

WILDLIFE MANAGEMENT UNIT - 5 - EAST CANYON

Boundary Description

Morgan, Summit, Salt Lake, and Davis counties - The boundary begins at the junction of I-80 and I-84 (Echo Junction); south and west on I-80 to Interstate 15; north on I-15 to I-84; east on I-84 to I-80.

Management Unit Description

The East Canyon deer herd unit is located mostly on the east side of the Wasatch Mountains. The topography varies across the unit from fairly deep canyons and steep slopes in the western portion to more gentle open slopes and fewer cliffs in the east. Most of the unit is drained by the Weber River. Several creeks along the north and east edges of the unit drain directly into the river. The East Canyon Creek flows into the Weber River. East Canyon Reservoir is located approximately in the center of the unit. The highest elevations are along the western boundary on peaks of the Wasatch Range which reach above 9,500 feet. The lowest point is 4,800 feet in the northwest corner where the Weber River flows out of the unit.

The upper limits of normal winter range are generally considered to be about 7,000 feet. Winter range is found in the major drainages and around East Canyon Reservoir. All of the valleys have been developed for agriculture and housing. The major canyons, Weber, East, and Main Canyons, contain housing developments and high-use roads. The northern, eastern, and southern boundaries are formed by Interstates 80 and 84. Other more narrow and higher elevation canyons have seasonal roads. The area is highly developed because a majority of the unit is private land. Approximately 83% of the deer winter range and 76% of the summer range is under private ownership. As of 2006, approximately 35% of the unit was winter range. Not only is the quantity of winter range limited, but the quality is compromised by development and roads. Many deer that summer on the unit migrate over to the Davis County side of the unit (Wasatch Face) to winter. Winter migration into the unit from other areas is minimal.

Most of the winter range is comprised of sagebrush range types. In the original inventory in 1972, King and Olson (1972) described almost three-quarters of the winter range as a mixture of black sagebrush on the ridge tops and big sagebrush down the slopes on the deeper soils. The sagebrush type has a good mix of browse species and can provide substantial forage for wintering deer. This browse type, which is 20% of the total range, is composed mainly of big sagebrush and Gambel oak. Other range types include agricultural lands and burns.

Recently, increased numbers of people and deer have lead to conflicts and degradation of the winter range. Heavy deer and livestock use has resulted in downward trends on much of the range. Soil erosion, removal of perennial herbaceous cover, and heavy use of browse species are the major problems. Highway mortality occurs, but is not as high here as on surrounding units. Harvesting depredating deer is difficult because of access restrictions to private land. Since a majority of the land is privately-owned, reducing the deer herd to within the carrying capacity of the winter range must be done with the cooperation and support of local interest groups.

Unit Management Objectives

The management objective is to maintain a target wintering deer herd of approximately 7,000 deer. The Davis and Salt Lake County portion of Unit 5 contains most of the public land in the unit. Winter ranges are adjacent to the heavily populated Wasatch Front and are becoming limited due to the impact of urban development. The herd composition goal for the East Canyon management unit is 25 bucks per 100 does and 65 fawns per 100 does (Hersey and McLaughlin 2005).

The management objective for elk is to maintain a winter herd size of 1,000. The objective for herd composition is to maintain ratio of 8 bulls per 100 cows. Fifty percent of the bulls are planned to be 2.5 years of age or older (1998 Utah Big Game Management Plan and personal communication with Craig

McLaughlin).

The East Canyon deer herd unit, like the neighboring Morgan-Rich unit, has several management concerns related to the high percentage of private ownership. The concerns listed in the 1984 trend study report (Giunta et al. 1986) continue to persist. These concerns relate to access, range management, rehabilitation, and development on the privately owned winter range. The DWR has purchased winter range in the Redrock Canyon area. The herd unit remains on the top of the priority list of units requiring winter habitat acquisition.

Trend Study Site Description

Ten trend studies were established in the East Canyon unit between 1983 and 1985. These 10 studies were reread in 1990. Eight of the 10 studies were read again in 1996 and a new study was established in Red Rock Canyon. During the 2001 season, 7 of the 11 trend studies were reread. In 2006, 6 of the 11 trend studies were reread. Individual study site descriptions, maps, and data tables are found below.

