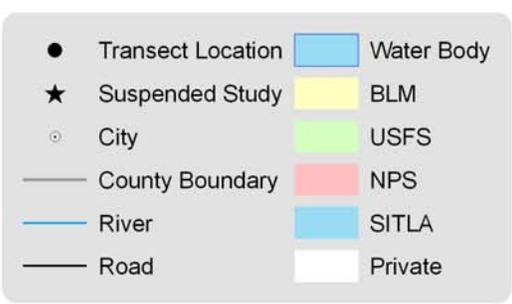
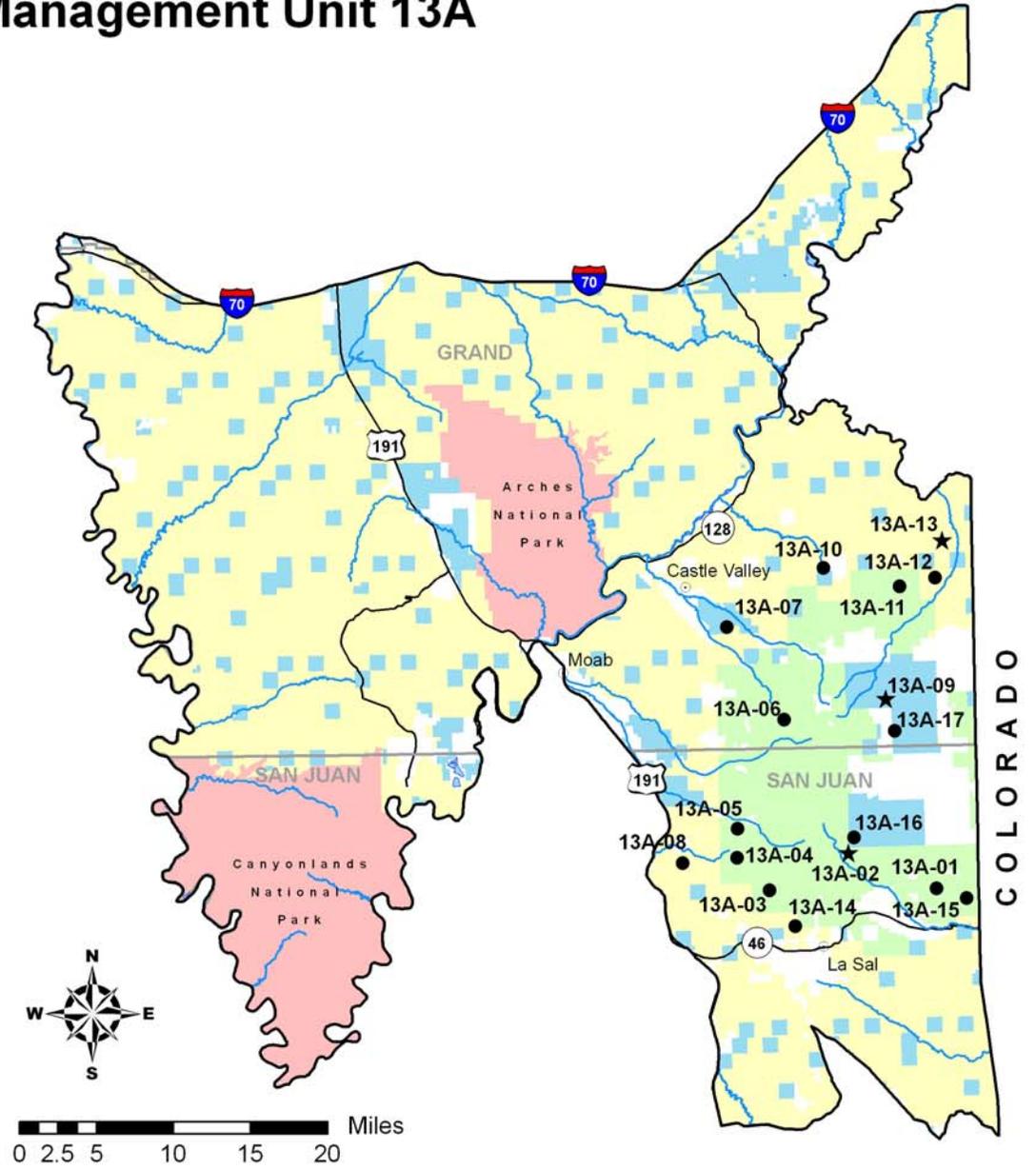


