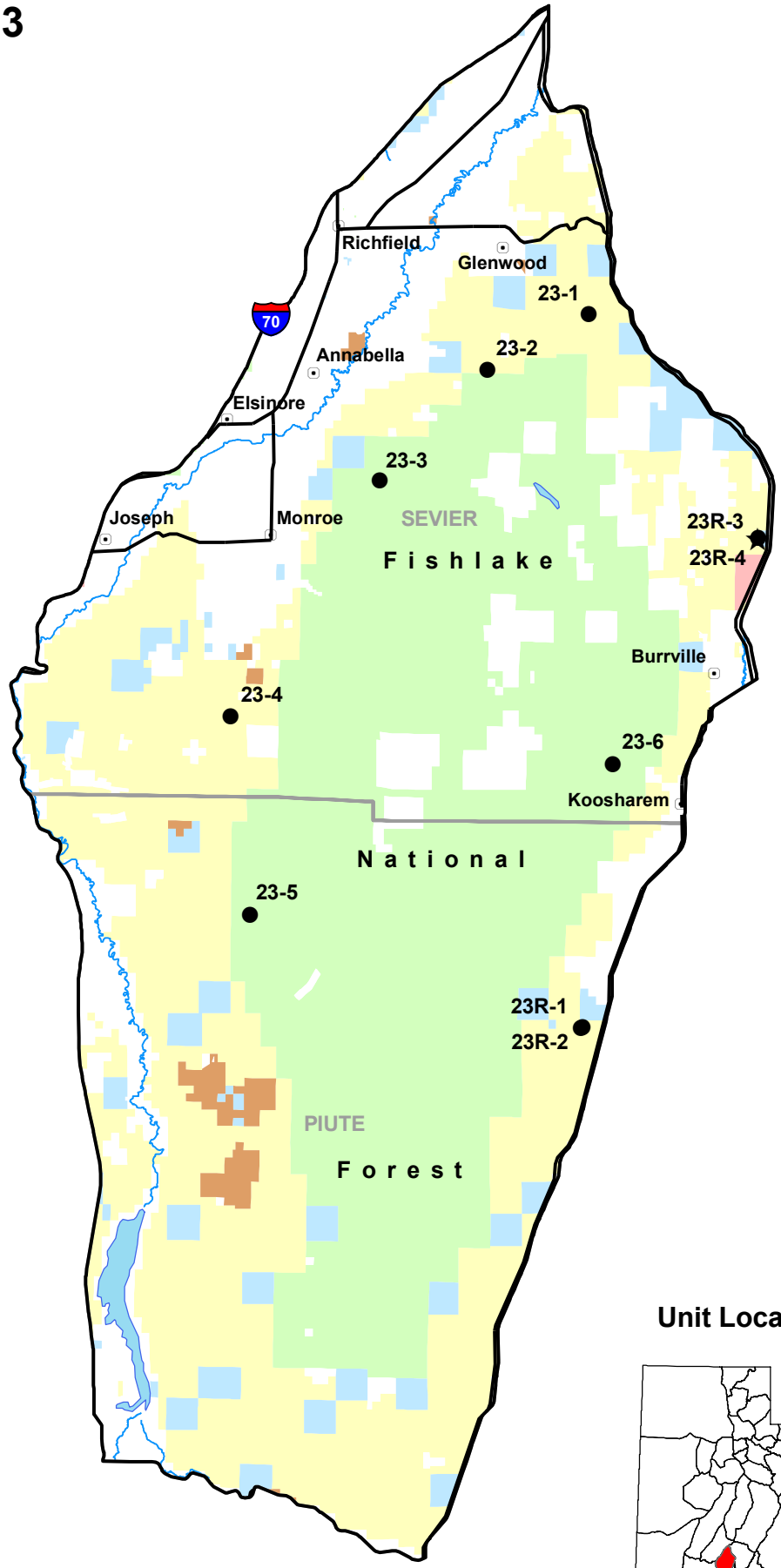
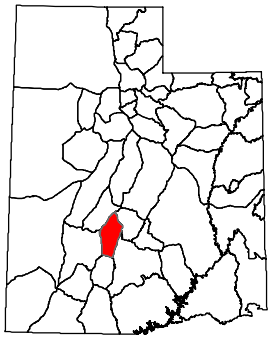
Management Unit 23



- Transect Location
- Suspended Site
- BLM
- USFS
- UDWR
- SITLA
- Private
- Tribal
- Water Body
- County Boundary
- Road
- River

Unit Location



WILDLIFE MANAGEMENT UNIT 23 - MONROE

Boundary Description

Piute and Sevier counties - Boundary begins at I-70 and US 89 at Sevier; south on US-89 to SR-62; east and north on SR-62 to SR-24; north on SR-24 to I-70; south on I-70 to US-89 and beginning point.