SUMMARY

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Six trend studies were read in 2006. Greary Hollow (5-1) was suspended in 2006 due to low animal use in previous years. The key browse species on all sites were mountain big sagebrush, antelope bitterbrush, or a mountain big sagebrush/basin big sagebrush hybrid. The soil trends were mostly stable in 2006, with the exception of Red Rock Canyon which was slightly down.

Vegetative trends are dependent upon annual and spring precipitation patterns. Precipitation data from this herd unit was compiled from the Morgan, Bountiful, and Wanship Dam weather stations (Figures 1 and 2). Although the precipitation data is not complete, it appears that spring precipitation in 2000, 2001, and 2002 was below 75% of normal (Figure 2). Spring precipitation is essential for the recruitment of browse seedlings and the establishment of perennial native grasses and forbs. The declining browse trends, discussed further below (Figure 3), are quite possibly caused by this low precipitation between 2000 and 2002. This drought is also the likely cause of declining perennial forbs and grasses.

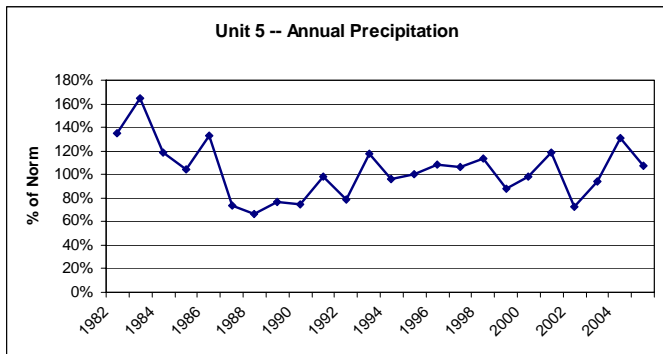


Figure 1. Annual precipitation in unit 5. Precipitation data was collected in Morgan, Bountiful, and at Wanship dam.

from 2001 to 2006 (Figure 3). Browse trends were down for Tuscon Hollow and East Canyon Reservoir, and slightly down for Wanship and Barnard Creek. The average sagebrush density has declined steadily since 1996 (Figure 4). Average sagebrush density decreased from 1,416 plants/acre in 1996 to 1,227 in 2001, to 1,017 in 2006. Every site, with the exception of 2 sites with small sagebrush populations (Barnard Creek and Red Rock Canyon), have decreased in sagebrush density since 1996. The two sites which have not decreased are low-density sites where bitterbrush is the dominant browse species or burned. The sagebrush decadence increased from an average of 12% of the population in 1996 and 2001 to 17% (Figure 5). Despite the decreases in sagebrush numbers and slight increase in decadence, average sagebrush cover increased from 5% to 7% (Figure 6). Some of the loss of sagebrush is due to an infestation of the sagebrush defoliator moth (*Aroga websterii*) in the herd unit. The

only study where the moth was identified was East Canyon Reservoir; it was estimated that 46% of the population showed signs of infestation. It is possible that other sites were infested, but showed no signs of the moth at the time the study was read.

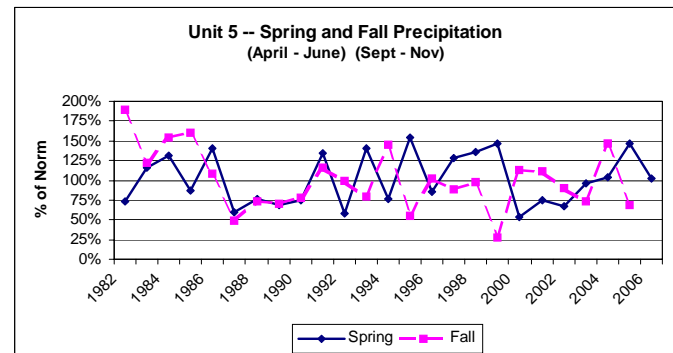


Figure 2. Spring and fall precipitation in unit 5. Precipitation data was collected in Morgan, Bountiful, and at Wanship dam.

