

2015 - JCR Evaluation Form

SPECIES: Mule Deer

PERIOD: 6/1/2015 - 5/31/2016

HERD: MD423 - UINTA

HUNT AREAS: 132-133, 168

PREPARED BY: JEFF SHORT

	<u>2010 - 2014 Average</u>	<u>2015</u>	<u>2016 Proposed</u>
Population:	15,477	15,060	15,513
Harvest:	1,107	1,274	1,110
Hunters:	2,494	2,613	2,500
Hunter Success:	44%	49%	44 %
Active Licenses:	2,518	2,637	0
Active License Success:	44%	48%	0 %
Recreation Days:	12,034	13,385	12,000
Days Per Animal:	10.9	10.5	10.8
Males per 100 Females	27	30	
Juveniles per 100 Females	60	56	

Population Objective (± 20%) : 20000 (16000 - 24000)

Management Strategy: Recreational

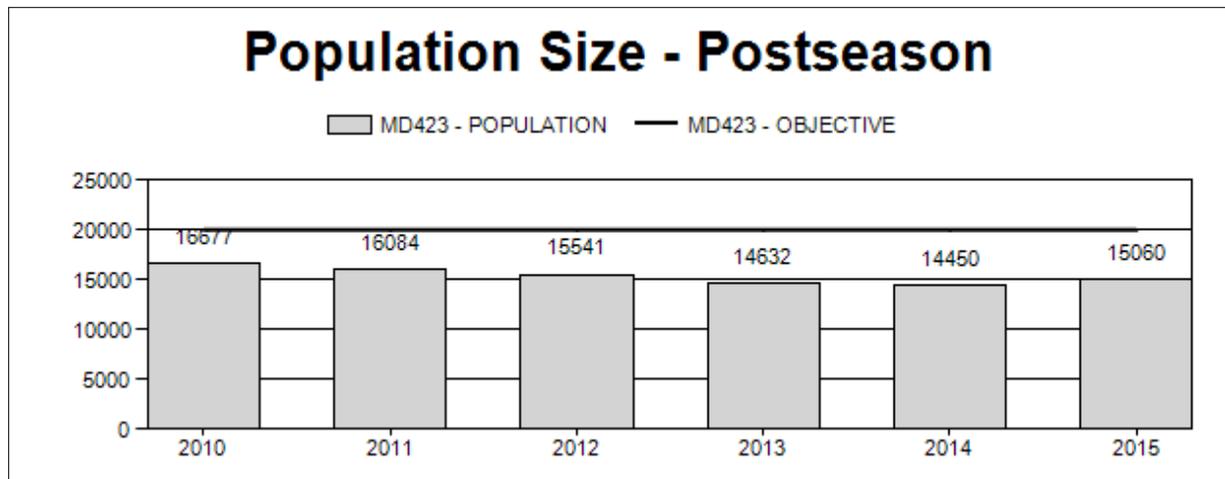
Percent population is above (+) or below (-) objective: -24.7%

Number of years population has been + or - objective in recent trend: 10

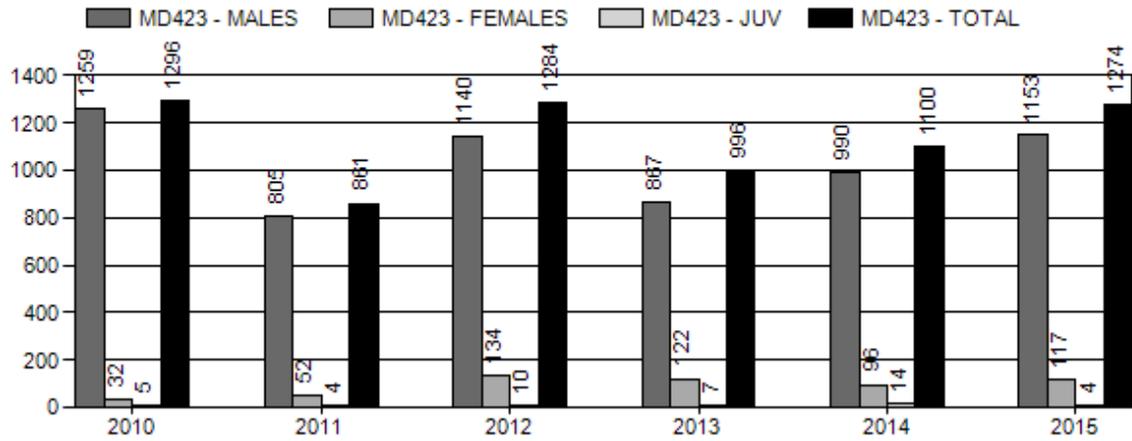
Model Date: 02/16/2016

Proposed harvest rates (percent of pre-season estimate for each sex/age group):

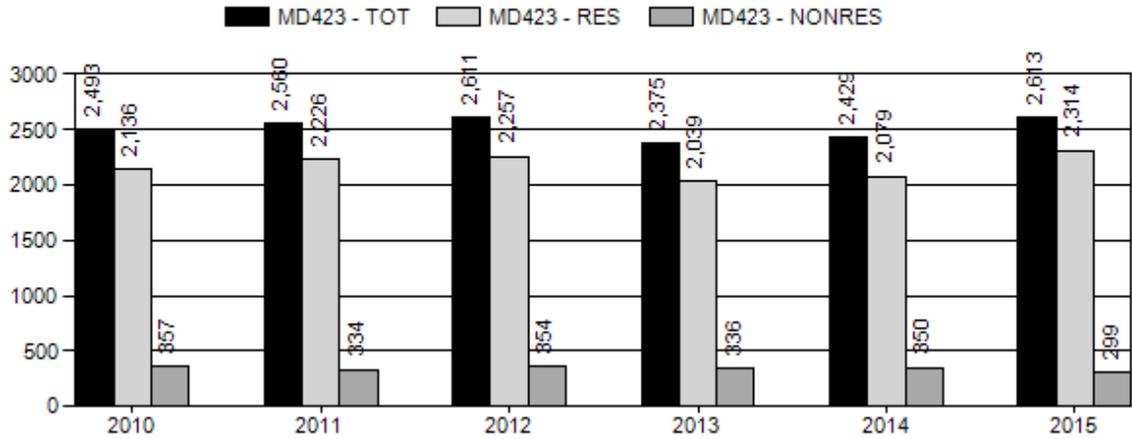
	<u>JCR Year</u>	<u>Proposed</u>
Females ≥ 1 year old:	1.3%	1.3%
Males ≥ 1 year old:	34.4%	34.4%
Juveniles (< 1 year old):	0.1%	0.2%
Total:	7.7%	6.6%
Proposed change in post-season population:	+8.5%	+3.0%