Management Unit Description

Unit 23, located in central Utah, completely encompasses Monroe Mountain for which it is named. This mountain is oriented north and south with drainages to the east, south and west. All of the water from the mountain eventually enters the Sevier River, either directly from the west side of the mountain or via tributaries (Otter Creek and the east fork of the Sevier River) on the east and south sides. The top of the mountain is relatively flat and has a good mixture of spruce-fir forests, aspen stands, sagebrush flats, and meadows. Numerous springs, small lakes, and reservoirs provide reliable water sources for both livestock and wildlife. Signal Peak and Monroe Peak are the elevational high points at approximately 11,225 feet (3,421 m). The municipalities located within the unit boundaries are Richfield, Sigurd, Elsinore, Joseph, Sevier, Marysvale, Junction, Kingston, Angle, Greenwich, and Koosharem.

Winter range is still considered the limiting factor for the elk and deer herds in the unit. The upper limits of the normal range extend to 8,000 feet (2,438 m) on the southern end of the mountain and 7,800 feet (2,377 m) on the northern end. During severe winters, the upper limit drops to about 7,800 feet (2,377 m) on the southern end and 6,800 feet (2,073 m) on the northern end. Deer wintering on the north end are particularly susceptible to winter loss during harsh winters when the winter range is severely restricted by deep snows. Winter concentration areas for deer are between Glenwood and Poverty Flat on the west side, and between Burrville and Greenwich on the east side. The elk herd splits each winter, with one part wintering near Greenwich and the other part wintering near Marysvale. Crop depredation problems occur each year in the fields near Greenwich and Monroe. Revegetation of adjacent pinyon-juniper areas is an ongoing task to provide an alternate forage source for these problem animals. In addition, a 2-mile (3.2-km) stretch of experimental high-tension electric fence was built across the top of a field south of Monroe. This fence has helped eliminate depredation problems on that particular field when it is maintained properly.

Huff and Blotter (1964) did the initial winter range survey. They reported acreages and percent cover of preferred deer browse for four general winter range vegetative types. Pinyon-juniper made up 62% of the winter range, with 13% of this composed of browse preferred by deer. The sagebrush, mixed, and mountain brush types cover 27%, 7%, and 4% of the winter range, respectively. With regard to these last three vegetative types, preferred browse comprised 14%, 18%, and 39% of these vegetative types, respectively. The pinyon-juniper type, which provides good protective thermal cover but is a less productive source of preferred browse, appears to be slowly encroaching into other vegetative types. Estimated total acreage for normal winter range is 146,000 acres (59,109 ha). Mann (1985) estimated 2,026 acres (820 ha) needed to be acquired from private landowners to help maintain the herd at its present numbers.

The summer range is in fairly good condition, despite a history of overgrazing by livestock. More restrictive grazing plans may have helped in an upward trend in vegetative composition and vigor in recent years. The gentle topography and abundance of water with an interspersion of forage and cover provide quality fawning, calving, and summering areas for both deer and elk. Fawn production and survival is normally good. The ratio of fawns:100 does was 82 between 1975 to 1984 (Jense et al. 1985). It had fallen to 76 fawns:100 does with the prolonged drought from 1986 to 1990 (Jense et al. 1991). The ratio declined further in 1997 to 1998 to only 58 fawns:100 does but rebounded slightly in 1998 to 1999 to 67. The summer range has an extensive network of roads, with new roads having been proposed for timber sales. These roads and the associated activities can cause stress on the wildlife and affect their land use patterns. Some road closures would be beneficial to the units big game populations in the future. Many summer homes have been built, and more will likely be built in the future on the parcels of private land scattered throughout the summer range. The

mountain is used for camping and fishing during the summer, and hunting in the fall.

Range Trend Studies

Six permanent range trend monitoring studies were chosen by an interagency committee of US Forest Service, BLM, and DWR personnel. These studies include: Bear Ridge (23-1), Saul Meadow (23-2), Thompson Basin (23-3), Poverty Flat (23-4), Smith Canyon (23-5), and Koosharem Canyon (23-6). They were established and sampled in 1985, and resampled in 1991, 1998, 2003, and 2008. Additionally, two studies, Greenwich Disking (23R-1) and Greenwich Native (23R-2), were established in 1997 to monitor a sagebrush disking treatment. Two studies, Plateau Harrow (23R-3) and Plateau Native (23R-4), were also established in 1999 to monitor a sagebrush harrow treatment near Koosharem Reservoir. These four studies were resampled in 2003. In 2008, the Plateau Harrow study was resampled as a regular range trend study, the Plateau Native study was suspended, and the Greenwich Disking and Native studies were resampled as Watershed Restoration Initiative studies.