Management Unit 13A



WILDLIFE MANAGEMENT UNIT 13A - LA SAL MOUNTAINS

Boundary Description

Grand and San Juan Counties - Boundary begins at the junction of Interstate 70 and the Green River; then south on the Green River to the Colorado River; then north on the Colorado River to Highway SR-191; south on SR-191 to the Big Indian road; east on this road to the Lisbon Valley road; east on this road to the Island Mesa road; east on this road to the Colorado state line; north on the state line to the Dolores River; northwest on this river to the Colorado River; northeast on this river to the Colorado state line; north on this line to I-70; west on I-70 to the Green River and beginning point.

Management Unit Description

The boundaries of this unit encompass a very large and varied area. The predominant vegetation in the northern part and along the western portion of the unit is a desert shrub type which receives little use by deer or elk. This lower country is inhabited mostly by desert bighorn and antelope. The deer and elk range is centered on and around the La Sal Mountains. From the bare talus peaks at 12,700 feet, the mountain levels off to an 8,000 foot plateau, then slopes gently down to the desert below at about 4,000 feet. Deer generally winter on the mesas at 8,000 feet or lower. South-facing slopes in steep canyons and the lower desert areas also provide some additional wintering areas. The 1967 range inventory (Coles and Pederson 1968) identified 450,240 acres of deer winter range, making up approximately 46% of the unit. Much of the winter range is within the pinyon-juniper type, where many range rehabilitation projects have been completed through the years. The desert shrub type, which comprises about 25% of the winter range, is used mostly during severe winters.

BLM administered land comprise 59% of the winter range on this herd unit. The Forest Service manages the higher mesas, which represent 19% of the winter range. State ownership is also substantial. The major use of the federal and state land is livestock grazing. There is currently limited activities pertaining to mining, oil, and gas drilling. Recreation and tourism is a major influence on the area, but most of this activity is concentrated in the lower desert areas, along the Colorado River and in National Parks. On private land around Moab, Castle Valley, Fisher Valley, and La Sal, there are farming and ranching operations.

Key Areas

Key big game areas are: the Fisher Valley - Fisher Mesa area (USFS and BLM, approximately 2,900 acres), lower Castle Valley severe winter range (BLM and state, 3,800 acres), Upper Castle Valley and Porcupine Draw (USFS, 1,280 acres), Bromley Ridge (USFS, 1,000 acres), Black Ridge (BLM, 1,400 acres), Pole Canyon - Slaughter Flats - Buck Hollow (USFS, 9,500 acres) and North Beaver Mesa (USFS and BLM, 600 acres). In a published Manti-La Sal Forest Management Plan (USDA Forest Service 2006), these areas are identified as general big game winter range. No key winter range was identified on the Moab District.

Much of the winter range around the La Sal Mountains has had some kind of treatment to provide improved grazing and winter range conditions. The treatments are mainly pinyon-juniper chaining and seeding projects, roller-chopper treatments of old chainings, sagebrush removal, and contour trenching on the more eroded sites. A majority of the range trend studies established on the unit sample these treated types. Chained areas are found on North Beaver Mesa, Black Ridge, Amasas Back, Slaughter Flat, Buck Hollow and Two-Mile Chaining. Due to the wide difference in treatment years, from 1960 to the late 1970's, early 1980's and early 1990's, there is considerable variability to what stage of succession they are in. On most the areas studied, except for Amasas Back, pinyon-juniper encroachment is not yet a problem. The key browse species is mountain or Wyoming big sagebrush (*Artemisia tridentata* ssp. *vaseyana* and *A. tridentata* ssp. *wyomingensis*, respectively) which dominate most sites. The higher elevation treatments on North Beaver Mesa, Buck Hollow and Two-Mile Chaining also have a variety of other browse and abundant quantities of grass. Treatments on critical deer winter range on Slaughter Flat, Upper Fisher Valley and Black Ridge have a

moderately dense stand of Wyoming big sagebrush with an understory of crested wheatgrass. These sites are limited in their ability to produce other desirable browse.