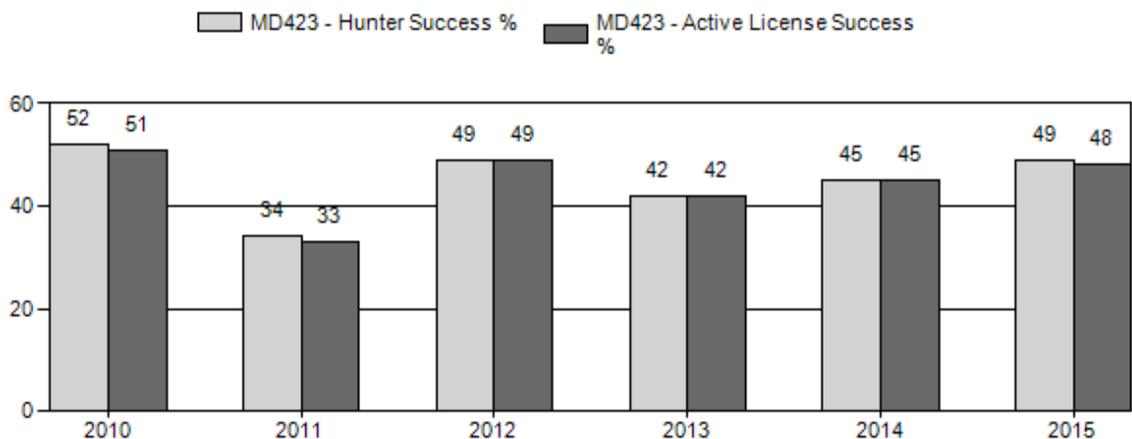
Harvest



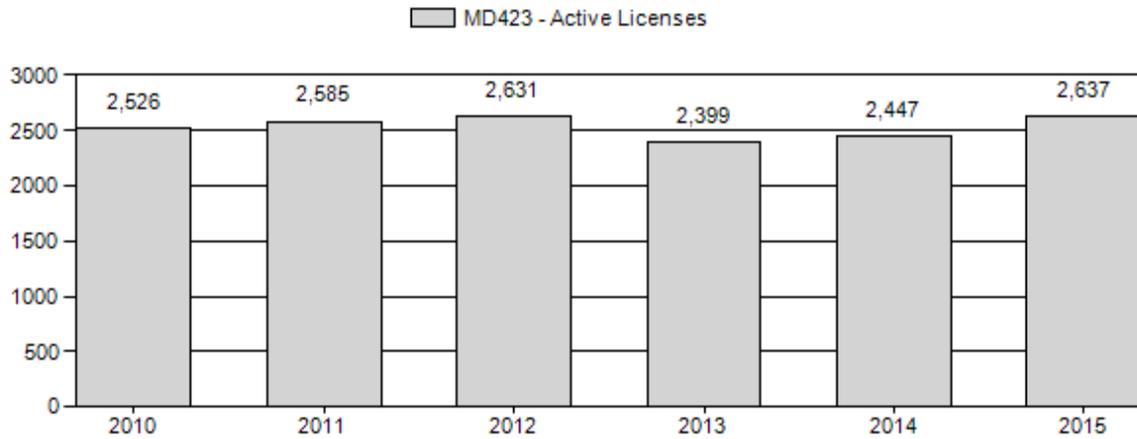
Number of Hunters



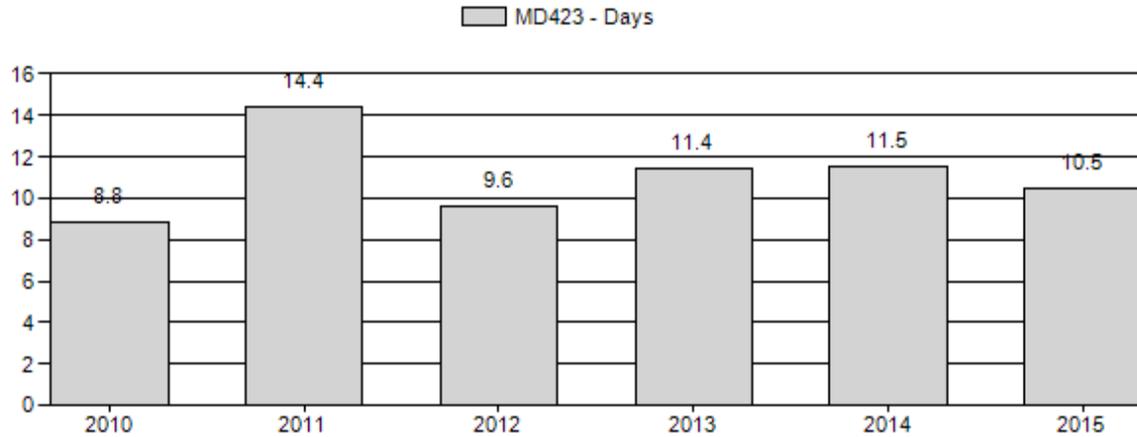
Harvest Success



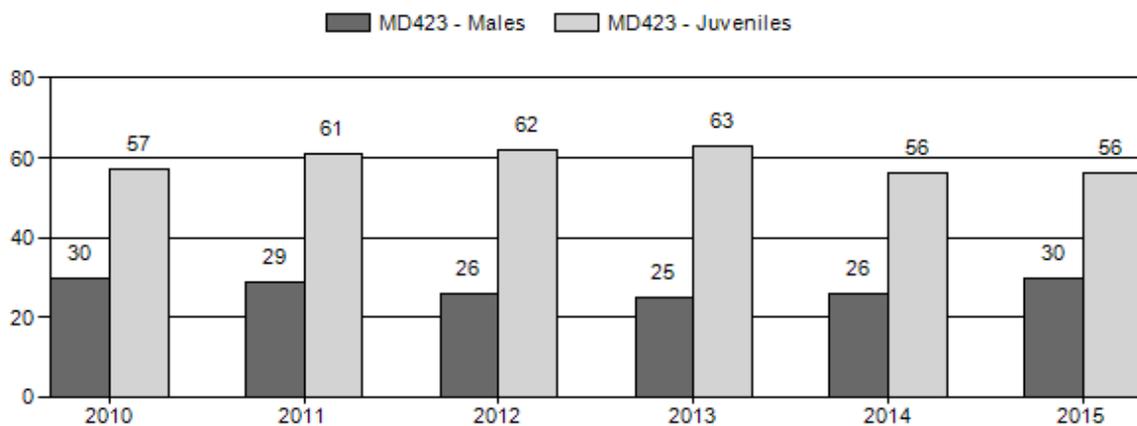
Active Licenses



Days per Animal Harvested



Postseason Animals per 100 Females



2010 - 2015 Postseason Classification Summary

for Mule Deer Herd MD423 - UINTA

Year	Post Pop	MALES							FEMALES		JUVENILES		Tot Cls	Cls Obj	Males to 100 Females				Young to		
		Ylg	2+ Cls 1	2+ Cls 2	2+ Cls 3	2+ UnCls	Total	%	Total	%	Total	%			Ylng	Adult	Total	Conf Int	100 Fem	Conf Int	100 Adult
2010	16,677	261	0	0	0	271	532	16%	1,767	53%	1,011	31%	3,310	0	15	15	30	± 2	57	± 3	44
2011	16,084	93	0	0	0	313	406	15%	1,393	53%	846	32%	2,645	0	7	22	29	± 2	61	± 3	47
2012	15,541	119	0	0	0	311	430	14%	1,642	53%	1,025	33%	3,097	0	7	19	26	± 2	62	± 3	49
2013	14,632	151	0	0	0	235	386	13%	1,551	53%	974	33%	2,911	0	10	15	25	± 2	63	± 3	50
2014	14,450	224	298	222	50	0	520	14%	1,982	55%	1,112	31%	3,614	0	11	15	26	± 1	56	± 2	44
2015	15,060	176	95	74	12	0	357	16%	1,204	54%	675	30%	2,236	0	15	15	30	± 2	56	± 3	43

2016 HUNTING SEASONS

SPECIES : Mule Deer

HERD UNIT : Uinta (423)

HUNT AREAS: 132, 133, 168

Hunt Area	Type	Dates of Seasons		Quota	Licenses	Limitations
		Opens	Closes			
132		Oct. 1	Oct. 14		General	Antlered mule deer three (3) points or more on either antler or any white-tailed deer
132, 133, 168	7	Oct. 1	Oct. 14	50	Limited quota	Doe or fawn valid on irrigated land
133		Oct. 1	Oct. 14		General	Antlered deer three (3) points or more on either antler
168		Oct. 1	Oct. 14		General	Antlered deer three (3) points or more on either antler
132, 133, 168	Archery	Sep. 1	Sep. 30		General	Refer to Section 2 of this chapter

Region K Nonresident Quota: 500

Hunt Area	License Type	Quota change from 2015
Herd Unit Total		

Management Evaluation

Current Postseason Population Management Objective: 20,000

Management Strategy: Recreational

2015 Postseason Population Estimate: ~15,060

2016 Proposed Postseason Population Estimate: ~15,513

Herd Unit Issues

Energy development on crucial deer habitat is a looming issue for this herd. Extensive development has occurred over their range. Xeric environments and limited high quality fawning habitats greatly affect deer productivity in several areas in this herd. This limited fawning habitat will affect the ability of fawns to evade predation by coyotes. Winter severity every three to five years is a major limiting factor for this deer herd. This is especially true in the western part of the herd around Evanston, Fort Bridger and Leroy. The eastern portion of the herd around Cedar Mountain experiences a rain shadow effect and does not tend to get the severe winters over the last 10 years.

Highway mortality and impediment of migration is a significant issue in this herd unit. Mule deer have to cross highways to migrate to crucial winter ranges in several locations. In the Leroy area mule deer are crossing Interstate 80 to get to and from important winter ranges. Deer fencing is present in most of this area but deer crossing structures are limited and the fence is ageing and showing signs of wear. Deer must cross Highway 414 in several areas between Mountain View and McKinnon to migrate to summer and winter ranges. Mortalities are common in those areas. The most significant area of issue is Wyoming Highway 189 between I-80 and Kemmerer. A large segment of the herd must cross this highway to get to winter ranges. Mortalities are very common due to heavy traffic on the roadway. This issue is likely to become much larger due to increasing traffic on this section of the road.

Weather

Weather during 2015 and into 2016 has been highly variable. In the early part of 2015 the winter was very mild and dry. A moist spring and summer followed. In late August conditions dried considerably and a relatively dry fall continued into late December. Winter did not set in until mid December but it came in abruptly. The winter of 2015-2016 has been very cold with high snow loads to this point and mule deer have migrated to crucial winter ranges. A much needed warming trend has occurred in February and it remains to be seen how the winter will ultimately shape out. The winters from 2011 to 2015 were very mild with low snowpack and relatively warm temperatures resulting in very mild winter conditions. However, the dry springs and summers of 2012 and 2013 negatively impacted summer and winter range forage production.

Habitat

Habitat data collection has been inconsistently collected in this herd unit and has been absent in the recent past.

Field Data

The winter of 2010/11 was very severe in some areas and the population in the western part of the herd unit declined significantly due to it. Mortality surveys at the LeRoy winter range complex showed significant fawn and adult doe mortality. However, conditions were much milder in the eastern part of the herd unit. A radio collar study in that area showed a 92% survival rate from December of 2010 to December of 2011, a very high survival rate for mule deer does. Since then winter conditions have been very mild in this herd unit creating a situation where fawn and adult survival is relatively high and populations have been able to grow even with low fawn production.

Classification data is collected yearly by helicopter in Hunt Areas 168, 132 and 133. Sample sizes are very good with around 3,000 deer classified in the last 5 years. Post season buck ratios in 2015 were very good with 29 bucks per 100 does. This is the high end of the range for the objective in the herd unit. Yearling buck ratios and adult buck:doe ratios were good at 14:100 and 15:100.

For 2015 the fawn:doe ratios as a whole are low at 56:100. This was the second year in a row that we had this fawn ratio. This is interesting considering excellent conditions were in place for fawn recruitment during 2014 and 2015 and surrounding mule deer herds had better fawn:doe ratios. This is well below where we would like to see fawn:doe ratios. The low fawn recruitment in this population is of concern. It may be due to several factors including winter range habitat condition, summer range habitat condition, elk competition on summer habitats, neonate predation on summer ranges, aspen stand condition on summer habitats, limited areas of effective parturition habitats and doe age structure. We would like to continue to improve future fawn:doe ratios through habitat improvement and predator manipulation to promote growth of this herd but project opportunities are difficult to find and costly to implement.

Hunt Area 132 is very dry and low productivity habitat compared to the rest of the herd unit. It also has patchy fawning habitat and newborn fawns may be easier prey for coyotes due to the limited fawning sites. Since 2012 we have procured funding and implemented targeted predator control on mule deer fawning sites in HA132. Control is conducted during the fawning period. This was designed as a multiyear project.

Harvest Data

The hunter harvest from seasons recently offered for mule deer do not impact overall population size, recruitment or productivity. They only influence buck:doe ratios and we have been able to maintain buck:doe ratios within the objective. Doe harvest is only allowed by archery, youth hunters and in a very limited type 7 hunt on irrigated lands. The overall doe harvest is negligible and insignificant. Buck harvest has fluctuated greatly over the past five years due to changes in populations from winter severity and fluctuations in weather conditions during the hunting season.

Population

We feel somewhat confident in this model since it reflects field information and seems reasonable. However, caution should be used since this an interstate population with some interchange across state boundaries. Recent radio collar data documents over 12% interchange. This is far lower than we once expected though. More radio collar studies would help determine the extent of these movements. The TSJ,CA model was selected due to the low Relative AICc score and its good fit with the data. The TSJ,CA model fits very well with mule deer population dynamics in this type of system. Unfortunately model estimates do not seem to track very well with known significant winter mortality events in the winters of 2007/2008 and 2010/2011 which concerns us. An independent population estimate would be helpful in validating the model but is not very feasible for this herd.

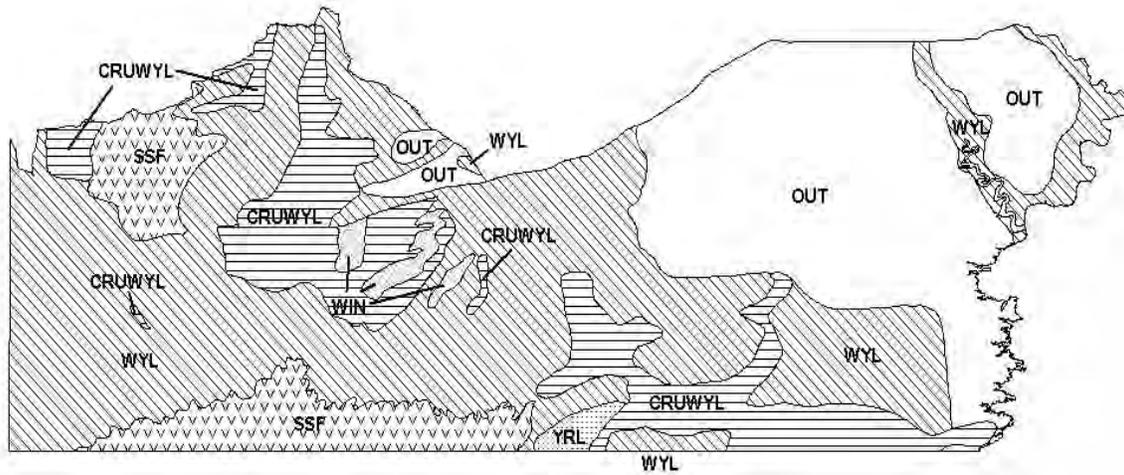
In 2012 the Department switched from POPII models to an Excel spreadsheet model. Since these are new models they are going to be under development and subject to extensive refining. They will likely change over time with new data.

The model predicts a post-season population of around 15,060 mule deer in 2015. This is a decrease in the population from 2010 levels. This reduction is substantiated by Hunter comments, winter mortality surveys and field observations. This supporting information gives us some confidence in model results. However, the reduction modeled from 2010 levels is not totally realistic considering the severity of winter mortality observed on the western winter ranges where the vast majority of the deer herd winters. The reduction should have been much greater than what is modeled.

Management Summary

The 2016 season in hunt areas 132, 133 and 168 will allow for 14 days of general antlered deer hunting opportunity. In this part of the state we strive to offer a 14 day season and include 2 weekends of hunting opportunity. With the current favorable weather and survival conditions for improving deer herds and with buck:doe ratios within objective we feel we can offer a 14 day season. This is still a very conservative deer hunting season. A three point or more antler restriction is also in place in the entire Herd Unit. This restriction was brought on by members of the public. The use of the restriction for limited time periods is warranted in parts of the herd unit where buck security cover and fawn productivity is lacking but many parts of the Herd Unit do not require this type of management.

In 2008 we started a new hunt with 50 type 7 doe/fawn tags good for all hunt areas in the herd unit on irrigated land. This is to address the number of deer that are living year round on irrigated fields and give landowners an opportunity to have some harvested. This hunt will be continued in 2015. The Objective and management strategy were last revised in 2014.