SUMMARY

WILDLIFE MANAGEMENT UNIT 23 - MONROE

Community Types

Seven trend studies were sampled in 2008. Two studies sampled pinyon-juniper dominated communities (23-1 and 23-3), one study sampled a pinyon-juniper chaining and seeding (23-2), one study sampled a burn (23-4), one study sampled a mountain big sagebrush (*Artemisia tridentata* ssp. *vaseyana*) community (23-5), one study sampled a mountain brush community (23-6), and one study sampled a harrow treatment (23R-3).

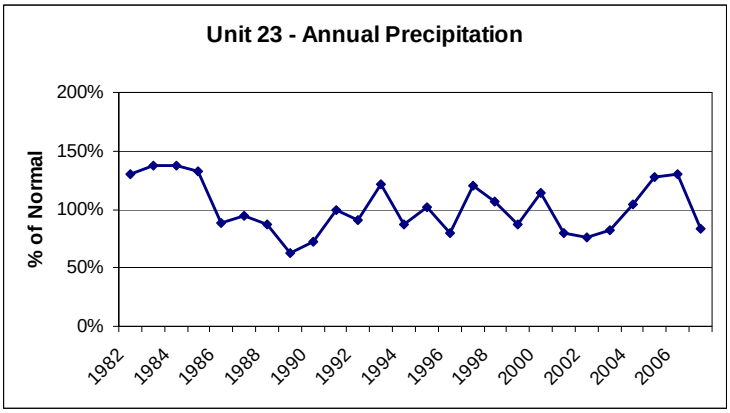


Figure 1. Annual precipitation data for unit 23. Precipitation data were collected at the Marysvale, Richfield, and Koosharem weather stations (Utah Climate Summaries 2008).

Precipitation

Vegetation trends are dependent upon annual and seasonal precipitation patterns. Precipitation data from this herd unit were compiled from the Marysvale, Richfield, and Koosharem weather stations (Figures 1 and 2). The unit annual precipitation was below 75% of normal (drought conditions) in 1989 and 1990 (Figure 1). Spring precipitation (March to May) was below 75% of normal in 1982, 1989, 1997, 2001, and 2006-2008, and near or below 50% of normal in 1998, 2000, and 2002 (Figure 2). Fall precipitation (Sept. to Nov.) was below 75% of normal in 2001, 2003, and 2007, and near or below 50% of normal in 1988, 1989, 1995, and 1999 (Figure 2). Spring precipitation is essential for the recruitment of browse seedlings and the establishment of native perennial grasses and forbs. Fall precipitation, however, benefits winter annual species, such as cheatgrass (*Bromus tectorum*) (Monsen 1994).

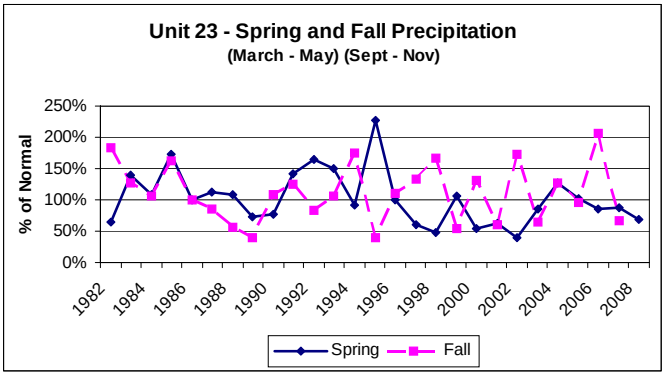


Figure 2. Spring and fall precipitation for unit 23. Precipitation data were collected at the Marysvale, Richfield, and Koosharem weather stations (Utah Climate Summaries 2008).

Browse

The average browse trend decreased from 1985 to 2008 (Figure 3). Mountain big sagebrush was sampled at Bear Ridge (23-1), Thompson Basin (23-3), Smith Canyon (23-5), and Koosharem Canyon (23-6). Its average density remained relatively stable from 1998 to 2003, then decreased 28% in 2008 (Figure 4). Average mountain big sagebrush cover decreased from 12% in 1998 to 11% in 2003 and 4% in 2008 (Figure 5). The decline in density and cover in 2008 was largely attributed to Smith Canyon (23-5), which burned, eliminating a large portion of the sagebrush population. Average mountain big sagebrush population decadence increased from 35% in 1998 to 46% in 2003 and 49% in 2008 (Figure 6).

