APPENDIX A
PRODUCTION AND UTILIZATION OF SHRUB AND HERBACEOUS SPECIES ON KEY AREAS

Sagebrush Production and Utilization

Production and utilization data for sagebrush (*Artemesia tridentata wyomingensis*) are collected at ten sites in the Cody Region (Tables 1 and 2 and Figures 1 and 2). Sites were selected using a "key area" concept, whereby if utilization levels are within acceptable limits at these areas, there is reasonable assurance that utilization levels are acceptable over the entire herd unit area. Production is measured in September/October using the leader length method described in WGFD Wildlife Division Vegetation/Habitat Monitoring Protocol (August 1, 2004). Utilization is measured in April/May using a modified Cole browse method described in WGFD Wildlife Division Vegetation/Habitat Monitoring Protocol (August 1, 2004).

Table 1. Production expressed as average annual leader length in centimeters for sagebrush transects in the Cody Region.

Transect	2010	2011	2012	2013	2014	Long-term Average
Breteche	1.46	3.58			3.56	2.48
Aldrich	0.46	0.27			2.75	1.23
Grass Creek	3.70	3.42	0.29	1.94	2.57	2.67
Wagonhound	1.68	3.71	1.75	2.72	2.72	2.27
Dry Creek Basin	2.20	4.83	0.55	2.42	4.37	2.57
Five-mile	1.93	5.71	0.74	2.46	3.57	3.10
Denver Jake	3.18	1.95	0.84	1.40	1.36	1.62
Lightning Ridge	1.60	1.90	0.76	1.00	1.56	1.39
Alkali	3.43	4.13	2.10	2.10	1.80	2.57
Renner				2.73	2.76	2.19
Average of Transects	2.26	3.25	1.08	1.93	2.70	2.24

Table 2. Utilization expressed as percent leaders browsed for sagebrush transects in the Cody Region.

Transect	2011	2012	2013	2014	2015	Long-term Average
Breteche		9.4	24.5	7.4		21.86
Aldrich	2.00	5.80	4.60	0.60	0.00	5.67
Grass Creek	0.00	0.60	0.40	0.00	0.00	1.91
Wagonhound	31.40	26.20	25.40	17.60	8.20	16.09
Dry Creek Basin	37.80	44.20	37.40	20.60	35.20	23.64
Five-mile	9.50	0.20	23.50	20.20	21.20	17.07
Denver Jake	13.30	26.20	18.80	1.60	2.40	13.23
Lightning Ridge	2.00	5.00	3.80	0.00	2.00	4.20
Alkali	4.60	17.60	21.60	4.80	10.20	11.29
Renner				13.40	1.00	13.40
Average of Transects	11.29	13.54	16.12	8.62	8.91	11.81

