

WILDLIFE MANAGEMENT UNIT 2 - CACHE

Boundary Description

Cache, Rich, Weber, and Box Elder counties - Boundary begins at the Utah-Idaho state line and I-15; south on I-15 to US-91; northeast on US-91 to SR-101; east on SR-101 to Hardware Ranch and USFS Road 054 (Ant Flat); south on USFS 054 to SR-39; east on SR-39 to SR-16; southeast on SR-16 to the Utah-Wyoming state line; north along this state line to the Utah-Idaho state line; west along this state line to I-15.

Unit 2 Description

Overall, unit 2 can be divided into three main areas which are isolated, to some extent, from one another. The first part is the Wellsville Mountains and their northern extension, Clarkston Mountain. The eastern half, mostly agricultural land in Cache Valley, is not used much by wintering deer. The second area is Cache Valley with its summer range on the Cache National Forest to the east. Big game summer on the forest and use the winter ranges in the canyons and upper benches of the valley. The third area is Rich County, which includes a vast area of private and public range land on the east side of the Cache National Forest, extending to the Wyoming state line. Prior to 1993, these three areas were managed as separate deer herd units. In 1993, these areas were combined into Wildlife Management Unit 2.

The Wellsville Mountains have remained relatively inaccessible because of the steep topography. Rising abruptly from the valley floor, the ridge of the Wellsville Mountains reaches over 9,300 feet in elevation. The upper limit for normal winter range is generally 7,000 feet, but in severe winters that limit drops to about 6,000-6,500 feet. In some canyons the upper limit drops to 6,000 feet and excludes the north slopes. Box Elder Canyon reaches a low limit at 5,400 feet. The lower limit follows an elevation of 4,400 feet. Most deer summer on the east side of the Wellsville Mountains and migrate to the west side each fall for winter range. Coldwater Canyon is the most notable concentration area for deer and there is some migration from the Mantua-Willard herd unit. Most deer that winter on Clarkston Mountain, summer on the Caribou National Forest in Idaho. Other big game species found on the Wellsville mountains include introduced Rocky Mountain bighorn sheep and a few elk. Neither species is numerous, but should be considered in management decisions, especially concerning grazing. Land development and associated habitat loss is still the most critical problem facing Wildlife Management in this area.

The majority of the deer range, along with the largest deer herd, are within the Cache County portion of the unit. Most of this herd summers at higher elevations in the Wasatch-Cache National Forest, west of the Wasatch range summit. The majority of the winter range is also on Forest Service land. The south-facing slopes of Blacksmith Fork, Logan, Dry, Providence, and Millville canyons are all important wintering areas. The lower winter range limits are restricted by the upper limits of the towns and cities of Cove, Richmond, Smithfield, Hyde Park, North Logan, Logan, Providence, Millville, Nibley, and Hyrum. These limits to the winter range also include the deer-proof fence above agricultural land between Hyrum and Logan. Between Hyde Park and the Idaho border, the lower third of the winter range is located on private land and is threatened by increased cultivation and subdivision developments.

The Rich County portion of the Cache deer herd unit, located on the east face of the Wasatch Range, is topographically similar to the west face. However, the drainages of Swan Creek, Garden City Canyon, Jebo Canyon, Cottonwood Canyon, and Temple Canyon are not as deep as those on the west face. Elevation ranges between 5,900 feet at Bear Lake and 9,114 feet on Swan Peak. Randolph and Woodruff are the principle municipalities located in Rich County. These towns are located on a strip of private land along the Bear River. Much of the lower country is privately owned and is grazed or farmed. Estimates are that 74,560 acres (33%) of the winter range is private land (Jense et al. 1985). A much higher percentage of the severe winter range is private. The BLM owns a majority of the winter range, controlling much of the land in the central part of the unit and the Crawford Mountains to the east. The upper limits of the winter range begin at about 8,000 feet at the Idaho border and gradually descend to 6,000 feet at Cottonwood Canyon. The lower limits generally

follow the 6,000-foot contour.

