by the Committee on Rangeland Classification, Board on Agriculture, National Research Council, as discussed in the paragraph above. These fundamentals provide the basis for sustainable rangelands.

Fundamentals (c) and (d) emphasize compliance with existing laws and regulation and, therefore, define social and political components of rangeland health. Compliance with Fundamentals (c) and (d) is accomplished by managing to attain a specific plant community and associated wildlife species present on ecological sites. These desired plant communities are determined in the BLM planning process, or, where the desired plant community is not identified, a community may be selected that will meet the conditions of Fundamentals (a) and (b) and also adhere to laws and regulations. Arizona Standard 3 is written to comply with Fundamentals (c) and (d) and provide a logical combination of Standards and Guidelines for planning and management purposes.

STANDARD AND GUIDELINE DEFINITIONS

Standards are goals for the desired condition of the biological and physical components and characteristics of rangelands. Standards:

(1) are measurable and attainable; and
(2) comply with various Federal and State statutes, policies, and directives applicable to BLM Rangelands.

Guidelines are management approaches, methods, and practices that are intended to achieve a standard. Guidelines:

(1) typically identify and prescribe methods of influencing or controlling specific public land uses;
(2) are developed and applied consistent with the desired condition and within site capability; and
(3) may be adjusted over time.

IMPLEMENTING STANDARDS AND GUIDELINES

The authorized officer will review existing permitted livestock use, allotment management plans, or other activity plans which identify terms and conditions for management on public land. Existing management practices, and levels of use on grazing allotments will be reviewed and evaluated on a priority basis to determine if they meet, or are making significant progress toward meeting, the standards and are in conformance with the guidelines. The review will be interdisciplinary and conducted under existing rules which provide for cooperation, coordination, and consultation with affected individuals, federal, state, and local agencies, tribal governments, private landowners, and interested publics.

This review will use a variety of data, including monitoring records, assessments, and knowledge of the locale to assist in making the significant progress determination. Significance will be determined on a case by case basis, considering site potential, site condition, weather and financial commitment. It is anticipated there will be cases where numerous years will be needed to determine direction and magnitude of trend.

Upon completion of review, the authorized officer shall take appropriate action as soon as practicable but no later than the start of the next grazing year upon determining that the existing grazing management practices or level of use on public land are significant factors contributing to failure to achieve the standards and conform with the guidelines that are made effective under 43 CFR 4180.2. Appropriate action means implementing actions that will result in significant progress toward fulfillment of the standards and significant progress toward conformance with guidelines.

Livestock grazing will continue where significant progress toward meeting standards is being made. Additional activities and practices would not be needed on such allotments. Where new activities or practices are required to assure significant progress toward meeting standards, livestock grazing use can continue contingent upon determinations from monitoring data that the implemented actions are effective in making significant progress toward meeting the standards. In some cases, additional action may be needed as determined by monitoring data over time.

New plans will incorporate an interdisciplinary team approach (Arizona BLM Interdisciplinary Resource Management Handbook, April 1995). The terms and conditions for permitted grazing in these areas will be developed to comply with the goals and objectives of these plans which will be consistent with the standards and guidelines.

ARIZONA STANDARDS AND GUIDELINES

Arizona Standards and Guidelines (S&G) for grazing administration have been developed through a collaborative process involving the Bureau of Land Management State S&G Team and the Arizona Resource Advisory Council. Together, through meetings, conference calls, correspondence, and Open Houses with the public, the BLM State Team and RAC prepared Standards and Guidelines to address the minimum requirements outlined in the grazing regulations. The Standards and Guidelines, criteria for meeting Standards, and indicators are an integrated document that conforms to the fundamentals of rangeland health and the requirements of the regulations when taken as a whole.

Upland sites, riparian-wetland areas, and desired resource conditions are each addressed by a standard and associated guidelines.

Standard 1: Upland Sites

Upland soils exhibit infiltration, permeability, and erosion rates that are appropriate to soil type, climate and landform (ecological site).

Criteria for meeting Standard 1:

Soil conditions support proper functioning of hydrologic, energy, and nutrient cycles. Many factors interact to maintain stable soils and healthy soil conditions, including appropriate amounts of vegetative cover, litter, and soil porosity and organic matter. Under proper functioning conditions, rates of soil loss and infiltration are consistent with the potential of the site.