Mule Deer (MD423) - Uinta
 HA 132, 133, 168
 Revised - 3/94



2015 - JCR Evaluation Form

SPECIES: Mule Deer

PERIOD: 6/1/2015 - 5/31/2016

HERD: MD424 - SOUTH ROCK SPRINGS

HUNT AREAS: 101-102

PREPARED BY: PATRICK BURKE

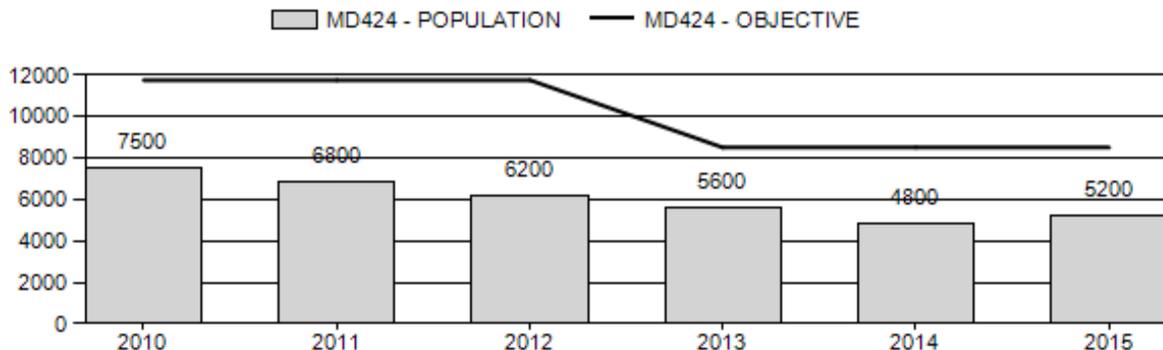
	<u>2010 - 2014 Average</u>	<u>2015</u>	<u>2016 Proposed</u>
Population:	6,180	5,200	5,400
Harvest:	338	148	150
Hunters:	420	202	200
Hunter Success:	80%	73%	75 %
Active Licenses:	420	202	200
Active License Success:	80%	73%	75 %
Recreation Days:	2,807	1,328	1,400
Days Per Animal:	8.3	9.0	9.3
Males per 100 Females	26	0	
Juveniles per 100 Females	59	0	

Population Objective ($\pm 20\%$) : 8500 (6800 - 10200)
 Management Strategy: Special
 Percent population is above (+) or below (-) objective: -38.8%
 Number of years population has been + or - objective in recent trend: 10
 Model Date: 2/21/2016

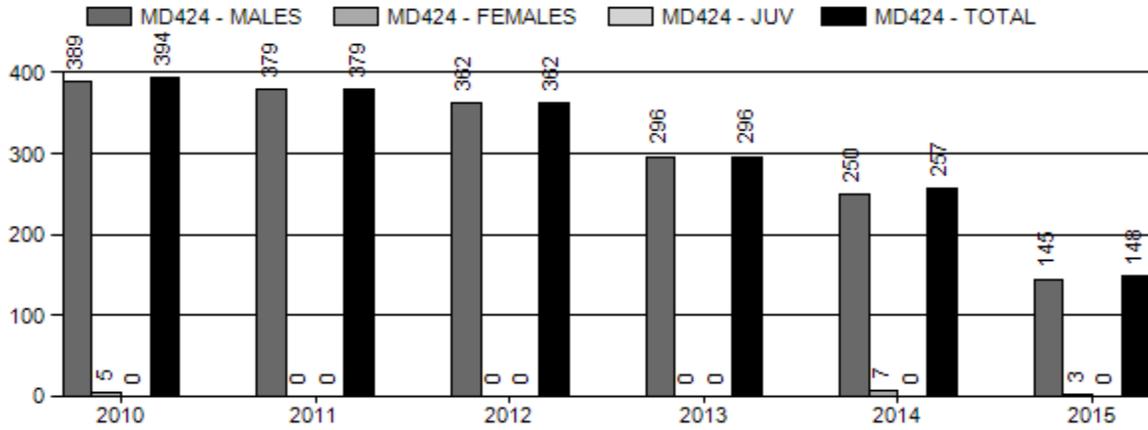
Proposed harvest rates (percent of pre-season estimate for each sex/age group):

	<u>JCR Year</u>	<u>Proposed</u>
Females ≥ 1 year old:	.1%	0%
Males ≥ 1 year old:	20%	20%
Juveniles (< 1 year old):	0%	0%
Total:	4%	3%
Proposed change in post-season population:	10%	10%

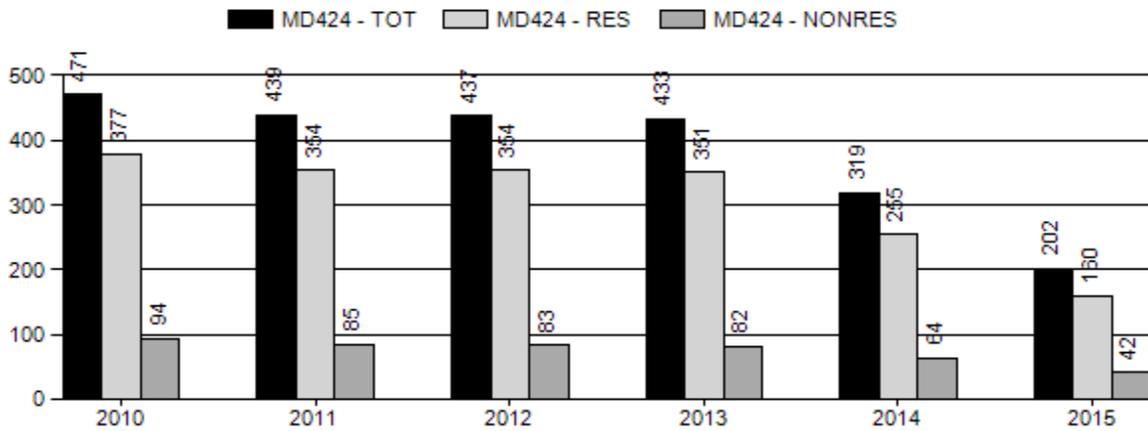
Population Size - Postseason



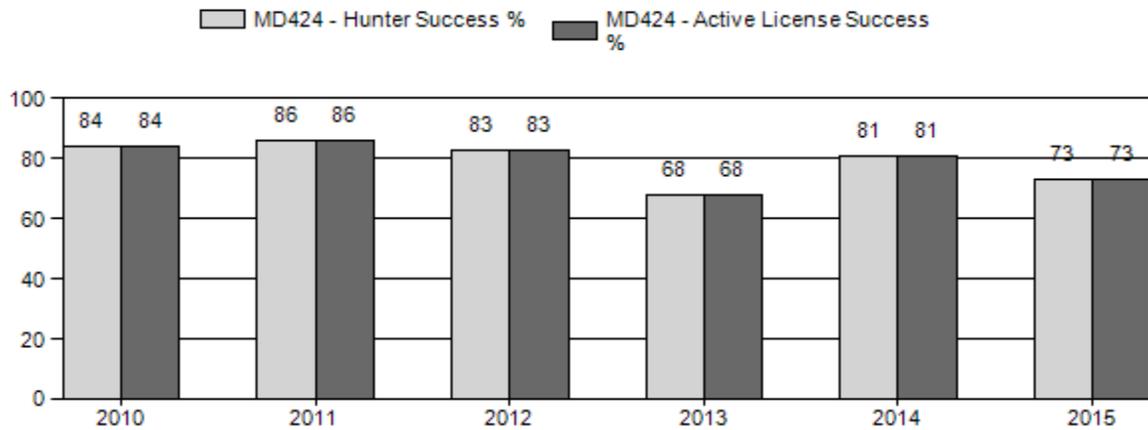
Harvest



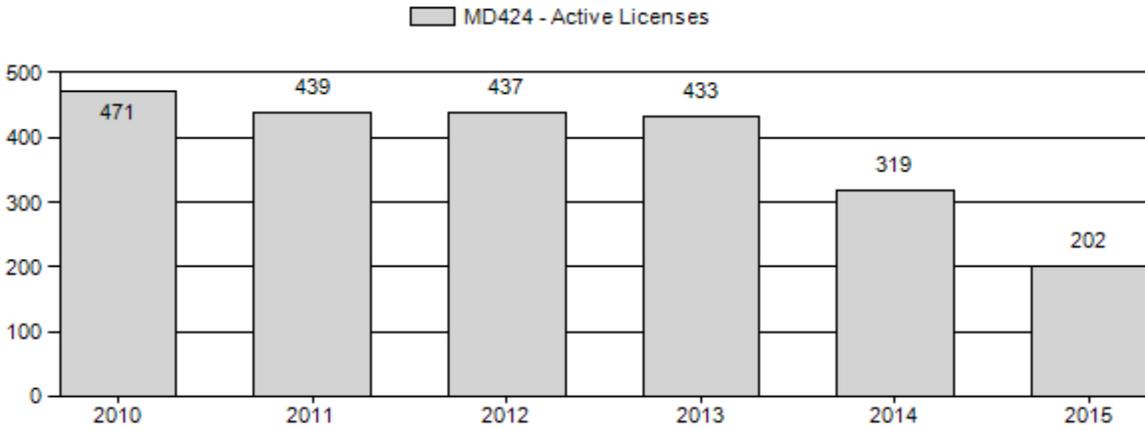
Number of Hunters



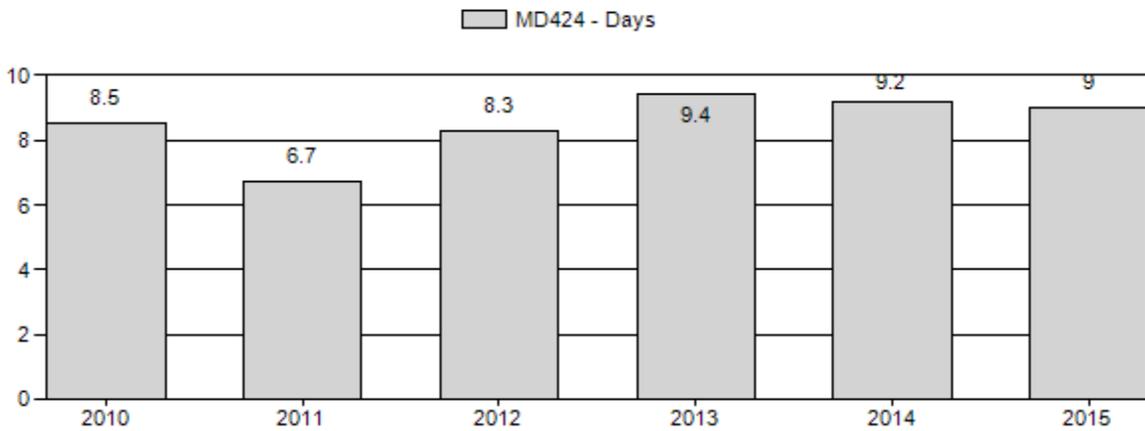
Harvest Success



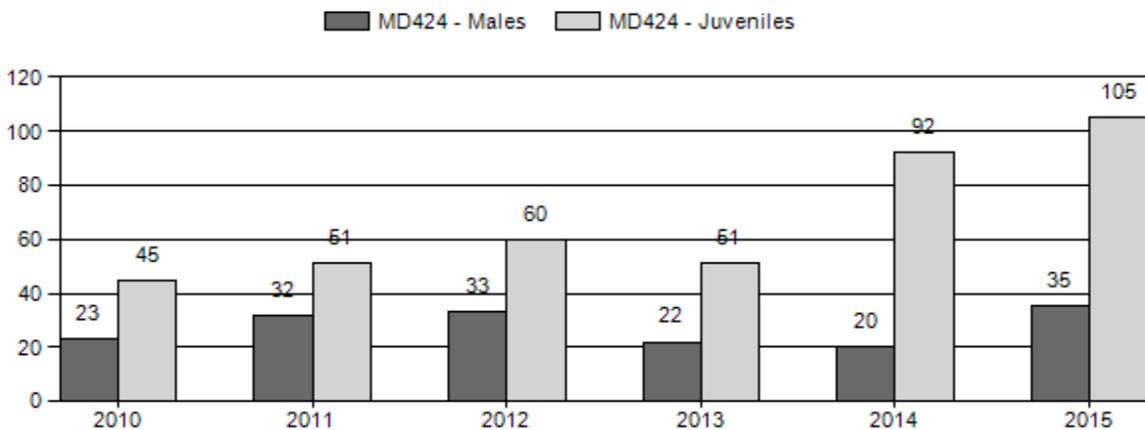
Active Licenses



Days per Animal Harvested



Postseason Animals per 100 Females



2010 - 2015 Postseason Classification Summary

for Mule Deer Herd MD424 - SOUTH ROCK SPRINGS

Year	Post Pop	MALES							FEMALES		JUVENILES		Males to 100 Females				Young to				
		Ylg	2+ Cls 1	2+ Cls 2	2+ Cls 3	2+ UnCls	Total	%	Total	%	Total	%	Tot Cls	Clis Obj	Yng	Adult	Total	Conf Int	100 Fem	Conf Int	100 Adult
2010	7,500	47	0	0	0	55	102	14%	446	60%	200	27%	748	1,048	11	12	23	± 0	45	± 0	36
2011	6,800	38	0	0	0	108	146	18%	453	55%	229	28%	828	1,030	8	24	32	± 4	51	± 5	38
2012	6,200	55	0	0	0	129	184	17%	558	52%	334	31%	1,076	680	10	23	33	± 3	60	± 5	45
2013	5,600	40	0	0	0	89	129	13%	593	58%	305	30%	1,027	767	7	15	22	± 2	51	± 4	42
2014	4,800	30	0	0	0	55	85	10%	417	47%	383	43%	885	1,242	7	13	20	± 3	92	± 8	76
2015	5,200	22	0	0	0	23	45	15%	129	42%	135	44%	309	1,124	17	18	35	± 8	105	± 16	78

**2016 HUNTING SEASONS
SOUTH ROCK SPRINGS MULE DEER HERD (MD424)**

Hunt Area	Type	Season Dates		Quota	License	Limitations
		Opens	Closes			
101	1	Oct. 15	Oct. 31	25	Limited quota	Antlered deer
102	1	Oct. 15	Oct. 31	200	Limited quota	Any deer

Special Archery Season Hunt Areas	Season Dates	
	Opens	Closes
101,102	Sep. 1	Sep. 30

Hunt Area	Type	Quota change from 2015
Herd Unit Total		No Changes

Management Evaluation

Current Management Objective: 8,500

Management Strategy: Special

2015 Postseason Population Estimate: ~5,200

2016 Proposed Postseason Population Estimate: ~5,500

The post-season population objective for the South Rock Springs mule deer herd is 8,500 deer under special management. The objective for this herd was changed to its current level in 2013, when it was lowered from 11,750.