Big Game Trends

The current management objective is to maintain a target winter herd of 25,000 wintering deer and maintain a buck/doe ratio of 13 bucks to 100 does and a fawn/doe ratio of 82 fawns to 100 does (Hersey and McLaughlin 2005). To meet this objective, a projected yearly harvest of about 3,300 bucks will be required. Antlerless deer harvest will be adjusted yearly to meet population objectives.

Current management objectives for elk are to maintain a target population of 2,300 wintering elk with a bull-to-cow ratio of 8 bulls to 100 cows. Fifty percent of the bulls are to be 2½ years of age or older (Hersey and McLaughlin 2005).

Trend Study Description

A total of 29 study sites were established in the unit in 1984 and read again in 1990 and 1996. During the 1990 season, 5 new studies were added. All of these were reread in 1996 along with 5 additional new studies. In 2001, 31 trend studies were monitored, while 8 studies were suspended. In 2006, 26 studies were monitored, while 6 more studies were suspended and will be reevaluated during the next rotation. Coldwater WMA was established 1998 and was monitored in 2006. All of the studies sample big game winter range.

SUMMARY

MANAGEMENT UNIT 2 - CACHE

Management unit 2 is large, covering the Wellsville Mountains, the Cache Valley, the Cache National Forest, and the extensive rangeland around Woodruff, Randolph, and Bear Lake. Twenty six studies were monitored in 2006 and the majority of the studies were established in 1984. The Cache Valley and Bear Lake studies are typically mountain big sagebrush communities that have poor herbaceous understory dominated by annual grasses and weedy forbs. The Woodruff and Randolph area is dominated by Wyoming big sagebrush communities and have good perennial grass understories.

Precipitation data from Cache county average 19 inches of annual precipitation (Fig. 1). Drought conditions (less than 75% of annual precipitation) were experienced in 1988-1990, 1992, and 2000-2002. Spring precipitation is essential for shrub and perennial grass and forb recruitment. Lower than normal precipitation, especially in consecutive years, likely plays a primary role in increased decadence and decreased reproduction in shrub populations, primarily big sagebrush. Spring (April-June) precipitation was less than 75% of normal in 1982, 1985, 1989, 1992, 1994, 2000-2004, and 2006. Annual precipitation for Rich county averages about 10 inches. Drought conditions were experienced in 1988, 1992, and 2000-2002. Spring (April-June) precipitation in Rich county was less than 75% of normal in 1984, 1985, 1987, 1988, 1992, 1994, 1996, and 2000-2002.