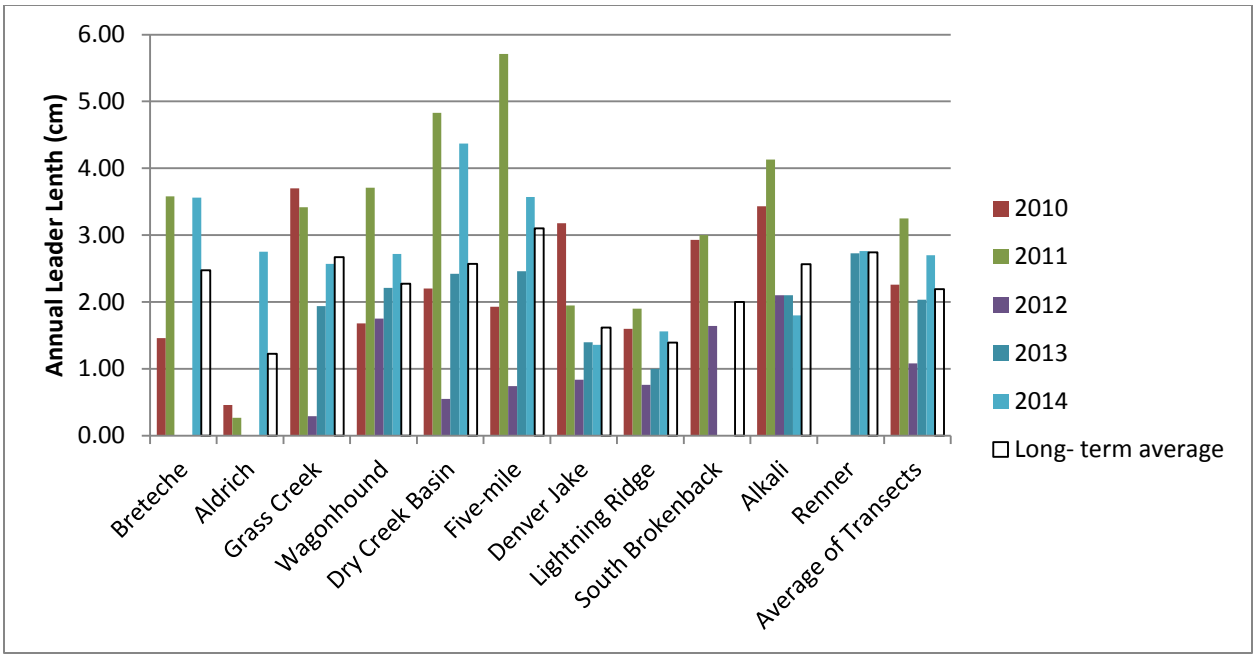

Figure 1. Average annual leader length for sagebrush transects in the Cody Region

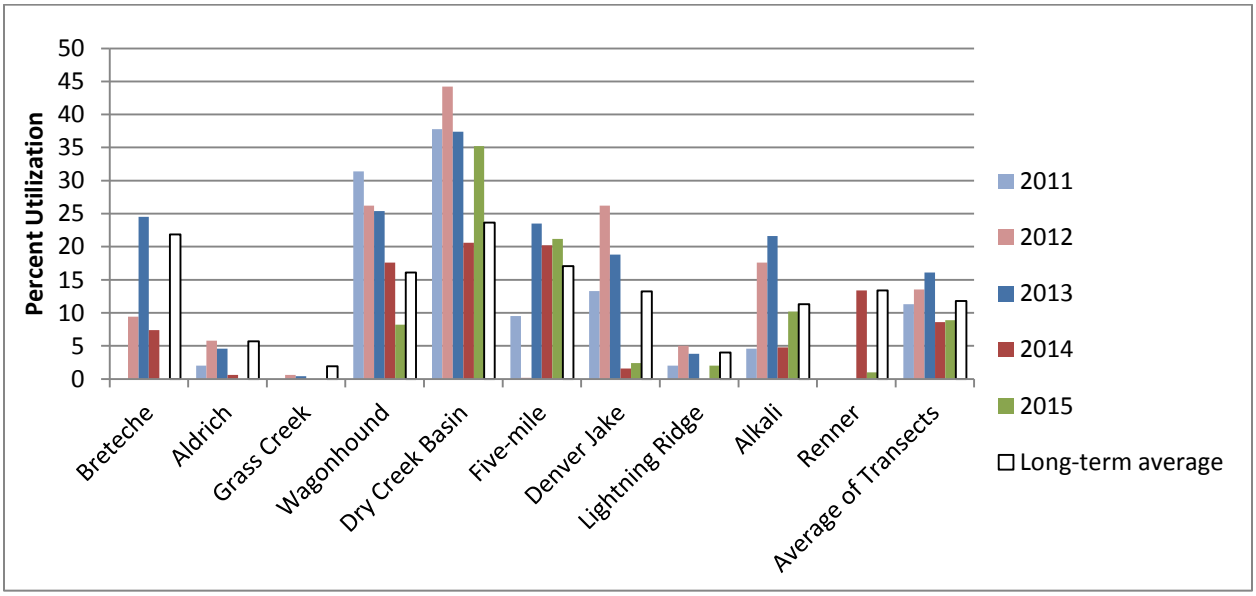

Figure 2. Percent utilization for sagebrush transects in the Cody Region

Curlleaf Mountain Mahogany Production and Utilization

Production and utilization data for curlleaf mountain mahogany (*Cercocarpus ledifolias*) are collected at two sites in the Cody Region (Table 3 and Figures 3 and 4). Sites were selected using a "key area" concept, whereby if utilization levels are within acceptable limits at these areas, there is reasonable assurance that utilization levels are acceptable over the entire herd unit area. Production and utilization

are measured in September/October and April/May, respectively, using the twig length measurement method described in Utilization Studies and Residual Measurements, BLM Technical Reference 1734-3 (1996).

Table 3. Production expressed as average annual leader length in centimeters for curlleaf mountain mahogany transects in the Cody Region.

Transect	2010	2011	2012	2013	2014	Long-term Average
Red Canyon	6.35	5.47	4.73	3.28	4.13	4.62
Davis Draw	7.16	6.43	5.12	4.10	4.77	5.02
Average of Transects	5.84	5.84	5.84	3.69	4.45	4.82

Table 4. Utilization expressed as average annual leader length in centimeters and percent of total leader length removed for curlleaf mountain mahogany transects in the Cody Region.