Ground cover in the form of plants, litter or rock is present in pattern, kind, and amount sufficient to prevent accelerated erosion for the ecological site; or ground cover is increasing as determined by monitoring over an established period of time.

Signs of accelerated erosion are minimal or diminishing for the ecological site as determined by monitoring over an established period of time.

As indicated by such factors as:

Ground Cover
- litter
- live vegetation, amount and type (e.g., grass, shrubs, trees, etc.)
- rock

Signs of erosion
- flow pattern
- gullies
- rills
- plant pedestaling

Exceptions and exemptions (where applicable):

none

Guidelines:

1-1. Management activities will maintain or promote ground cover that will provide for infiltration, permeability, soil moisture storage, and soil stability appropriate for the ecological sites within management

units. The ground cover should maintain soil organisms and plants and animals to support the hydrologic and nutrient cycles, and energy flow. Ground cover and signs of erosion are surrogate measures for hydrologic and nutrient cycles and energy flow.

1-2. When grazing practices alone are not likely to restore areas of low infiltration or permeability, land management treatments may be designed and implemented to attain improvement.

Standard 2: Riparian-Wetland Sites

Riparian-wetland areas are in properly functioning condition.

Criteria for meeting Standard 2:

Stream channel morphology and functions are appropriate for proper functioning condition for existing climate, landform, and channel reach characteristics. Riparian-wetland areas are functioning properly when adequate vegetation, land form, or large woody debris is present to dissipate stream energy associated with high water flows.

Riparian-wetland functioning condition assessments are based on examination of hydrologic, vegetative, soil and erosion-deposition factors. BLM has developed a standard checklist to address these factors and make functional assessments. Riparian-wetland areas are functioning properly as indicated by the results of the application of the appropriate checklist.

The checklist for riparian areas is in Technical Reference 1737-9 "Process for Assessing Proper Functioning Condition." The checklist for wetlands is in Technical Reference 1737-11 "Process for Assessing Proper Functioning Condition for Lentic Riparian-Wetland Areas."

As indicated by such factors as:

Gradient
Width/depth ratio
Channel roughness and sinuosity of stream channel
Bank stabilization
Reduced erosion
Captured sediment
Ground-water recharge
Dissipation of energy by vegetation

Exceptions and exemptions (where applicable):

Dirt tanks, wells, and other water facilities constructed or placed at a location for the purpose of providing water for livestock and/or wildlife and which have not been determined through local planning efforts to provide for riparian or wetland habitat are exempt.

Water impoundments permitted for construction, mining, or other similar activities are exempt.

Guidelines:

2-1. Management practices maintain or promote sufficient vegetation to maintain, improve or restore riparian-wetland functions of energy dissipation, sediment capture, groundwater recharge and stream bank stability, thus promoting stream channel morphology (e.g., gradient, width/depth ratio, channel roughness and sinuosity) and functions appropriate to climate and landform.

2-2. New facilities are located away from riparian-wetland areas if they conflict with achieving or maintaining riparian-wetland function. Existing facilities are used in a way that does not conflict with riparian-wetland functions or are relocated or modified when incompatible with riparian-wetland functions.

2-3. The development of springs and seeps or other projects affecting water and associated resources shall be designed to protect ecological functions and processes.

Standard 3: Desired Resource Conditions

Productive and diverse upland and riparian-wetland plant communities of native species exist and are maintained.

Criteria for meeting Standard 3:

Upland and riparian-wetland plant communities meet desired plant community objectives. Plant community objectives are determined with consideration for all multiple uses. Objectives also address native species, and the requirements of the Taylor Grazing Act, Federal Land Policy and Management Act, Endangered Species Act, Clean Water Act, and appropriate laws, regulations, and policies.

Desired plant community objectives will be developed to assure that soil conditions and ecosystem function described in Standards 1 and 2 are met. They detail a site-specific plant community, which when obtained, will assure rangeland health, State water quality standards, and habitat for endangered, threatened, and sensitive species. Thus, desired plant community objectives will be used as an indicator of ecosystem function and rangeland health.

As indicated by such factors as:

Composition
Structure
Distribution

Exceptions and exemptions (where applicable):

Ecological sites or stream reaches on which a change in existing vegetation is physically, biologically, or economically impractical.