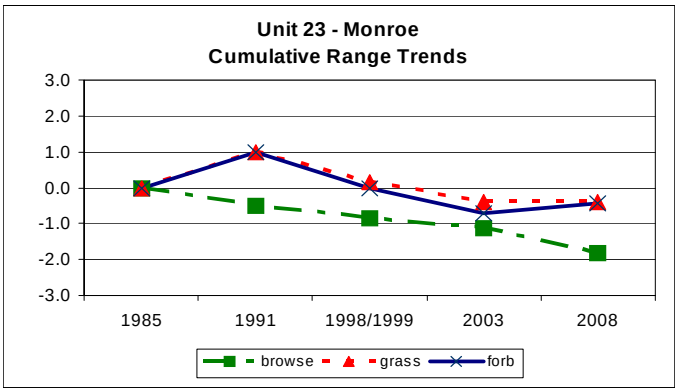


Figure 3. Cumulative range trend for unit 23, Monroe.

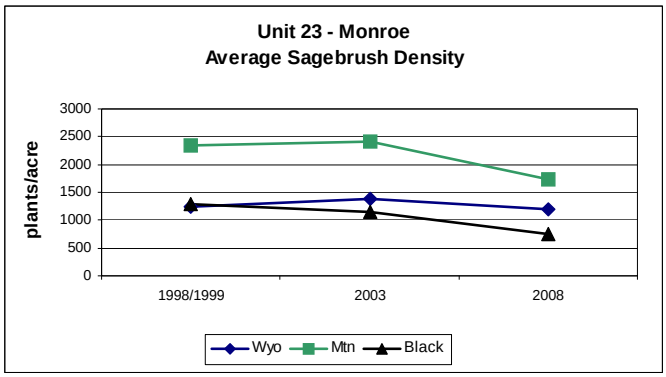


Figure 4. Average Wyoming big, mountain big, and black sagebrush density for unit 23.

Wyoming big sagebrush (*Artemisia tridentata* ssp. *wyomingensis*) was sampled at Saul Meadow (23-2), Poverty Flat (23-4), and Plateau Harrow (23R-3). Its average density increased 12% from 1998 to 2003, then decreased 14% in 2008 (Figure 4). Average Wyoming big sagebrush cover was 6% in 1998, 7% in 2003, and 5% in 2008 (Figure 5). Its population decadence steadily decreased from 34% in 1998 to 22% in 2008 (Figure 6). Black sagebrush (*Artemisia nova*) was sampled on one study, Bear Ridge (23-1). Density decreased 12% from 1998 to 2003, and continued to decrease 35% by 2008 (Figure 4). Black sagebrush cover decreased from 2% in 1998 and 2003 to 1% in 2008 (Figure 5). Decadence increased from 34% of the population in 1998 to 53% in 2003, then decreased slightly to 49% in 2008 (Figure 6).

Grass

The average grass trend increased from 1985 to 1991, steadily decreased until 2003, and remained stable in 2008 (Figure 3). Average perennial grass nested frequency decreased 9% from 1998 to 2003, and increased 5% in 2008 (Figure 7). Average perennial grass cover remained stable at 8% from 1998 to 2008 (Figure 8). Cheatgrass was sampled on all of the studies in this herd unit. Its average nested frequency decreased 10% from 1998 to 2003, then increased 15% in 2008 (Figure 7). Average cheatgrass cover fluctuated between 6% and 7% since 1998 (Figure 8).

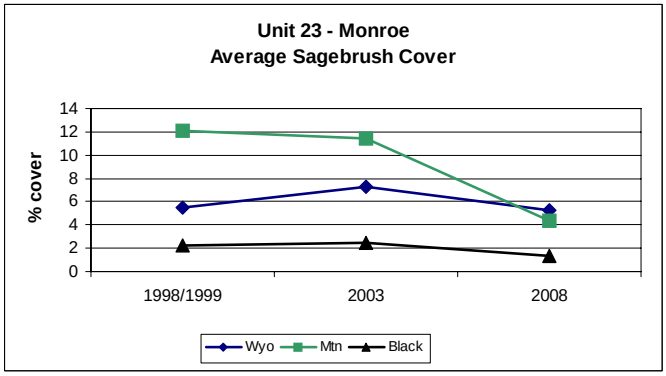


Figure 5. Average Wyoming big, mountain big, and black sagebrush cover for unit 23.

Forbs

The average forb trend was almost identical to the average grass trend (Figure 3). It increased from 1985 to 1991, steadily decreased until 2003, and remained stable in 2008. Average perennial forb nested frequency decreased 44% from 1998 to 2003, and increased 31% (Figure 7). The decrease in forb frequency in 2003 may be attributed to low annual and spring precipitation from 2000 to 2003 (Figures 1 and 2). Average perennial forb cover remained stable at 2% from 1998 to 2008 (Figure 8). No noxious weeds were sampled on the studies in this herd unit.