Transect	2011	2012	2013	2014	2015	Long-term Average
Red Canyon	48	63	66	44	61	45
Davis Draw	59	43	63	70	63	59
Average of Transects	54	53	65	57	62	53

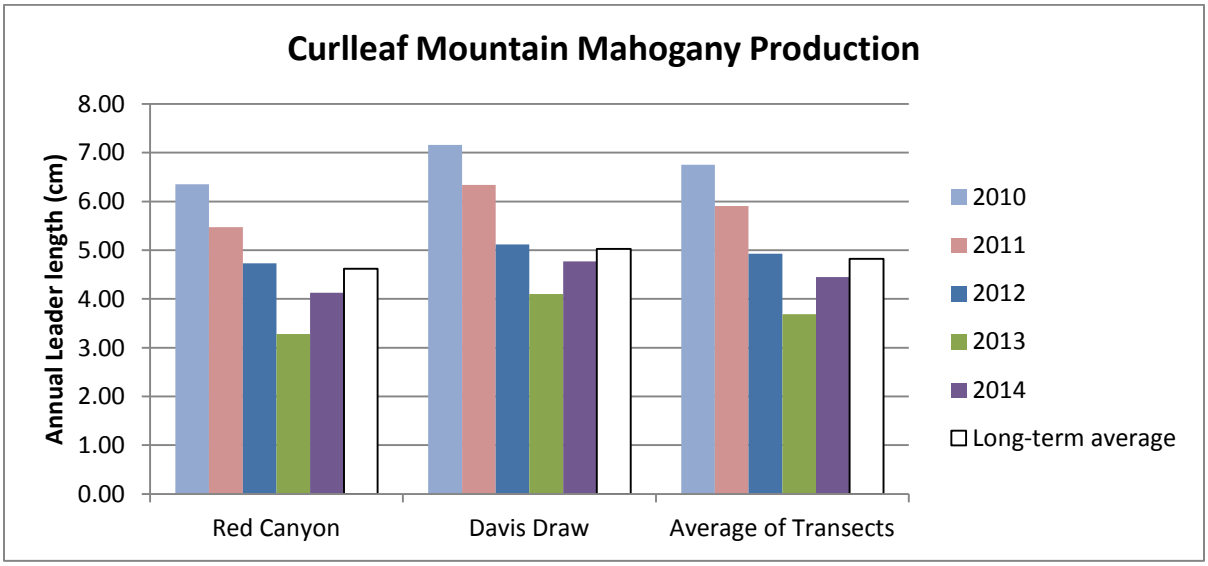

Figure 3. Average annual leader length for curlleaf mountain mahogany transects in the Cody Region.

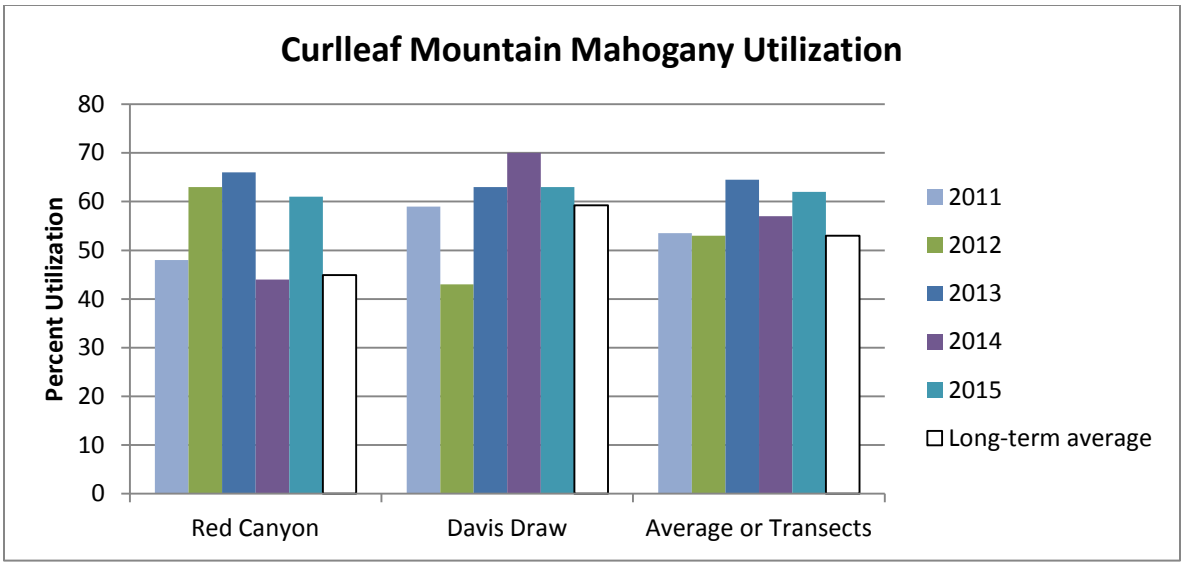

Figure 4. Average percent utilization for curlleaf mountain mahogany transects in the Cody Region.