Herd Unit Issues

The largest issue facing this herd is its consistent underperformance both in relation to its population objective and in quality of bucks its able to produce compared to what is expected by the public. This herd has been well below this objective since South Rock Springs and Black Butte herds were combined in the 1980's and most likely will continue to remain below objective for the foreseeable future. Current population estimates suggest this herd may be around 5,200 deer after the 2015 hunting season.

The lack of growth in this herd despite very conservative hunting seasons can be attributed to poor fawn recruitment year after year. Observed fawn to doe ratios for this herd have averaged only 60 fawns per 100 does for the last decade, with some years generating observed ratios of only 45 to 50 fawns:100 does. This level of juvenile recruitment allows for population maintenance at best, but does not allow for population growth. Observed fawn ratios from the last two years do show much improved ratios of around 100 fawns:100 does, but this is due to small sample size and probably does not represent anything near the actual fawn ratio for the herd. The other major issue for this herd is that despite increasingly conservative buck harvests, managers have been unable to increase the observed buck to doe ratio for the herd.

Weather

The weather conditions that have had the greatest impact on the South Rock Springs deer herd are the dry summers that this population has experienced from 2012 to 2014 and to a lesser extent the summer of 2015. The summer of 2012 was the driest on record at the Rock Springs monitoring station with only 3.13 inches of precipitation recorded, 2013 was the 5th driest with 4.68 inches of precipitation measured and 2014 was the second driest on record with only 4.24 inches of precipitation for the year. Near normal precipitation levels were documented in 2015, with 8.62 inches of precipitation recorded at the Rock Springs monitoring site. Most of the moisture came in July, however which did not benefit plant growth as much as if it had arrived earlier in the growing season. Since high quality summer range is the most limiting habit type in the region south of Rock Springs, the additional stress of below average summer precipitation caused this herd to lose ground in relation to its population objective. With the exception of the 2010-2011 winter, winters in the herd unit have been very mild, and should not have caused any significant mortality in the herd. Portions of the 2015-2016 winter did see colder temperatures and some portions of the herd unit did receive significant snowfall, but since this period was fairly short in duration and was followed by warm weather and significant snowmelt it probably won't have a significant negative affect on the population. Therefore, the dry summers and the resulting decreased forage production are the most likely culprits in the recent observed population decline.

The high observed fawn ratio seen in the 2014 and 2015 post-season classifications gives cautious optimism that this population may begin to grow in the future, however the physical condition of some deer witnessed during November 2015 suggest that the herd is still experiencing tough times due to nutritional deficiencies.

Habitat

The Green River aquatic habitat biologist has established six aspen regeneration monitoring transects throughout Hunt Area 102. These transects are designed to evaluate browsing impacts from ungulates on young aspen suckers. Two transects were established on Little Mountain in 2007, as well as four additional transects that were established in 2009, one each on Aspen and Miller Mountains and two in the Pine Mountain area. These transects have been read each

summer since their establishment, except that one of the Pine Mountain transects was not read in 2013 due to difficulty in accessing that site caused by the amount of rain and snow received that fall and the South Pine Mountain site was not read in 2014 due to the aspen stand that it was located in dying off resulting in an insufficient number of aspen suckers left alive to measure. Because of the loss of the South Pine Mountain site, a new transect was established near the tri-state marker in 2014.

A detailed accounting of the technique and results from these monitoring efforts can be found in the aquatic habitat annual report. In general, this method compares the height of the initial growth point for the current year’s terminal leader to the height of the tallest previous terminal leader branch that was killed as a result of browsing. A positive Live-Dead (LD) value suggests growth of young trees, while a negative value or value near zero suggests that browsing may be suppressing tree growth. Results of monitoring efforts are presented in the following table (Table 1) taken from the aquatic habitat annual progress report, but in general, four of the five monitored sites showed positive LD values for 2015, while four of the sites had LD values at or below zero.

Table 1. Trends in aspen regeneration LD Index values (vertical inches) for the SRS herd unit 2012-2015

Monitoring site	2012	2013	2014	2015
Pine Mt/Red Ck.	-3.0	NA	-7.8	-1.8
Tri-State /Red Ck.	NA	NA	+3.36	+7.2
Miller Mt.	+5.3	+6.6	+4.6	+3.6
Aspen Mt.	-6.0	+4.6	-4.5	+1.2
Little Mt./Dipping Spr.	-2.6	0	-0.9	+1.2
Little Mt./West Currant Ck.	0	0	-1.6	0

Field Data

This herd was classified only from the ground in November 2015. Due to other projects occurring during that month, only 309 deer were classified, with resulting ratios of 105 fawns : 100 does and 34 total bucks per 100 does, with 17 yearling bucks per 100 does. This observed fawn ratio is extremely high for this herd and should probably be regarded with skepticism since the classification was so small. These observed ratios are almost certainly due to the extremely small sample size and do not reflect the actual condition of the population.

In past years, it was noted by all observers conducting the classifications that the number of deer available in November was noticeably less than what was seen during October. Also in the winter of 2014-2015, Utah Division of Wildlife Resources collared a doe mule deer 10 miles north of Vernal, UT. That doe moved into Wyoming in late April and spent the summer on top of Little Mountain, she then left Wyoming and returned to Utah in late September. This pattern

of deer apparently moving out of the herd unit during late fall or early winter has been observed since the 2010-2011 winter. It appears that winter may have triggered migratory movements than were not observed in this herd, at least the recent history. During the 2013 classification flight, only 319 deer were observed in almost a day and a half of helicopter time in late December. These movements that appear to be occurring sometime in the late fall make determining accurate population statistics for this herd difficult or impossible with the current knowledge of the seasonal movements of this herd.

Harvest Data

The 2015 season saw the lowest harvest documented in this herd in quite some time. A reported total of 148 bucks and 3 doe mule deer were harvested in the herd unit. Success rates for the two hunt areas that make up this herd unit were 67% for HA101 and 74% for HA102, giving the herd unit as a whole a success rate of 73%. This herd unit usually exhibits success rates in the mid-80s, so the success rates reported in 2015 were below average success rates but were a slight improvement over 2013's harvest success rate of 68% in the herd unit. The number of deer harvested in HA102 in 2015 can partly be explained by the reduction in the number of licenses issued with only 200 licenses being issued in the hunt area instead of the 400 that were usually issued.

Because the South Rock Springs mule deer herd is a special management herd and because of its significant local status, successful hunters are asked to voluntarily submit tooth samples for cementum annuli ageing analysis. Successful hunters submitted 62 samples for analysis from the 2015 hunting season. Based on those samples, the average age of harvested bucks was just under 5.3 years old in 2015. The average age of harvested deer was also 5.3 years old in 2014, 5.1 years old in 2013, 4.5 years old in 2012, and 5.0 years old in both 2010 and 2011. Based on hunter submitted tooth samples, the oldest deer harvested during the 2015 season was a 10.5-year-old buck from HA102 and a 9.5 year old buck from HA101. It should be noted that despite the average age of over 5 years old based on laboratory aging estimates that antler size of field checked deer was not what would be expected from that age class of deer.

Population

The model for this herd tracks only moderately well with observed data, in particular with observed buck ratios, and sharing this herd with Colorado and Utah continues to decrease its overall reliability.

The model selected for this herd is the time-specific juvenile survival model based on producing the most realistic estimate for this population and based on the biology of mule deer. However, the model seems to be unable to track the trend for the population. While the model will change the current year's population estimate to what is probably a believable number each year, it shows that the herd is steadily growing to the current estimate instead of showing that the population was at higher levels in the past. The most likely explanation for this is the discrepancy between what the model expects for buck ratios and what is observed in the field each year. This, along

with the lack of correlation between male harvest rates and fawn ratios with subsequent buck ratios has led to speculation that bucks may be leaving the herd unit, which would reduce the functionality of the model.

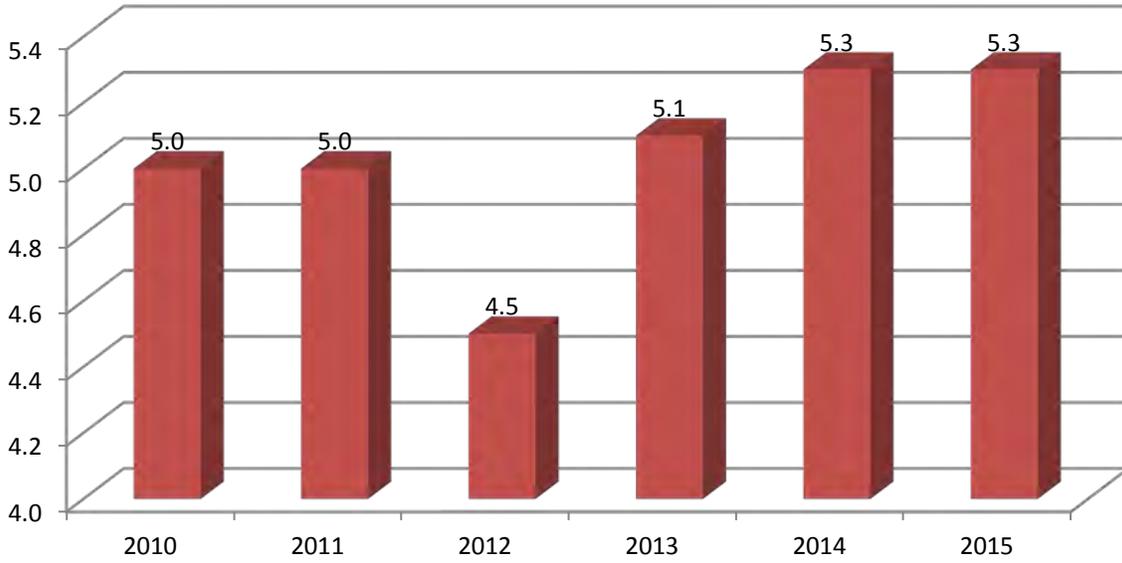
Additional information from the harvest survey, classifications, and age data from lab-aged teeth from hunter-harvested deer combined with the model help in management of this locally high profile herd.