Guidelines:

3-1. The use and perpetuation of native species will be emphasized. However, when restoring or rehabilitating disturbed or degraded rangelands, non-intrusive, non-native plant species are appropriate for use where native species (a) are not available, (b) are not economically feasible, (c) cannot achieve ecological objectives as well as non-native species, and/or (d) cannot compete with already established non-native species.
3-2. Conservation of Federal threatened or endangered, proposed, candidate, and other special status species is promoted by the maintenance or restoration of their habitats.

3-3. Management practices maintain, restore, or enhance water quality in conformance with State or Federal standards.

3-4. Intensity, season and frequency of use, and distribution of grazing use should provide for growth and reproduction of those plant species needed to reach desired plant community objectives.

3-5. Grazing on designated ephemeral (annual and perennial) rangeland may be authorized if the following conditions are met:

ephemeral vegetation is present in draws, washes, and under shrubs and has grown to useable levels at the time grazing begins;

sufficient surface and subsurface soil moisture exists for continued plant growth;

serviceable waters are capable of providing for proper grazing distribution;

sufficient annual vegetation will remain on site to satisfy other resource concerns, (i.e., watershed, wildlife, wild horses and burros); and

monitoring is conducted during grazing to determine if objectives are being met.

3-6. Management practices will target those populations of noxious weeds which can be controlled or eliminated by approved methods.

3-7. Management practices to achieve desired plant communities will consider protection and conservation of known cultural resources, including historical sites, and prehistoric sites and plants of significance to Native American peoples.

Appendix B

TEAM MEMBERSHIP

Interdisciplinary Assessment Team

Linda Price	Project Coordinator (BLM)
Scot Franklin	Wildlife Biologist (BLM)
Larry Gearhart	Wilderness/Recreation Specialist (BLM)
Whit Bunting	Vegetation/Grazing Administration (BLM)
Robert Smith	Soils and Watershed(BLM)
John Sims	Wildlife Manager (Arizona Game and Fish Department)
Kyle Spencer	Soils and Vegetation (Natural Resource Conservation Service)
Rob Grumbles	Vegetation and Social Economics (Mohave County Extension Service)

Rangeland Resource Team

Commodity Interests

Bill Gubler,
Grazing
Rancher, St. George, UT

Bill Howes
Off Road Vehicle Use
Wizards Motorcycle Club

Kent McComb,
Grazing
Retired, St. George, UT

Non-Commodity Interests

Scott Hansen,
Environmental Conservation
Retired, St. George, UT

Spence Esplin,
Historical
Retired, St. George, UT

Phil Squire,
Dispersed Recreation/Wildlife
Retired, St. George, UT

Local Area Interests

Frank Malan,
Public-at-Large
Retired, St. George, UT

Roger McPeek
Public-at-Large
Retired, St. George, UT

Dennis Becenti
Native American Interests
Hopi and Navajo Tribes, AZ

Alternates

Maggie Sacher,
Commercial Recreation/Tourism
Owner: Lee's Ferry Lodge,
Marble Canyon, AZ