Herbaceous Production and Utilization

Production and utilization data for herbaceous forage (grasses and forbs) are collected at seven sites in the Cody Region (Tables 4 and 5 and Figures 5 and 6). Sites were selected using a "key area" concept, whereby if utilization levels are within acceptable limits at these areas, there is reasonable assurance that utilization levels are acceptable over the entire herd unit area. Production is measured after peak seed ripe of key grass species by clipping and weighing samples. Utilization is measured by clipping and weighing samples inside and outside of a range cage just prior to green-up in the spring. Utilization is assumed to be primarily by elk unless noted. Methods can be found in WGFD Wildlife Division Vegetation/Habitat Monitoring Protocol (August 1, 2004).

Table 5. Production in pounds per acre for herbaceous transects in the Cody Region.

Transect	2010	2011	2012	2013	2014	Long-term Average
Trail Creek	625	740	350	350	563	486
Riddle Flat	500	400	412	500	525	451
Bald Ridge	500	400	380		1588	632
Painter Gulch	583	460	260	175	375	371
Little Bald Ridge	470	380	270	430	650	440
Teepee Gulch	460	280	260	320	638	392
Rose Creek	700	383	166	350	567	382

Table 6. Percent utilization for herbaceous transects in the Cody Region.

Transect	2011	2012	2013	2014	2015	Long-term Average
Trail Creek	47	23	61			42
Riddle Flat	78	91	82	75	81	73
Bald Ridge	43	4				33
Painter Gulch	31	49	65	0	47	38
Lt Bald Ridge	89	81	50	67	58	69
Teepee Gulch	85	82	81	79	73	80
Rose Creek	64	50	57		0	35

Figure 5. Production for herbaceous transects in the Cody Region.

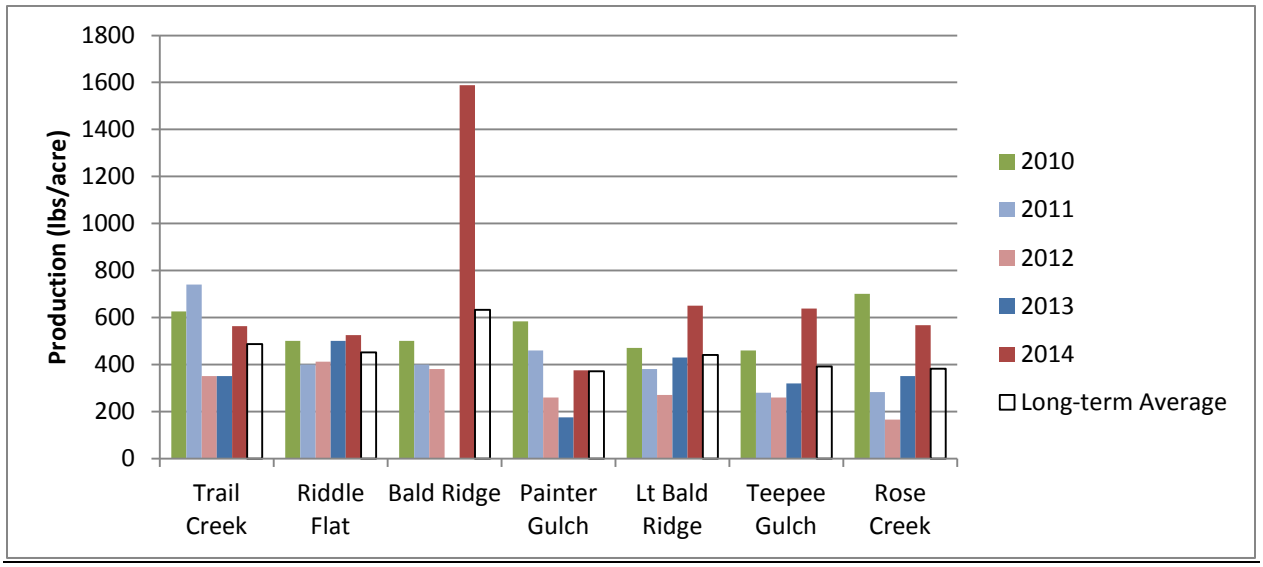

Figure 6. Percent utilization for herbaceous transects in the Cody Region.