Management Summary

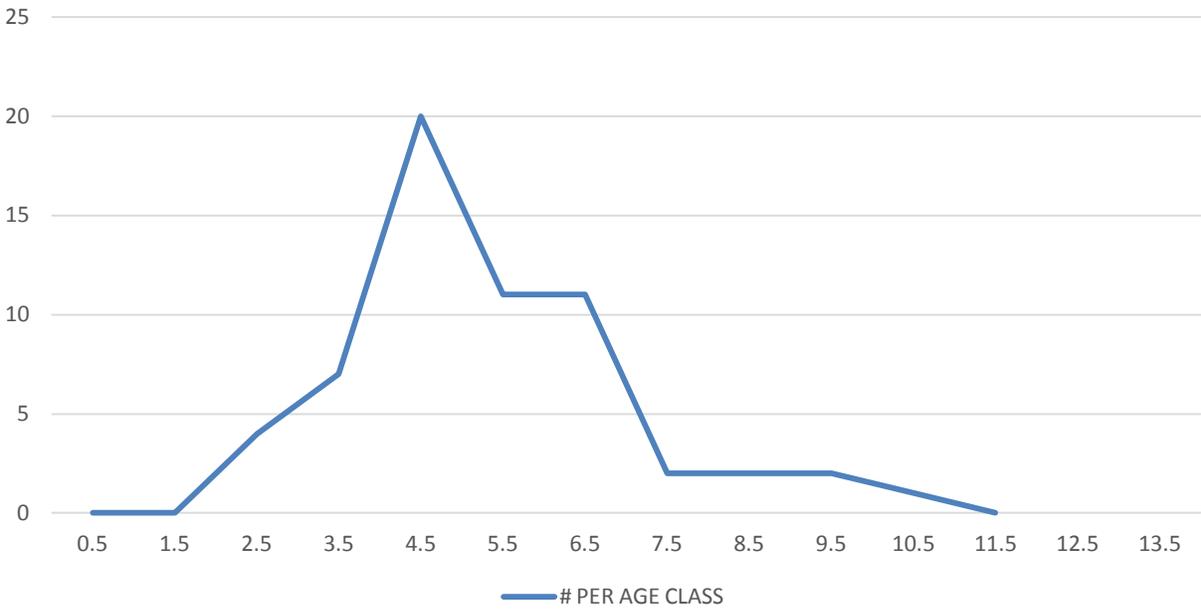
The 2016 hunting season is identical to the 2015. Because of the problems with the model for this herd and fact that management actions seem to have no impact on herd size or observed buck to doe ratios, this herd is managed mostly by political pressure from those members of the public desiring larger antlered deer and a less crowded hunting experience.

Despite the conservative seasons that have been set for this herd unit for the last several years, observed buck to doe ratios are never higher than the lower end allowed for a special management herd. However, classifications compared to the number of licenses issued over the past 15 years, when there has been no issuance of doe licenses, shows little correlation between license issuance levels and post-season buck to doe ratios. The most likely explanation for this is emigration of young bucks out of the state, but that hypothesis is based on speculation. It is possible that young bucks could be moving into Utah where the average age of bucks is less than that in the Wyoming portion of the herd. This is suggested by the fact that the model does a poor job of aligning simulated and observed buck to doe ratios.

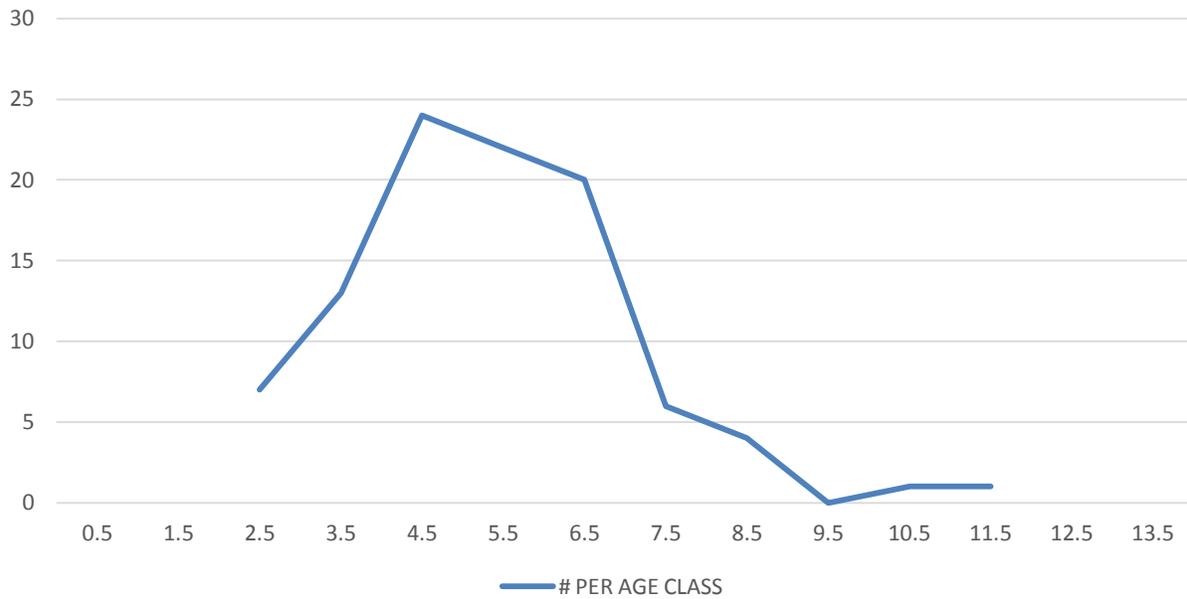
SRS Deer Average Age of Harvested Bucks



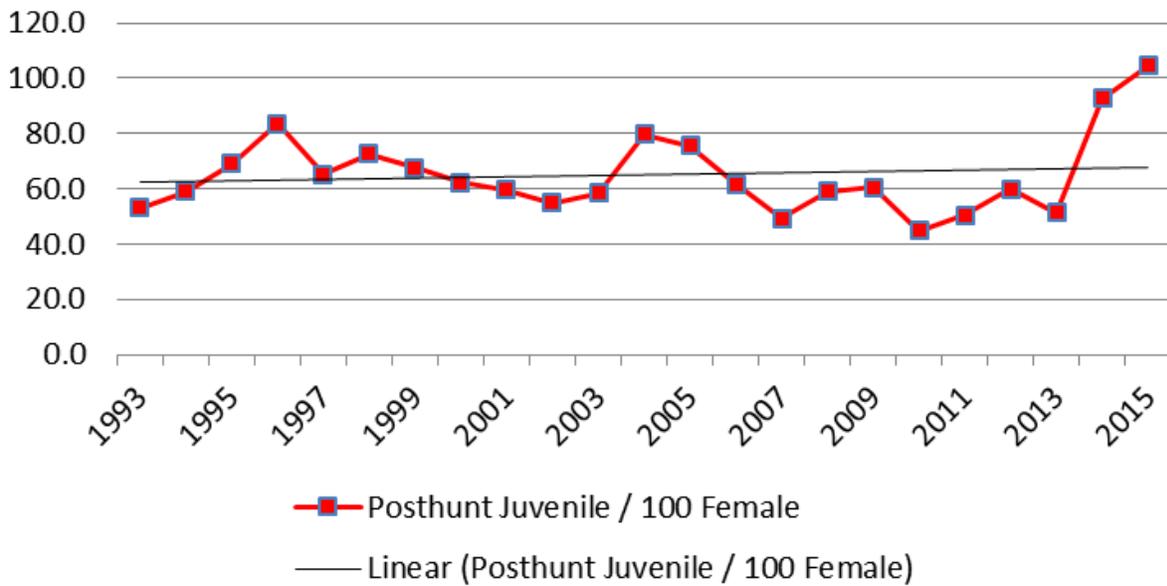
2015 SRS DEER # HARVESTED PER AGE CLASS

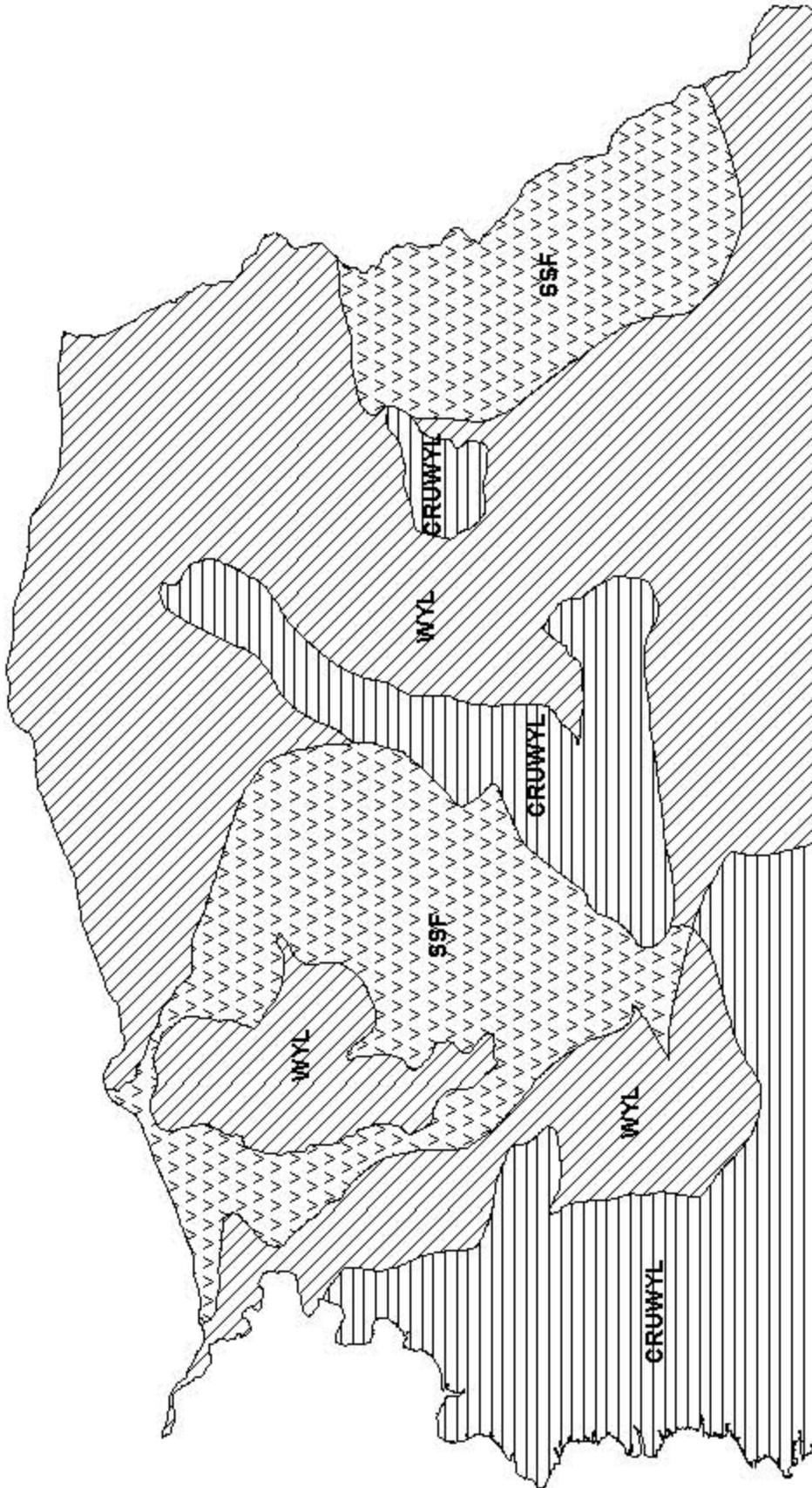


2014 SRS DEER # HARVESTED PER AGE CLASS



Posthunt Juvenile / 100 Female





Mule Deer (MD424) - South Rock Springs
HA 101, 102
Revised - 3/94

2015 - JCR Evaluation Form

SPECIES: Mule Deer

PERIOD: 6/1/2015 - 5/31/2016

HERD: MD427 - BAGGS

HUNT AREAS: 82, 84, 100

PREPARED BY: TONY MONG

	<u>2010 - 2014 Average</u>	<u>2015</u>	<u>2016 Proposed</u>
Population:	18,200	25,100	23,605
Harvest:	1,167	1,878	2,300
Hunters:	2,420	3,062	3,000
Hunter Success:	48%	61%	77 %
Active Licenses:	2,432	3,112	3,200
Active License Success:	48%	60%	72 %
Recreation Days:	11,580	13,517	15,000
Days Per Animal:	9.9	7.2	6.5
Males per 100 Females	31	33	
Juveniles per 100 Females	60	62	

Population Objective (± 20%) : 19000 (15200 - 22800)