Paul Weaver
Non-Commodity
St. George, UT

Appendix C:
PRECIPITATION DATA

Historical Precipitation Report

Field Office 130 **Rain Gauge Name:** Poverty **Rain Gauge Number:** 10

	Seasonal Precipitation Amounts					Annual Average					Percent of Normal				
Year	Fall	Winter	Spring	Summer	Annual	Fall	Winter	Spring	Summer	Annual	Fall	Winter	Spring	Summer	Annual
1978	1.85	10.00	3.68	1.76	17.29	2.47	5.49	2.96	4.74	15.67	75%	182%	124%	37%	110%
1979	4.76	8.00	2.57	4.78	20.11	2.47	5.49	2.96	4.74	15.67	193%	146%	87%	101%	128%
1980	2.02	6.44	2.57	5.17	16.20	2.47	5.49	2.96	4.74	15.67	82%	117%	87%	109%	103%
1981	1.45	2.37	4.72	6.18	14.72	2.47	5.49	2.96	4.74	15.67	59%	43%	159%	130%	94%
1982	1.35	5.40	5.25	8.60	20.60	2.47	5.49	2.96	4.74	15.67	55%	98%	177%	181%	131%
1983	4.78	5.50	4.20	4.81	19.29	2.47	5.49	2.96	4.74	15.67	193%	100%	142%	101%	123%
1984	3.13	4.76	0.80	6.60	15.29	2.47	5.49	2.96	4.74	15.67	127%	87%	27%	139%	98%
1985	2.14	8.37	1.72	3.75	15.98	2.47	5.49	2.96	4.74	15.67	87%	152%	58%	79%	102%
1986	4.50	2.06	3.50	4.77	14.83	2.47	5.49	2.96	4.74	15.67	182%	37%	118%	101%	95%
1987	1.85	5.66	3.00	3.42	13.93	2.47	5.49	2.96	4.74	15.67	75%	103%	101%	72%	89%
1988	4.33	2.66	3.50	4.45	14.94	2.47	5.49	2.96	4.74	15.67	175%	48%	118%	94%	95%
1989	0.97	5.68	1.79	2.37	10.81	2.47	5.49	2.96	4.74	15.67	39%	103%	60%	50%	69%
1990	0.50	3.59	2.63	6.56	13.28	2.47	5.49	2.96	4.74	15.67	20%	65%	89%	138%	85%
1991	1.50	5.25	1.50	4.30	12.55	2.47	5.49	2.96	4.74	15.67	61%	96%	51%	91%	80%
1992	1.18	4.90	5.64	4.94	16.66	2.47	5.49	2.96	4.74	15.67	48%	89%	190%	104%	106%
1993	3.80	11.45	3.21	5.25	23.71	2.47	5.49	2.96	4.74	15.67	154%	208%	108%	111%	151%
1994	2.88	4.40	2.47	2.00	11.75	2.47	5.49	2.96	4.74	15.67	117%	80%	83%	42%	75%
1995	2.56	10.88	5.31	3.75	22.50	2.47	5.49	2.96	4.74	15.67	104%	198%	179%	79%	144%
1996	0.05	5.95	1.00	3.50	10.50	2.47	5.49	2.96	4.74	15.67	2%	108%	34%	74%	67%
1997	2.75	5.25	1.50	8.88	18.38	2.47	5.49	2.96	4.74	15.67	111%	96%	51%	187%	117%
1998	1.63	7.74	2.38	6.50	18.25	2.47	5.49	2.96	4.74	15.67	66%	141%	80%	137%	116%
1999	2.85	1.90	3.25	6.75	14.75	2.47	5.49	2.96	4.74	15.67	115%	35%	110%	142%	94%
2000	0.25	3.50	0.63	10.50	14.88	2.47	5.49	2.96	4.74	15.67	10%	64%	21%	221%	95%
2001	3.62	5.12	4.63	1.25	14.62	2.47	5.49	2.96	4.74	15.67	147%	93%	156%	26%	93%
2002	0.62	2.00	0.76	2.12	5.50	2.47	5.49	2.96	4.74	15.67	25%	36%	26%	45%	35%
2003	2.44	4.25	3.56	4.56	14.81	2.47	5.49	2.96	4.74	15.67	99%	77%	120%	96%	95%
2004	1.00	4.00	1.25	4.56	10.81	2.47	5.49	2.96	4.74	15.67	40%	73%	42%	96%	69%
2005	9.25	11.22	3.79	2.13	26.39	2.47	5.49	2.96	4.74	15.67	374%	204%	128%	45%	168%
2006	1.63	1.05	5.07	3.37	11.12	2.47	5.49	2.96	4.74	15.67	66%	19%	171%	71%	71%