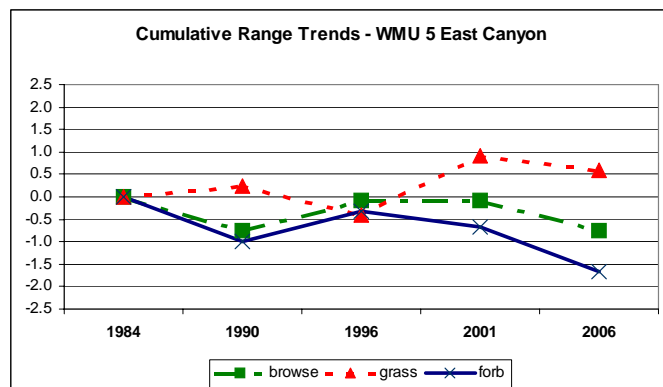


Figure 3. Cumulative Range Trends for unit 5, East Canyon.

The overall herbaceous understory has improved slightly since 1996 due to an increase in perennial grasses since 1996. A large part of the improvement is due to seeded grasses after the fires at the Wanship and Red Rock Canyon sites. The average grass trends have decreased since 2001 (Figure 3). Grass trends were down at only Tuscon Hollow. The

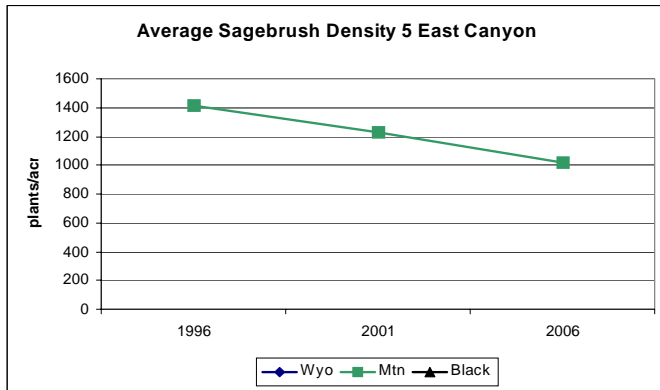


Figure 4. Average Sagebrush Density for unit 5.

average bulbous bluegrass cover for the unit increased from 1% in 1996 to 9% in 2006 and cheatgrass cover remained relatively unchanged. At some sites, it appears that the bulbous bluegrass displaced cheatgrass and Japanese brome. It is quite possible that part of the decline in sagebrush is due to inability of sagebrush seedlings to establish in the thick grass cover. The average cheatgrass cover and nested frequency has remained fairly unchanged since 2001 (Figures 7 and 8). Since 2001, cheatgrass cover increased at 3 sites, remained unchanged at 2 sites and decreased at 1 site. Japanese brome has been sampled on 4 of the 6 studies since 1996, at 3 of which the Japanese

brome provided at least 2% cover.

In 2001, perennial grasses increased substantially in cover and nested frequency and changed little by 2006 (Figures 7 and 8). Two of the six studies, Wanship and Redrock Canyon, had been burned previous to 1996, so a large part of the increase was due to establishment of grasses on the burns. Tuscon Hollow, however, was not recovering from fire, but showed a large increase in perennial grasses.

The average forb trends in the unit decreased from 1996 to 2006, although the average nested frequency and cover changed little (Figures 3, 7, and 8). Forb trends were down at East Canyon Reservoir, Barnard Creek, and Red Rock Canyon and slightly down at Tuscon Hollow. Part of this decrease in trends is due to a decline in desirable forb species, especially on the sites that were burned and seeded, and part is due to an increase in annual forb species. The establishment of noxious weeds also decreased the trends. The noxious weed, dyer's woad, was present at the Davis County Rifle Range and Barnard Creek sites in 2006. It was not sampled in quadrats at the Davis County Rifle Range, but was identified within the study area. The dyer's woad at Barnard Creek was first sampled in quadrats in 1996, and has continually increased with each sample.

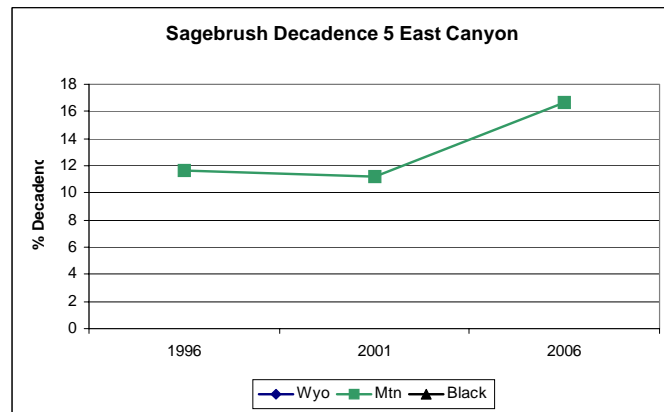


Figure 5. Sagebrush decadence in unit 5.