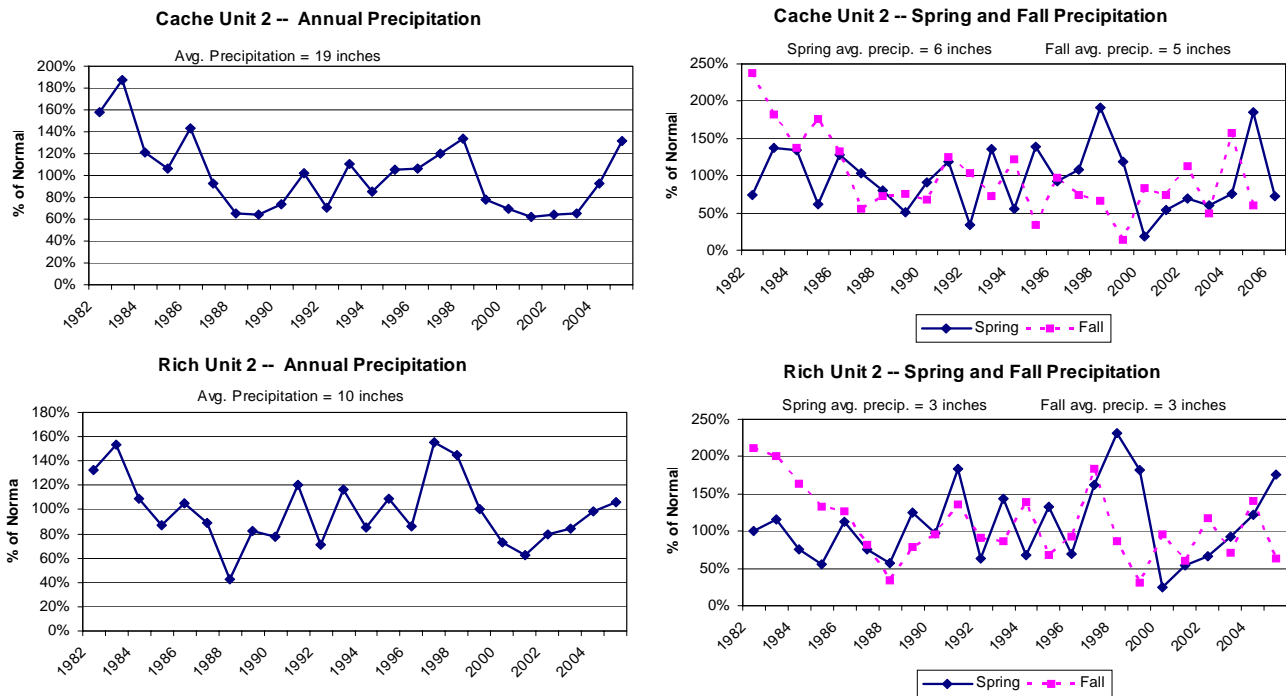


Figure 1. Precipitation graphs for the Cache and Rich unit. Data is percent of normal precipitation averaged for weather stations in Logan and Brigham City for Cache (above) and Woodruff for Rich (below). Spring months include April-June and fall months include September-November (Utah Climate Summaries 2006).

The Desirable Component Index (DCI) for the mid-potential studies (mountain big sagebrush) in unit 2 averaged a poor rating from 1996 to 2006 (Fig. 2). These studies typically only average 6-7% browse cover (Fig. 3) and the herbaceous understory's are dominated by annual grasses and weedy forbs. Recruitment from young sagebrush and other shrubs has been minimal the last 3 readings and the competitive understory may be

limiting them from replenishing the population. The low-potential studies (Woodruff area) averaged a good rating from 1996 to 2006 (Fig. 2). The average Wyoming big sagebrush density decreased in 2006 (Fig. 3), but still averages 4,000 plants/acre.

The cumulative browse trend for Wyoming big sagebrush studies has remained relatively stable until 2006, when they declined (Fig. 4). Drought conditions were experienced for 3 years in 2000-2002 and the decrease in sagebrush cover and density (Fig. 3) were likely a result. Decadence continued to remain near 35% (Fig. 5) in 2006. The browse trends for the mountain big sagebrush studies have steadily been declining since 1996. Only 6 out of 17 studies in 2006 had young shrubs to replace

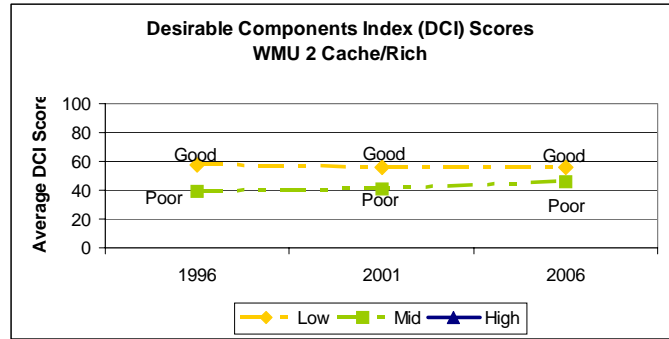


Figure 2. The Desirable Components Index ratings are divided into categories because of different ecological potential, these include: low, mid, and high.