Historical Precipitation Report

Field Office 130 **Rain Gauge Name:** Salt House **Rain Gauge Number:** 11

	Seasonal Precipitation Amounts					Annual Average					Percent of Normal				
Year	Fall	Winter	Spring	Summer	Annual	Fall	Winter	Spring	Summer	Annual	Fall	Winter	Spring	Summer	Annual
1978	2.36	10.00	4.91	2.70	19.97	2.76	6.59	3.85	5.64	18.83	86%	152%	128%	48%	106%
1979	6.50	8.00	2.57	7.13	24.20	2.76	6.59	3.85	5.64	18.83	236%	121%	67%	126%	128%
1980	0.16	11.25	7.00	4.84	23.25	2.76	6.59	3.85	5.64	18.83	6%	171%	182%	86%	123%
1981	1.35	3.70	4.26	5.51	14.82	2.76	6.59	3.85	5.64	18.83	49%	56%	111%	98%	79%
1982	1.18	5.53	6.86	12.02	25.59	2.76	6.59	3.85	5.64	18.83	43%	84%	178%	213%	136%
1983	6.18	9.39	5.14	3.92	24.63	2.76	6.59	3.85	5.64	18.83	224%	143%	133%	70%	131%
1984	2.57	3.86	0.95	12.41	19.79	2.76	6.59	3.85	5.64	18.83	93%	59%	25%	220%	105%
1985	2.33	8.55	2.18	2.36	15.42	2.76	6.59	3.85	5.64	18.83	84%	130%	57%	42%	82%
1986	4.58	3.09	5.93	5.92	19.52	2.76	6.59	3.85	5.64	18.83	166%	47%	154%	105%	104%
1987	2.16	6.15	4.20	5.95	18.46	2.76	6.59	3.85	5.64	18.83	78%	93%	109%	106%	98%
1988	6.71	3.50	5.50	3.65	19.36	2.76	6.59	3.85	5.64	18.83	243%	53%	143%	65%	103%
1989	0.95	5.79	2.17	1.63	10.54	2.76	6.59	3.85	5.64	18.83	34%	88%	56%	29%	56%
1990	0.68	5.44	4.33	11.28	21.73	2.76	6.59	3.85	5.64	18.83	25%	83%	112%	200%	115%
1991	1.24	6.97	3.09	5.14	16.44	2.76	6.59	3.85	5.64	18.83	45%	106%	80%	91%	87%
1992	1.95	7.60	8.11	3.64	21.30	2.76	6.59	3.85	5.64	18.83	71%	115%	211%	65%	113%
1993	4.00	17.06	3.84	6.50	31.40	2.76	6.59	3.85	5.64	18.83	145%	259%	100%	115%	167%
1994	3.94	5.48	3.08	15.75	28.25	2.76	6.59	3.85	5.64	18.83	143%	83%	80%	279%	150%
1995	3.46	8.62	7.98	4.65	24.71	2.76	6.59	3.85	5.64	18.83	125%	131%	207%	82%	131%
1996	0.38	6.12	1.37	5.38	13.25	2.76	6.59	3.85	5.64	18.83	14%	93%	36%	95%	70%
1997	3.30	7.45	0.25	8.00	19.00	2.76	6.59	3.85	5.64	18.83	120%	113%	6%	142%	101%
1998	1.63	7.87	4.25	5.75	19.50	2.76	6.59	3.85	5.64	18.83	59%	119%	110%	102%	104%
1999	2.01	0.99	2.87	10.00	15.87	2.76	6.59	3.85	5.64	18.83	73%	15%	75%	177%	84%
2000	0.88	4.00	0.88	0.26	6.02	2.76	6.59	3.85	5.64	18.83	32%	61%	23%	5%	32%
2001	3.78	7.12	4.20	0.93	16.03	2.76	6.59	3.85	5.64	18.83	137%	108%	109%	16%	85%
2002	1.44	1.25	0.50	2.56	5.75	2.76	6.59	3.85	5.64	18.83	52%	19%	13%	45%	31%
2003	2.13	5.00	4.62	5.38	17.13	2.76	6.59	3.85	5.64	18.83	77%	76%	120%	95%	91%
2004	1.43	6.82	1.06	4.19	13.50	2.76	6.59	3.85	5.64	18.83	52%	104%	28%	74%	72%
2005	9.35	13.49	4.00	2.63	29.47	2.76	6.59	3.85	5.64	18.83	339%	205%	104%	47%	156%
2006	1.38	0.93	5.56	3.44	11.31	2.76	6.59	3.85	5.64	18.83	50%	14%	144%	61%	60%

Appendix D:
Wildlife Data

Arizona Game & Fish Unit 13B Mule Deer Population Counts				
Year	**Number of Animals Surveyed**	**Bucks/100 Does**	**Fawns/100 Does**	**Population Estimate**
1985	108	30	50	1000-1500
1986	41	29	18	1000-1500
1987	63	31	44	1163
1988	--	No Data	No Data	No Data
1989	112	71	31	900
1990	63	68	32	900
1991	85	27	37	900
1992	31	24	59	<1000
1993	117	126	52	800-1000
1994	143	69	52	No Estimate
1995	88	183	79	No Estimate
1996	154	87	33	No Estimate
1997	64	77	29	No Estimate
1998	156	43	45	No Estimate
1999	145	51	35	No Estimate
2000	155	49	36	No Estimate
2001	275	34	67	No Estimate
2002	118	46	20	No Estimate
2003	84	29	46	No Estimate
2004	102	34	57	No Estimate
2005	128	65	72	No Estimate