The majority of the key areas identified are managed by the BLM or USFS. The Forest Service has range studies over all the key areas. Ecological site data (SVIM) is available for the studies on BLM administered land. All of the key areas studied are also grazed by domestic livestock. The BLM areas are generally grazed by cattle in spring (May - June). Fisher Valley also has fall and winter cattle use. North Beaver Mesa is grazed November to May 31. The Forest Service land on upper North Beaver Mesa is grazed by cattle May 1 to June 15 and October 16 to November 25. The Forest Service allotments are under a rest/deferred rotation grazing system. Use generally occurs from June to mid-October.

Range Trend Studies

Locations for herd unit 13A trend studies were determined in an Interagency meeting in Moab in 1986. However, they could not be incorporated into the range crew schedule until the summer of 1987. Studies established in June of 1987 that were sampled in 2009 included seven studies on crucial deer winter range [Buck Hollow (13A-3), Slaughter Flat (13A-4), Amasas Back (13A-5), Round Mountain (13A-7), Black Ridge (13A-8), Upper Fisher Valley (13A-10) and Below Polar Rim (13A-12)], two studies on transitional deer and elk ranges [Two Mile Chaining (13A-1) and North Beaver Mesa (13A-11)], and one study on deer and elk summer range [Bald Mesa (13A-6)]. Meetings again with Interagency personnel in the summer of 1994 determined that an additional two sites would need to be added because of the increases in the elk population [Lower Lucky Fan (13A-14) and Hideout Mesa (13A-15)]. In 2004, two original summer range sites (13A-2 and 13A-9) were suspended and replaced with two new sites [Beaver Creek (13A-16) and Bar-A (13A-17)].

SUMMARY
WILDLIFE MANAGEMENT UNIT 13A - LA SAL MOUNTAINS

Community Types

There were fourteen Range Trend studies sampled in WMU 13A during the summer of 2009. Six of the studies [Two Mile Chaining (13A-1), Buck Hollow (13A-3), Slaughter Flat (13A-4), Amasas Back (13A-5), Black Ridge (13A-8) and Below Polar Rim (13A-12)] sampled areas that had been chained and seeded in the past to remove pinyon pine (*Pinus edulis*) and Utah juniper (*Juniperus osteosperma*). All six of the studies that sample chained pinyon and juniper communities are considered to be crucial winter elk habitat. Four of the chained pinyon and juniper sites (13A-3, 13A-4, 13A-8, and 13A-12) are considered to be crucial deer winter habitat, one site (13A-1) is considered crucial deer spring/fall habitat and one site (13A-5) is considered crucial spring/fall/summer deer habitat. Three study sites [Upper Fisher Valley (13A-10), North Beaver Mesa (13A-11) and Lower Lackey Fan (13A-14)] sample Wyoming big sagebrush (*Artemisia tridentata* ssp. *wyomingensis*) communities. All three studies are considered crucial winter deer habitat, and the 13A-11 and 13A-14 studies are also considered crucial winter elk habitat. One study site [Round Mountain (13A-7)] samples a blackbrush (*Coleogyne ramosissima*) community, which is considered crucial winter deer habitat. One study [Hideout Mesa (13A-15)] samples a burned mountain big sagebrush (*Artemisia tridentata* ssp. *vaseyana*) and grass community that is crucial winter deer and elk habitat. One study [Bald Mesa (13A-6)] samples a mixed mountain brush community that is crucial summer deer and elk habitat. The final two studies [Beaver Creek (13A-16) and Bar-A (13A-17)] sample two high elevation aspen (*Populus tremuloides*) meadows that are considered crucial summer deer and elk habitat for fawning and calving.

Precipitation

Vegetation trends are dependent upon annual and seasonal precipitation patterns. Precipitation data from this herd unit were compiled from the La Sal 2 SE, Moab, and Castle Valley Inst. weather stations (Figures 1 and 2). The units 27 year annual mean was 11.24 inches, the 28 year spring (March to May) mean was 2.75 inches, and the 27 year fall (Sept. to Nov.) mean was 3.55 inches. The unit annual precipitation was below 75% of the normal annual mean (drought conditions) in 1989, 1994, 2002, and 2008 (Figure 1). Spring precipitation was below 75% of normal in 1982, 1989, 1991, 2002, 2006, and 2008 (Figure 2). Fall precipitation was below 75% of normal in 1988, 1989, 1992, 1994, 1995, 1999, 2000, 2001 and 2008 (Figure 2) (Utah Climate Summary 2009).