Management Strategy: Recreational

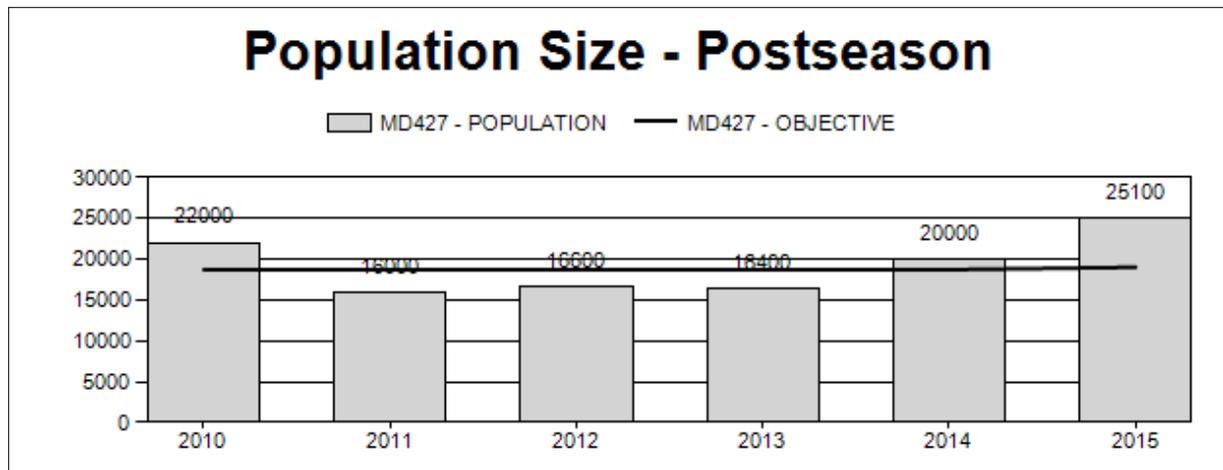
Percent population is above (+) or below (-) objective: 32%

Number of years population has been + or - objective in recent trend: 1

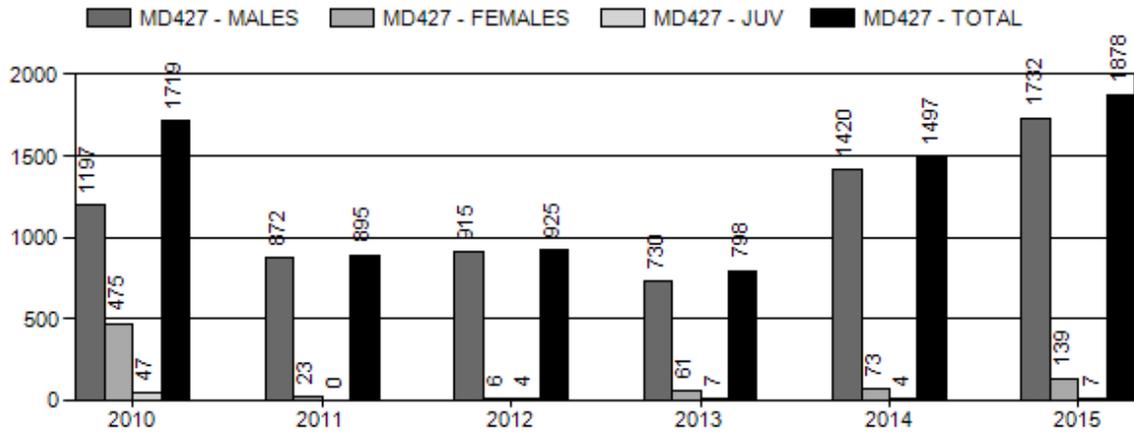
Model Date: 02/20/2016

Proposed harvest rates (percent of pre-season estimate for each sex/age group):

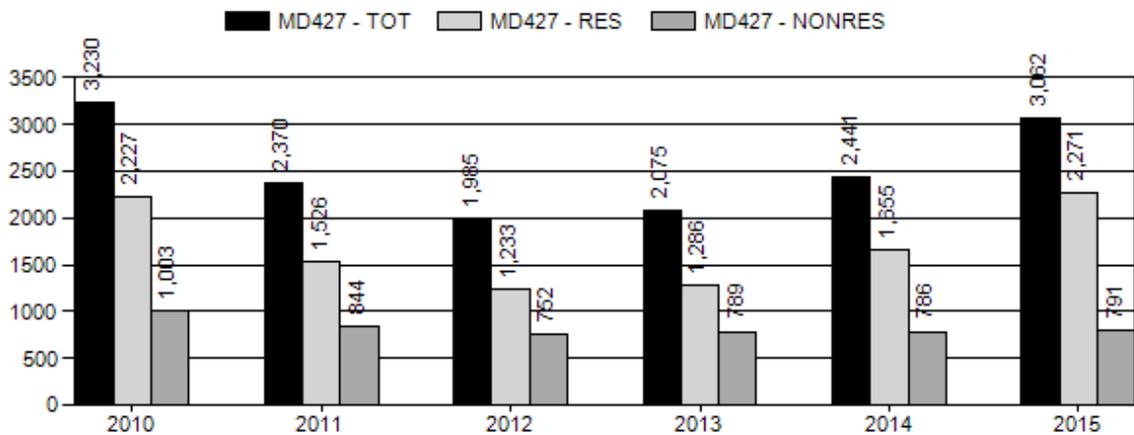
	<u>JCR Year</u>	<u>Proposed</u>
Females ≥ 1 year old:	0.8%	3.4%
Males ≥ 1 year old:	27.3%	35.2%
Juveniles (< 1 year old):	0.1%	0.1%
Total:	7%	9%
Proposed change in post-season population:	0%	6%



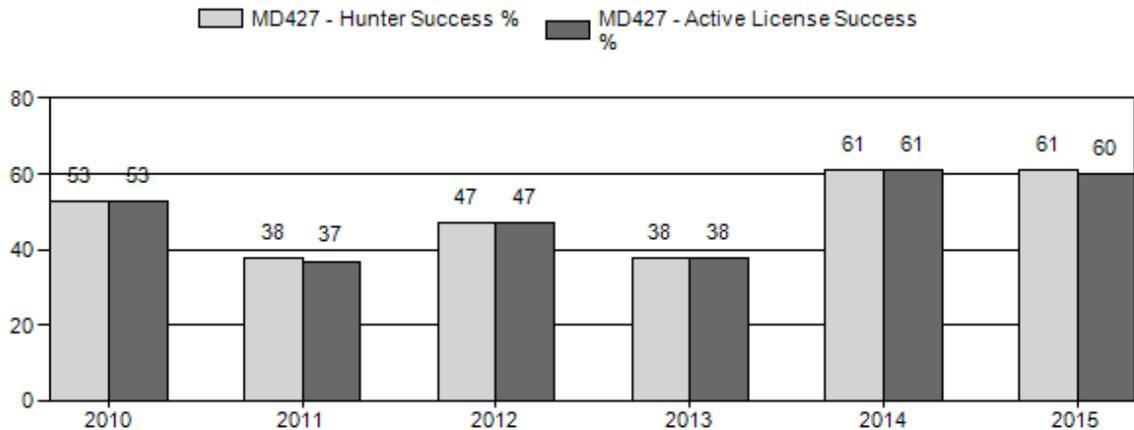
Harvest



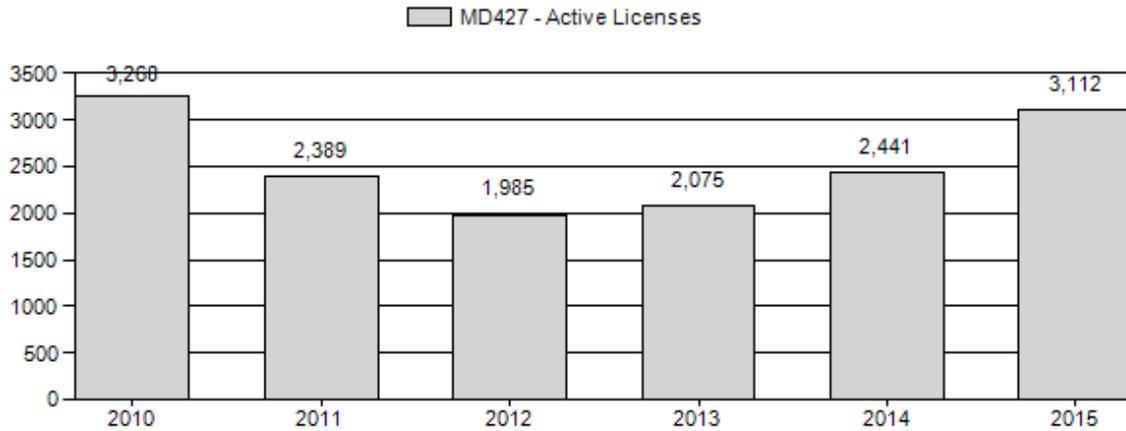
Number of Hunters



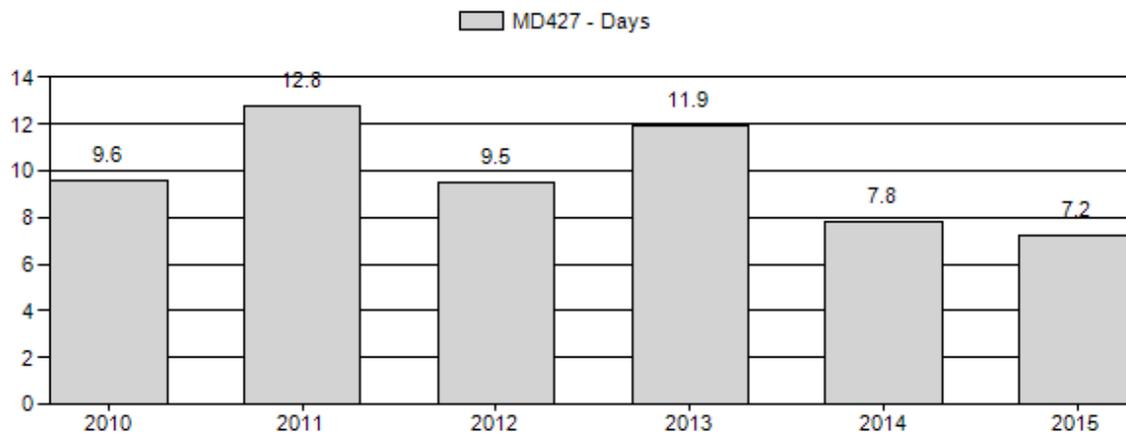
Harvest Success



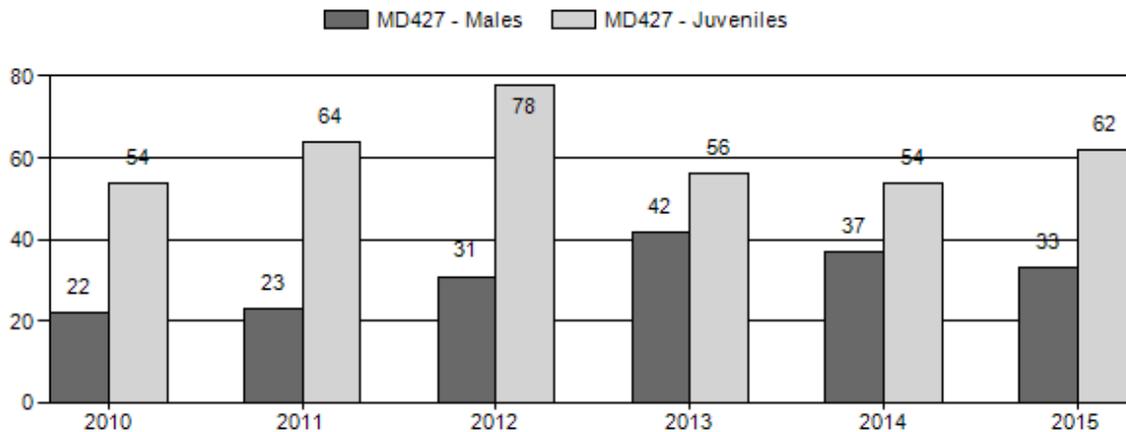
Active Licenses



Days per Animal Harvested



Postseason Animals per 100 Females



2010 - 2015 Postseason Classification Summary

for Mule Deer Herd MD427 - BAGGS

Year	Post Pop	MALES							FEMALE		JUVENIL		Males to 100 Females				Young to				
		Ylg	2+	2+	2+	2+	Total	%	Total	%	Total	%	Tot Cls	Cls Obj	Yng	Adult	Total	Conf Int	100 Fem	Conf Int	100 Adult
			Cls 1	Cls 2	Cls 3	UnCls															
2010	22,000	241	0	0	0	178	419	13%	1,892	57%	1,018	31%	3,329	0	13	9	22	± 0	54	± 0	44
2011	16,000	133	0	0	0	337	470	12%	2,059	54%	1,308	34%	3,837	0	6	16	23	± 1	64	± 3	52
2012	16,600	198	130	112	47	0	487	15%	1,592	48%	1,235	37%	3,314	0	12	18	31	± 2	78	± 3	59
2013	16,400	346	274	168	72	0	860	21%	2,066	51%	1,152	28%	4,078	0	17	25	42	± 2	56	± 2	39
2014	20,000	272	230	189	82	0	773	19%	2,112	52%	1,151	29%	4,036	0	13	24	37	± 2	54	± 2	40
2015	25,100	267	300	212	77	0	856	17%	2,603	51%	1,604	32%	5,063	0	10	23	33	± 1	62	± 2	46