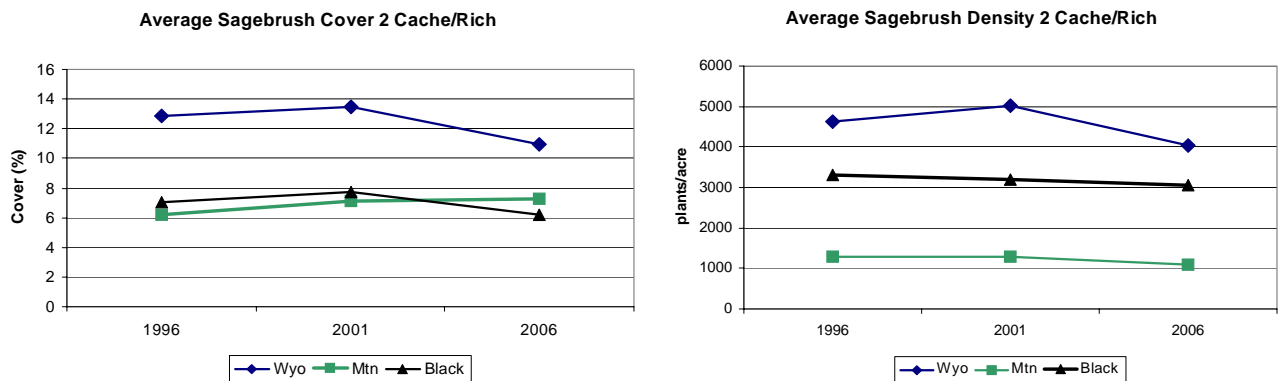


Figure 3. Average sagebrush cover (left) and density (right) for big sagebrush subspecies and black sagebrush across unit 2 from 1996 to 2006.

old, dying plants in the population. As mentioned before, the weedy herbaceous understory is most likely the main culprit (Hall et al. 1999).

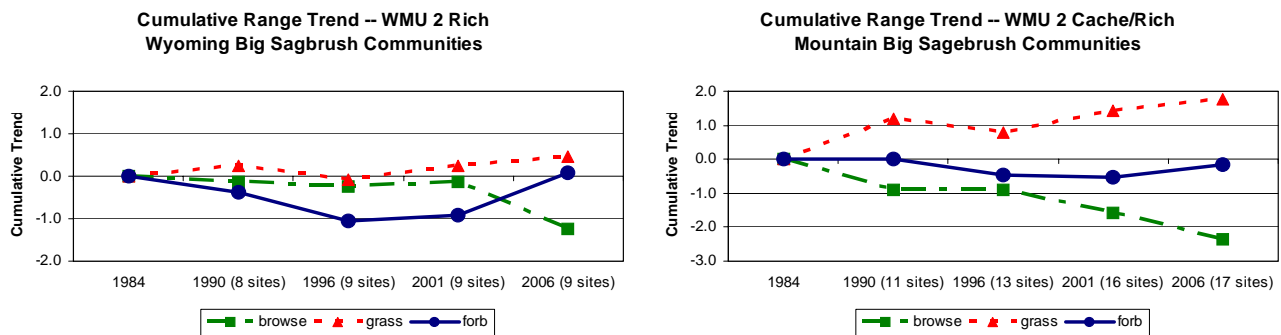


Figure 4 Cumulative range trend for unit separated by sagebrush subspecies, Wyoming big sagebrush (left) and mountain big sagebrush (right), and counties.

Grass trends for both the Wyoming and mountain big sagebrush communities have remained fairly stable (Fig. 4). Average perennial grass cover is very good and has increased slightly from 13% in 1996 to just under 18% in 2006, even though nested frequency has remained very similar year to year (Fig. 6). Cheatgrass is very minimal on the Wyoming big sagebrush studies (Fig. 6), but is prevalent on the mountain big sagebrush

studies. Cheatgrass cover averaged nearly 16% in 1996 on 17 mountain big sagebrush studies and appears to be decreasing as cover averaged 10% in 2001 and 7% in 2006 (Fig. 7). Cheatgrass nested frequency had similar trends as cover from 1996 to 2001, but seemed to level off from 2001 to 2006 (Fig. 7).

Forb trends decreased in 1996 and remained similar in 2001 (Fig. 4). Both cover and nested frequency on both the Wyoming and mountain big sagebrush community types followed this pattern (Fig. 6 and Fig. 7). In 2006, the forb trends, cover, and nested frequency all increased. Changes in forb cover and nested frequency usually fluctuate with increases and decreases in precipitation.