The unit-wide Desirable Components Index score averages increased from poor to fair from 1996 to 2001, then declined to poor again in 2006. The poor DCI scores in 2006 are mainly due to increases in sagebrush decadence and decreases in perennial forb cover.

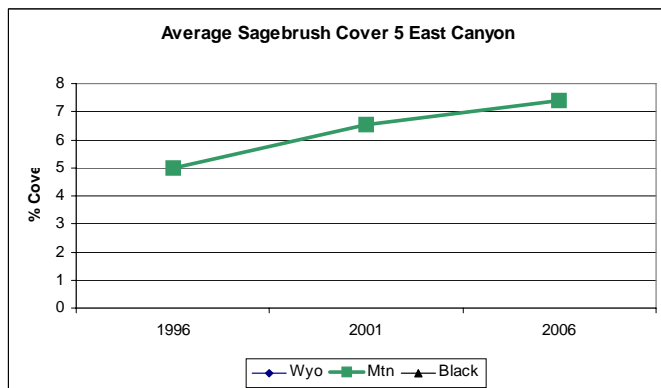


Figure 6. Average sagebrush cover for unit 5.

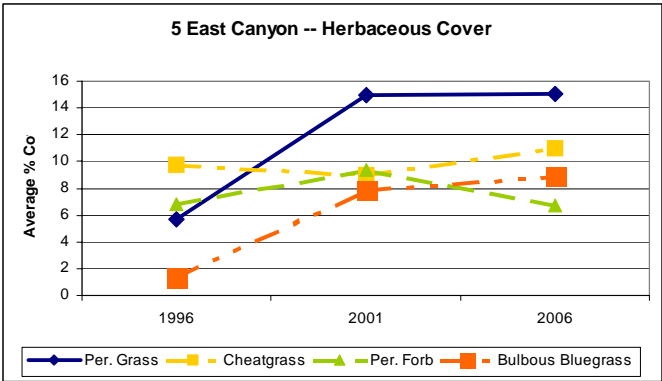


Figure 7. Unit 5 herbaceous cover.

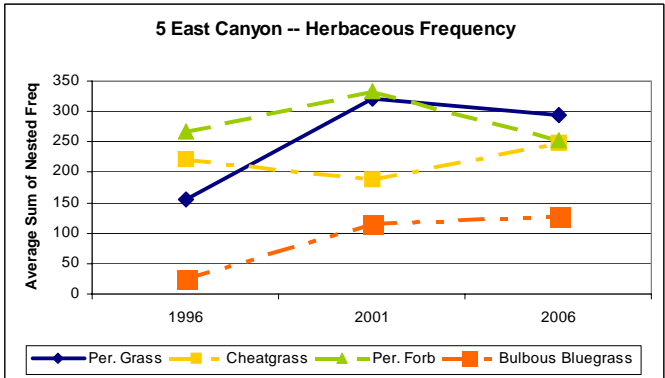


Figure 8. Unit 5 herbaceous nested frequency.

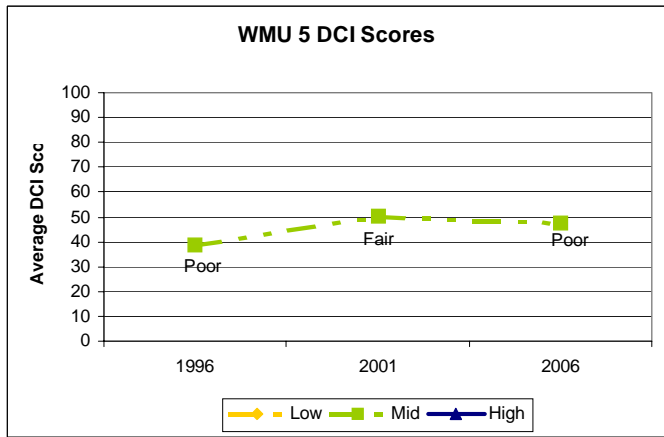


Figure 9. Unit 5 average Desirable Components Index scores by year. The Desirable Components Index ratings are divided into 3 categories based on different ecological potentials, which include: Low, Mid-level, and High.