2016 HUNTING SEASONS

SPECIES : **Mule Deer**

HERD UNIT : **Baggs (427)**

HUNT AREAS: **82, 84, 100**

Hunt Area	Type	Season Dates		Quota	License	Limitations
		Opens	Closes			
82		Oct. 1	Oct. 12		General	Antlered mule deer or any white-tailed deer
		Oct. 1	Oct. 14		General youth	Any deer
	6	Oct. 1	Oct. 12	250	Limited quota	Doe or fawn
	8	Nov. 1	Dec. 15	25	Limited quota	Doe or fawn white-tailed deer valid on private land
84	1	Oct. 1	Oct. 14	75	Limited quota	Antlered mule deer or any white-tailed deer
100		Oct. 1	Oct. 5		General	Antlered mule or any white-tailed deer
		Oct. 1	Oct. 7		General youth	Any deer

Special Archery Season Hunt Areas	Season Dates	
	Opens	Closes
82	Sep. 1	Sep. 30
84	Sep. 1	Sep. 30
100	Sep. 1	Sep. 30

Hunt Area	Type	Quota change from 2015
<i>Region W</i>	<i>Gen</i>	<i>0</i>
82	7	-100
	6	+250
84	1	+25
Herd Unit Total	1	+25
	7	-100
	6	250
	Region W	0

Management Evaluation

Current Management Objective: 19,000 (2015)

Management Strategy: Special (2015)

2015 End-of-bio-year Estimate: 25,000

2016 Proposed Postseason Population Estimate: 23,600

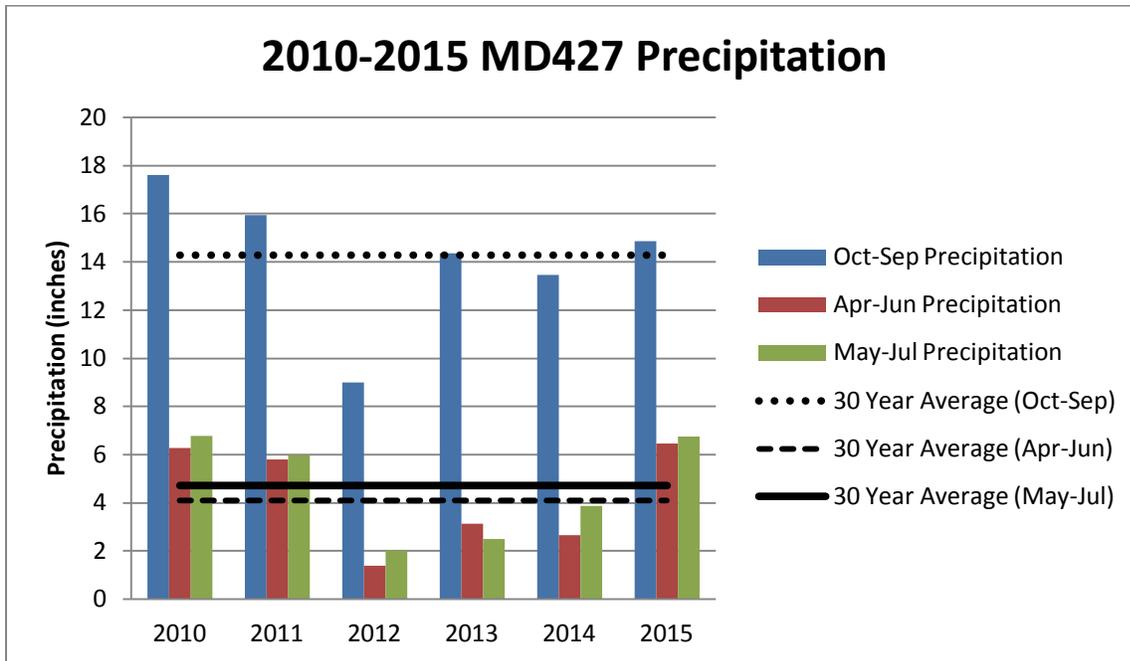
The Baggs Deer herd is above the population objective range of 15,200 – 22,800 (set in 2015) but within the special management parameter of buck ratio, therefore our current management strategy is to decrease population size through increased doe harvest.

Herd Unit Issues

Major issues impacting the Baggs mule deer herd include energy development, winter range and transitional range habitat quality and the desert portion of the herd. Throughout the Baggs herd we continue to see development of oil and gas fields associated with the Atlantic Rim Project that has the potential to impact migration routes and winter range. During the summer of 2015 a new gas and oil development project started in the Horse Mtn to Muddy Mtn area with 3 exploratory wells and plans to drill 5 more in the summer of 2016. This has the potential to impact migration routes, winter range and parturition areas by not only increased gas and oil activity but also winter maintenance on roads not currently open to the public. Within 2 years we may begin to see the development of the largest wind turbine project in North America, the Chokecherry-Sierra Madre Wind Project which will impact summer range and migration routes in the Miller Hill area.

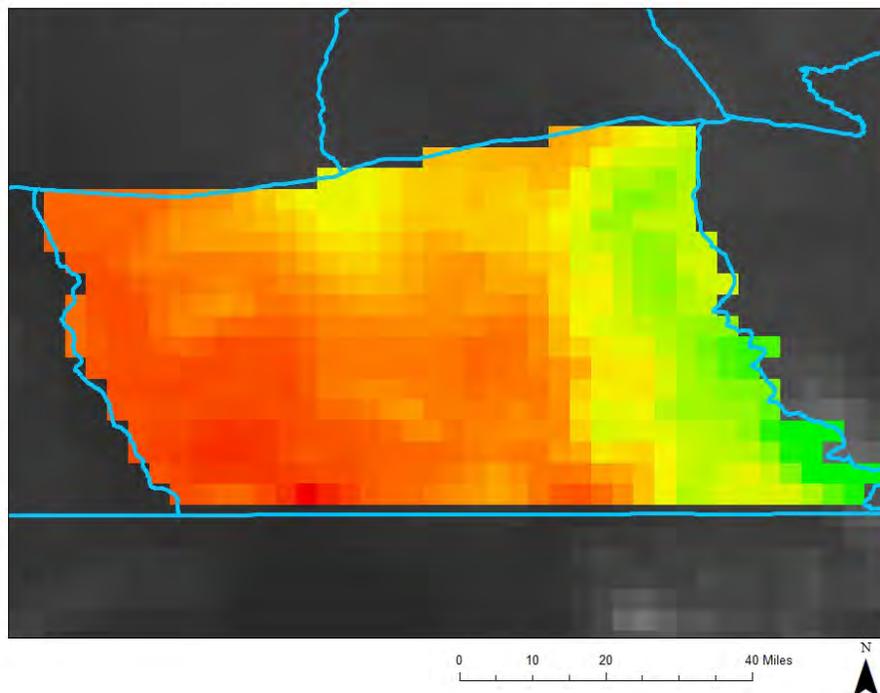
In hunt areas 84 and 100 we are not seeing the same population response as we are seeing in hunt area 82. Although hunt areas 84 and 100 have typically been more xeric, the divergence between the “core” population in hunt area 82 and these “fringe” areas is becoming more prominent. This issue may become more relevant if we do not see a response by resident mule deer in these hunt areas in the next few years.

Weather



Parameter-Elevation Relationships on Independent Slopes Model (PRISM) was utilized to estimate precipitation by calculating a climate-elevation regression for each Digital Elevation Model grid cell (4 km resolution).

BMDHU Growing Season Precipitation (Apr-Jun)



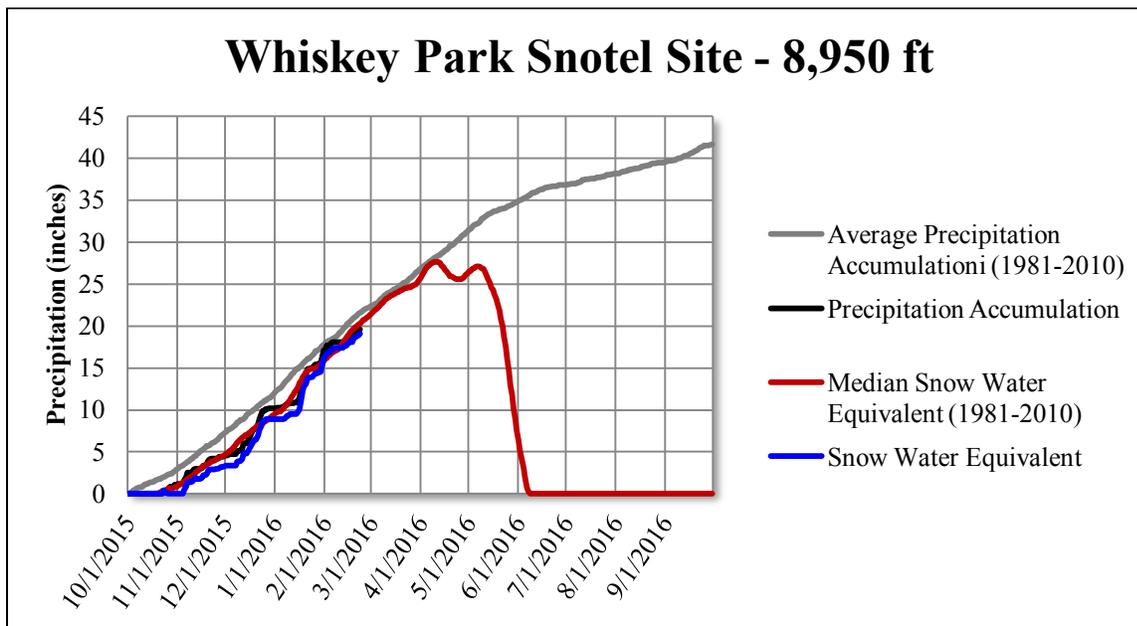
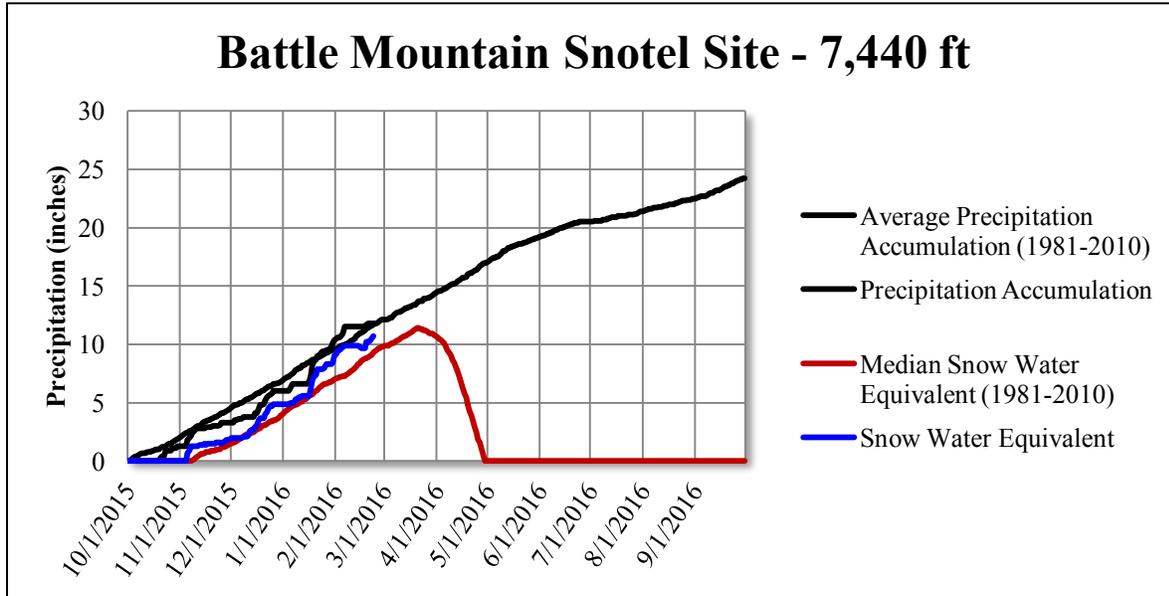
Precipitation

Annual bio-year precipitation from October 2014 through September 2015 was slightly higher than the 30 year average. Growing season precipitation (April-June 2015) and precipitation in high elevation spring/summer/fall ranges (May-July 2015) were notably higher than the 30 year average. As illustrated by the above graph, most of the precipitation occurred outside of the primary growing season, likely in the form of snow. There was significant spring moisture in

2015 from both early spring snows and significant late spring rain events. Although August was fairly dry, there was some early fall moisture in September.