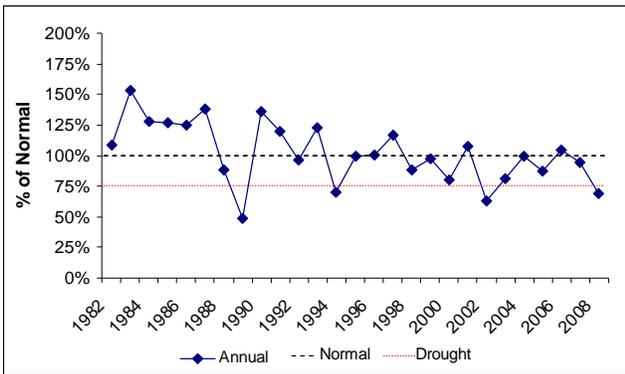


Figure 1. Percent annual precipitation based on the 27 year mean precipitation for WMU 13A, La Sal Mountains. Precipitation data were collected at the La Sal 2 SE, Moab, and Castle Valley Inst. weather stations (Utah Climate Summary 2009).

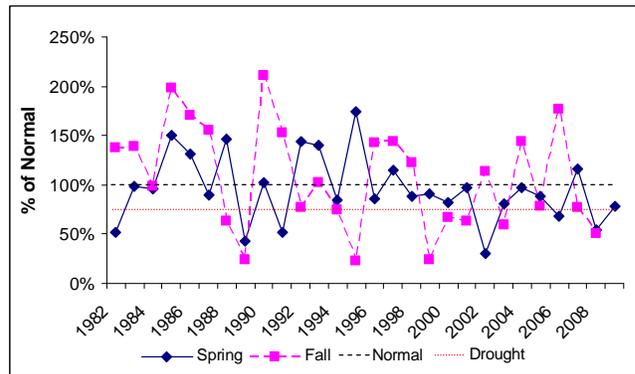


Figure 2. Percent annual precipitation based on the 27 year mean for spring (March-May) and fall (Sept.-Nov.) precipitation for WMU 13A, La Sal Mountains. Precipitation data were collected at the La Sal 2 SE, Moab, and Castle Valley Inst. weather stations (Utah Climate Summary 2009).

Browse

The median browse trend decreased slightly from 1994 to 1999, and again in 2004 (Figure 5). Three sagebrush species were sampled in the unit; Mountain big sagebrush (*Artemisia tridentata* ssp. *vaseyana*), Wyoming big sagebrush (*A. tridentata* ssp. *wyomingensis*), and black sagebrush (*A. nova*). Wyoming big sagebrush was the most common species sampled and was sampled at eight study sites: 13A-4, 13A-5, 13A-7, 13A-8, 13A-8, 13A-11, 13A-12 and 13A-14. The average density of Wyoming big sagebrush decreased significantly between 1999 and 2004 (Figure 3a). Average cover of Wyoming big sagebrush decreased significantly from 1994 to 1999 and then remained similar from 1999 to 2009 (Figure 3b). The average Wyoming big sagebrush population decadence increased significantly from 1999 to 2004 (Figure 3c), corresponding with the decrease in density. Mountain big sagebrush was sampled on three sites in the unit: 13A-1, 13A-6 and 13A-15. The average density of mountain big sagebrush remained similar from 1994 to 2004, with a significant increase in 2009 (Figure 3a). Much of the increase in 2009 is due to a large increase in the recruitment of young plants on the Hideout Mesa study. The average mountain big sagebrush cover decreased significantly from 1994 to 1999, but then increased again in 2004 (Figure 3b). The average population decadence of mountain big sagebrush was relatively high in 1994 at 30%, but steadily decreased through 2004 to 14% and remained low at 13% in 2009 (Figure 3c). Black sagebrush was sampled on only one study, Amasas Back (13A-5) and is therefore not included in this summary discussion. For a summary of the black sagebrush trend, refer to the Amasas Back study discussion.