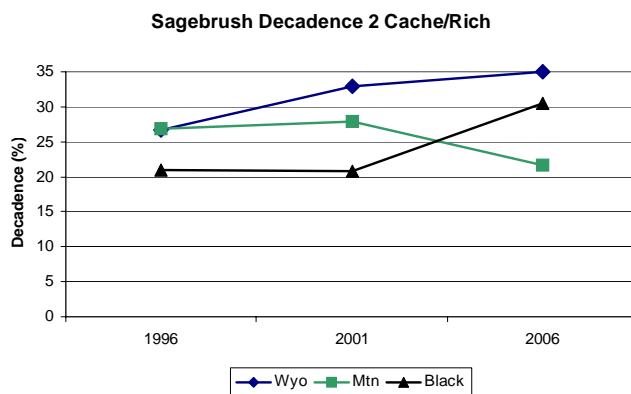


Figure 5. Sagebrush decadence by subspecies in unit 2.

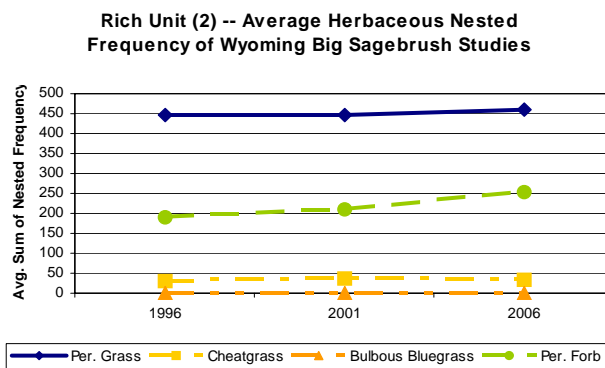
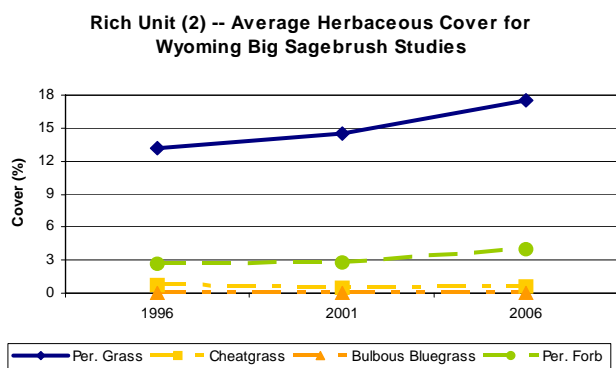


Figure 6. Average herbaceous cover (left) and nested frequency (right) for Wyoming big sagebrush communities in Rich county.

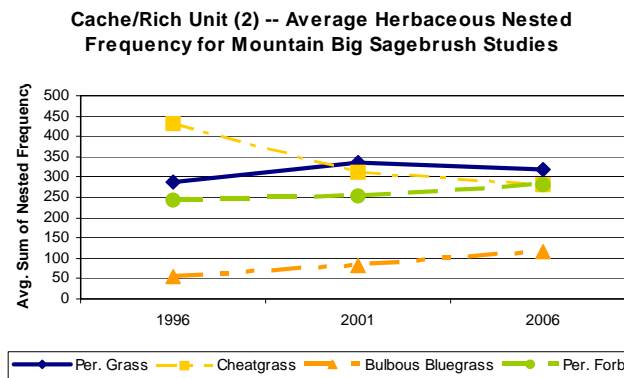
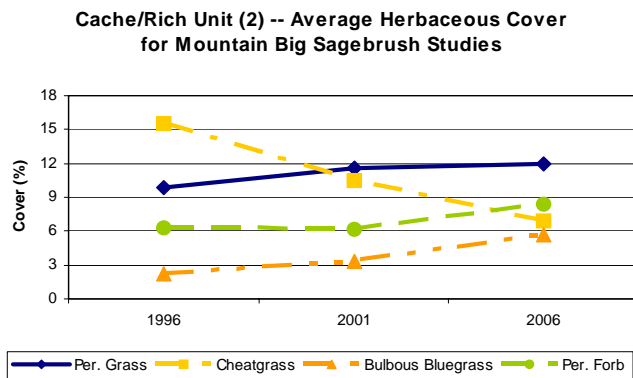


Figure 7. Average herbaceous cover (left) and nested frequency (right) for mountain big sagebrush communities in Cache county and Rich county (Bear Lake area).