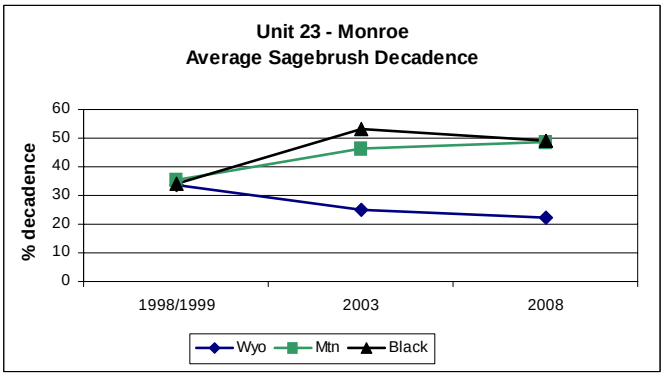


Figure 6. Average Wyoming big, mountain big, and black sagebrush decadence for unit 23.

Desirable Components Index

Three studies in this herd unit are considered within the low potential scale for the Desirable Components Index (DCI): Saul Meadow (23-2), Poverty Flat (23-4), and Plateau Harrow (23R-3). The average DCI rating for these studies was fair in 1998, 2003, and 2008 (Figure 9). The remaining four studies are within the mid-level potential scale. The average DCI rating for these studies steadily decreased from poor-fair in 1998 to very poor-poor in 2003 and very poor in 2008 (Figure 9). The main reasons for this decline in habitat quality were decreases in preferred browse and perennial grass cover.

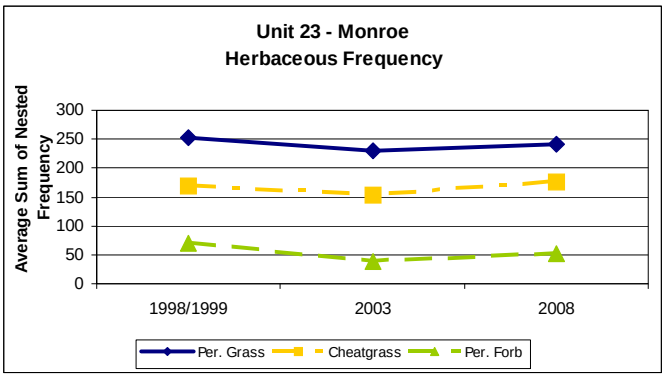


Figure 7. Average herbaceous nested frequency for unit 23.

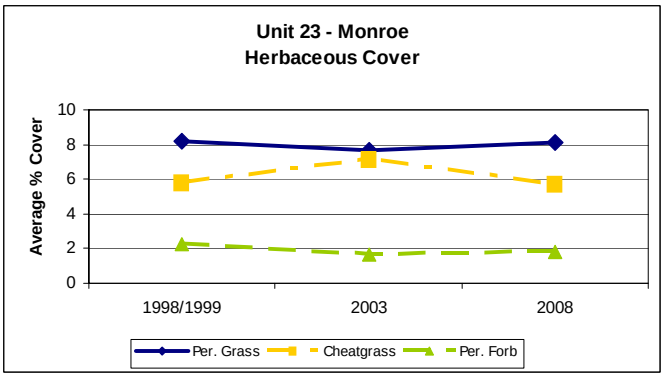


Figure 8. Average herbaceous cover for unit 23.

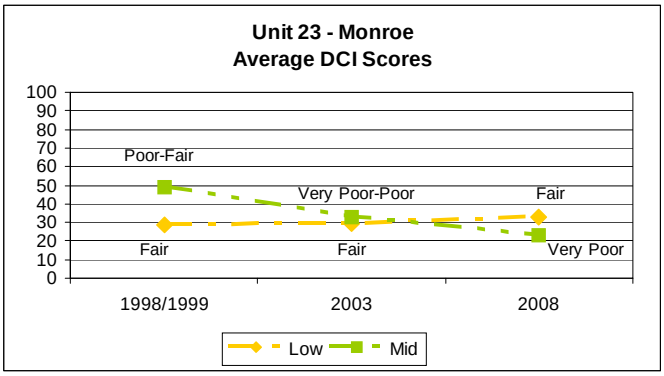


Figure 9. Unit 23 average Desirable Components Index (DCI) scores by year. The DCI scores are divided into three categories based on ecological potentials, which include low, mid-level, and high.