Herbaceous Understory

The median grass trend decreased slightly from 1999 to 2004 (Figure 5). The average perennial grass sum of nested frequency was similar in 1994, 1999 and 2009, but was significantly lower in 2004 than all other sample years (Figure 4a). However, the average cover of perennial grass has steadily increased from 2004 to 2009 (Figure 4b). Cheatgrass (*Bromus tectorum*) has had a relatively low presence on the unit, and has remained relatively similar in nested frequency and cover in all sample years (Figure 4a and 4b). Bulbous bluegrass (*Poa bulbosa*) was sampled on only one site on the unit, Two Mile Chaining (13A-1). For a summary of the bulbous bluegrass trend, refer to the Two Mile Chaining study discussion.

The median forb trend had a large decrease from 1994 to 1999 with slight decreases from 1987 to 1994 and from 1999 to 2004 (Figure 5). The average perennial forb sum of nested frequency was similar in 1994, 2004 and 2009, but was significantly lower in 1999 (Figure 4a). The average cover of perennial forbs was similar

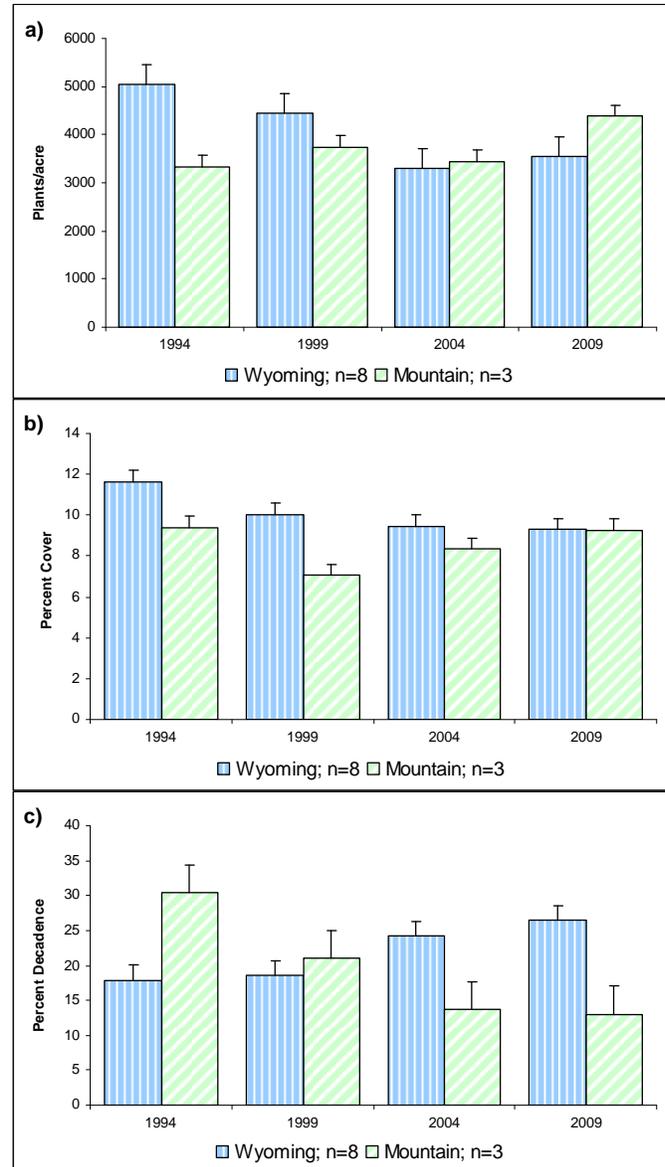


Figure 3. a) Mean density of sagebrush (*Artemisia* spp.) by year for WMU 13A, La Sal Mountains. b) Mean cover of sagebrush by year for WMU 13A. c) Mean population decadence of sagebrush by year for WMU 13A.

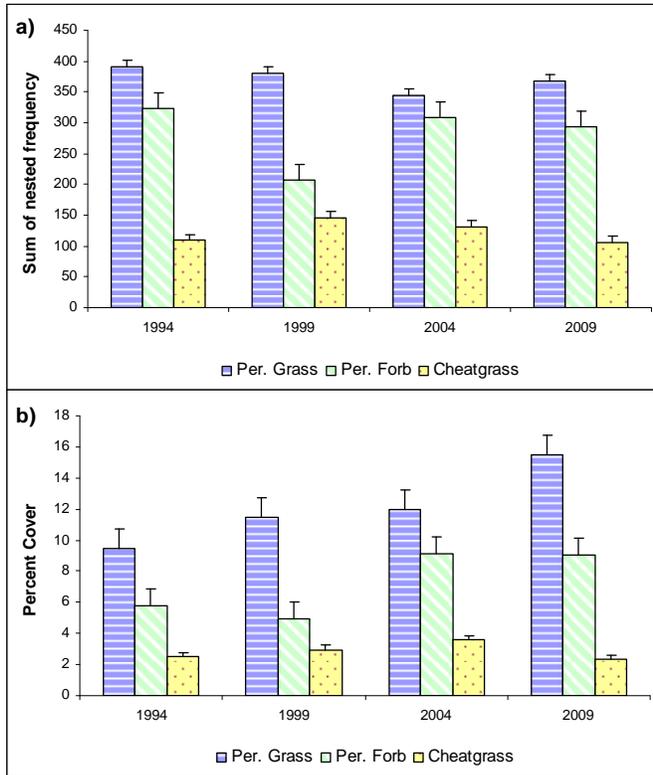


Figure 4. a) Mean perennial grass, perennial forb and cheatgrass sum of nested frequency by year for WMU 13A, La Sal Mountains. b) Mean perennial grass, perennial forb and cheatgrass cover by year for WMU 13A.

from 1994 to 1999, then increased significantly from 1999 to 2004 and remained similar in 2009 (Figure 4b). No noxious weeds were sampled on the studies in this herd unit.

Desirable Components Index

Eight studies in this herd unit sampled in 2009 are considered within the low potential scale for the deer Desirable Components Index (DCI), 13A-4, 13A-5, 13A-7, 13A-8, 13A-10, 13A-11, 13A-12 and 13A-14. The average DCI ranking for these studies has decreased slowly, but steadily, from good in 1994 to fair in 2009 (Figure 6 and Table 1). The decrease in DCI scores is due to a slight decrease in both the browse cover scores and the perennial forb cover scores (Table 1). The three remaining deer winter range studies, 13A-1, 13A-3 and 13A-15, are within the mid-level potential scale. The average DCI ranking for these studies has remained relatively steady at fair since 1994, with a slight decrease to poor-fair in 2004 (Figure 6 and Table 2). There were no studies that were considered to be within the high potential scale on this unit.

Year	Preferred Browse Cover	Preferred Browse Decadence	Preferred Browse Young	Perennial Grass Cover	Annual Grass Cover	Perennial Forb Cover	Noxious Weeds	Total Score	Ranking
94	17.8	10.5	5.6	16.3	-2.7	4.4	0.0	52.0	Good
99	15.6	10.3	6.7	17.5	-3.0	3.3	0.0	50.4	Good
04	14.8	9.7	0.9	18.1	-2.6	2.7	0.0	43.8	Fair-Good
09	14.5	8.4	1.7	18.1	-2.7	1.7	0.0	41.7	Fair

Table 1. Low potential scale mean deer DCI scores (n=8) by year for WMU 13A, La Sal Mountains. The deer DCI scores are divided into three categories based on ecological potentials which include low, mid-level and high.

Year	Preferred Browse Cover	Preferred Browse Decadence	Preferred Browse Young	Perennial Grass Cover	Annual Grass Cover	Perennial Forb Cover	Noxious Weeds	Total Score	Ranking
94	13.5	5.1	5.2	26.1	0.0	8.7	0.0	58.6	Fair
99	11.2	7.1	7.5	27.6	-0.7	7.3	0.0	60.0	Fair
04	15.3	7.0	3.6	20.6	-3.1	7.7	0.0	51.2	Poor-Fair
09	15.6	7.5	7.5	18.9	-1.1	7.2	0.0	55.7	Fair

Table 2. Mid-level potential scale mean deer DCI scores (n=3) by year for WMU 13A, La Sal Mountains. The deer DCI scores are divided into three categories based on ecological potentials which include low, mid-level and high.

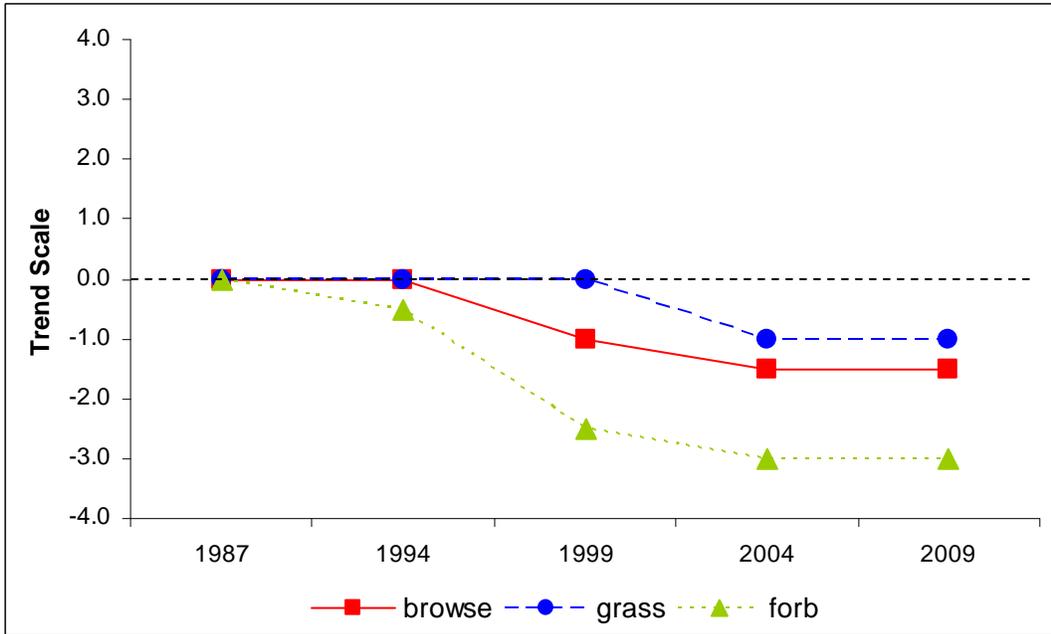


Figure 5. Cumulative median browse, grass and forb trends by year for WMU 13A, La Sal Mountains.

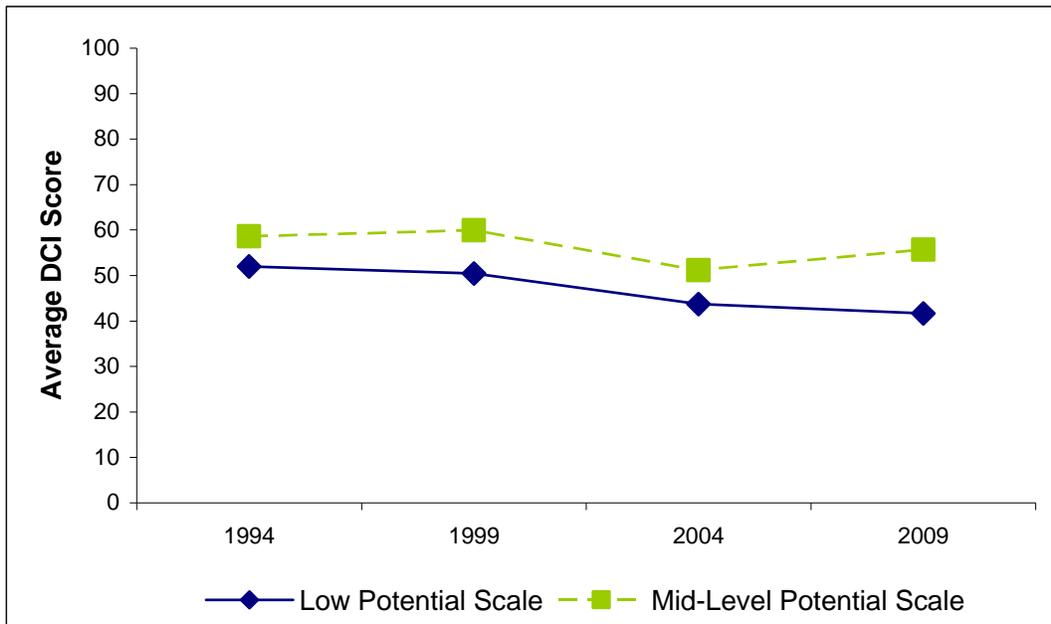


Figure 6. Mean low (n=8) and mid-level (n=3) potential scale deer DCI scores by year for WMU 13A, La Sal Mountains. The deer DCI scores are divided into three categories based on ecological potentials which include low, mid-level and high.