Winter Severity

As of mid-February the Baggs mule deer herd unit has seen fairly average winter conditions across elevations with the exception of particularly high wind speeds in February. At lower elevations, as reported by the Battle Mountain Snotel Site, snowpack (snow water equivalent) is at 113% of normal. Higher elevations have slightly lower winter snowpack with the Whiskey Park Snotel Site reporting a snowpack that is 94% of normal.



Habitat

Exceptional fall precipitation in 2014 and mild 2014-2015 winter conditions allowed deer to enter winter with above average body condition. Growing season precipitation was higher than the 30 year average in 2015, resulting in excellent production of grasses, forbs, and shrubs across all seasonal ranges providing for ample forage during early parturition. However, despite

favorable early season precipitation, many important shrub habitats continue to underperform due to maturity and decadence caused by a lack of disturbance.

No permanent vegetative transects were analyzed this year within the herd unit, but the new Rapid Habitat Assessment (RHA) methods developed by the WGFD were initiated in the BMDHU. During the 2015 field season, 25 RHAs were completed, of these sites, 15 were in winter/yearlong range and 10 were completed in summer/transition range (four of which were aspen sites, figure 4).

Figure 1. Baggs Rapid Habitat Assessment site distribution across the Baggs herd unit. Points outside of delineated crucial winter range and transitional habitat are in winter/year long range.

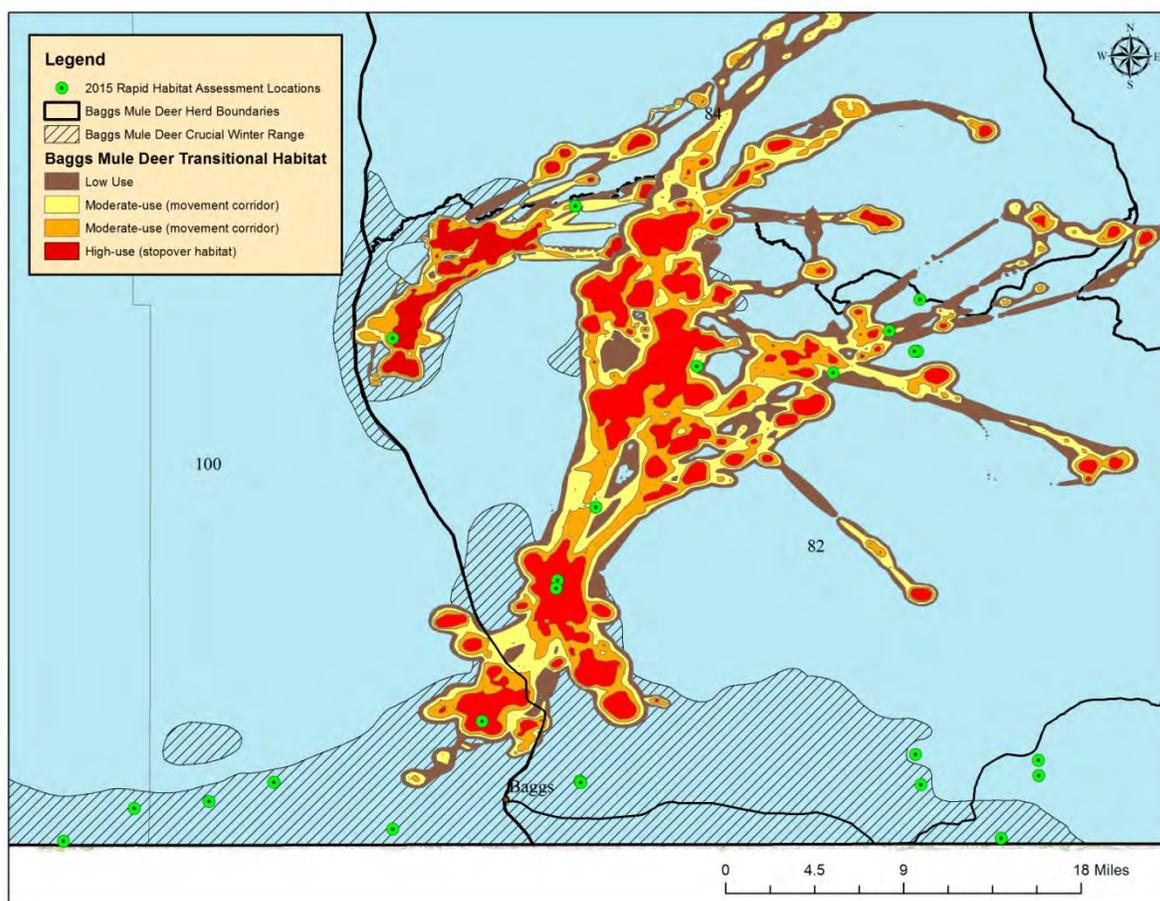


Table 1 summarizes age class, hedge class, and sagebrush canopy cover for assessment sites. From these data it appears that for both winter/yearlong and summer/transitional ranges in the BMDHU, deer browse species are trending toward mature and decadent age classes with low percentages of seedling & young age classes present (Figure 2). At each site, the two primary shrubs were assessed for long-term browse levels and an overall hedge class was determined (Table 1, Figure 3). The summarized hedge class data show that the primary browse species for both winter/yearlong and summer/transitional ranges are moderately hedged (55-60%). Lastly, 40% of the winter/yearlong sites assessed had sagebrush canopy cover >25%, while summer/transitional range typically was not associated with sagebrush cover. The shrub summary data suggests that the majority of preferred mule deer browse species through the BMDHU seasonal ranges are trending toward an older age class while receiving moderate browse pressure with high sagebrush canopy covers in winter range. As such, many of these

sites would be good candidates for some sort of shrub treatment to set back age class and nutritive quality of shrubs for preferred mule deer browse species.

Table 1. Baggs 2015 Rapid Habitat Assessment Shrub Summary

	Age Class					Hedge Class			Sagebrush Cover Class			
Mule Deer Seasonal Range	Seedling	Young	Mature	Decadent	Dead	Light	Moderate	Severe	<5%	5-15%	16-25%	>25%
Winter/Yearlong Sites	4%	6%	71%	16%	4%	24%	57%	19%	7%	20%	33%	40%
Summer/Transition Sites	6%	15%	63%	12%	5%	20%	60%	20%	0%	75%	0%	25%

Figure 2. Baggs 2015 RHA shrub age class summary

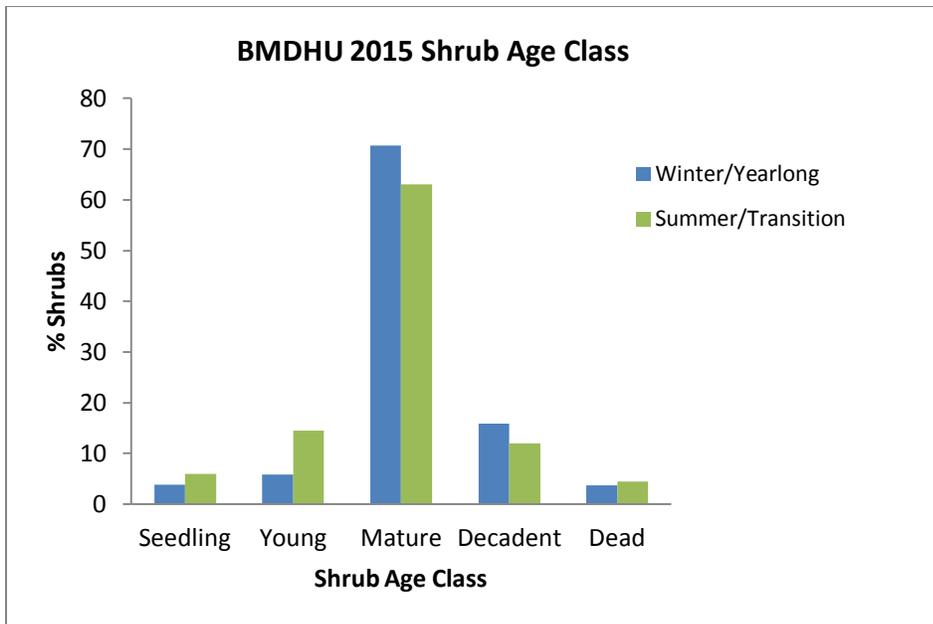
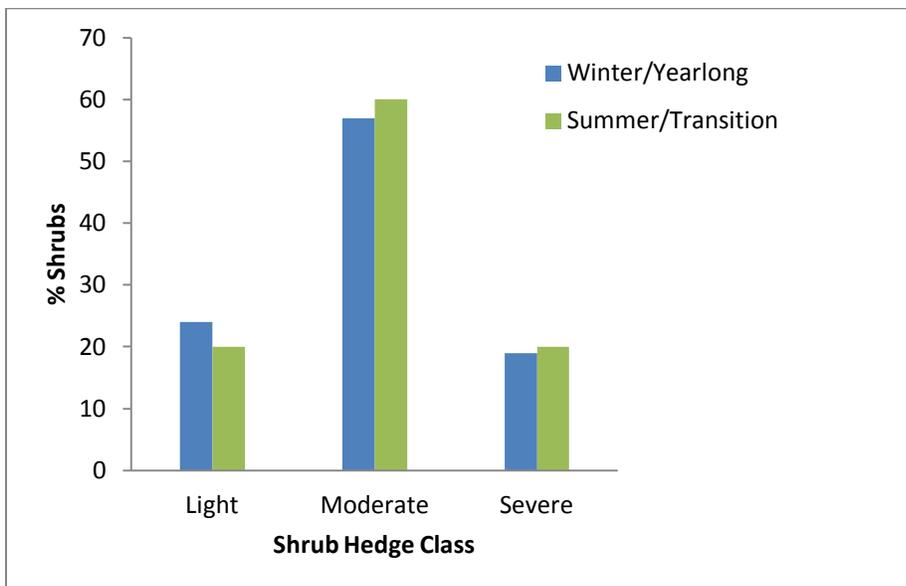


Figure 3. Baggs 2014 RHA shrub hedge class summary.



Overall habitat condition was determined by assessing the following habitat traits: seedling/young shrubs present, shrub mortality/decadence, relative composition (shrubs, grasses, forbs), species diversity, conifer encroachment, invasive plants, plant litter, erosion, and percent bare ground. Table 2 and Figure 4 summarize the overall habitat condition for sites assessed within mule deer winter/yearlong and summer/transition ranges within the BMDHU. These data suggest that habitat condition is better in summer/transition range with a greater percentage of sites in neutral and poor condition in winter/yearlong sites.

Cheatgrass and alyssum were the major invasive plant species found at assessment sites in 2015 (Table 2, Figure 4). These invasive species were much more prevalent in winter/yearlong sites, with 47% having significant presence. Although there were invasives present in summer/transition sites, there were sites with no invasives and no sites with a significant presence. As such, it may be important to specifically address invasive species issues on

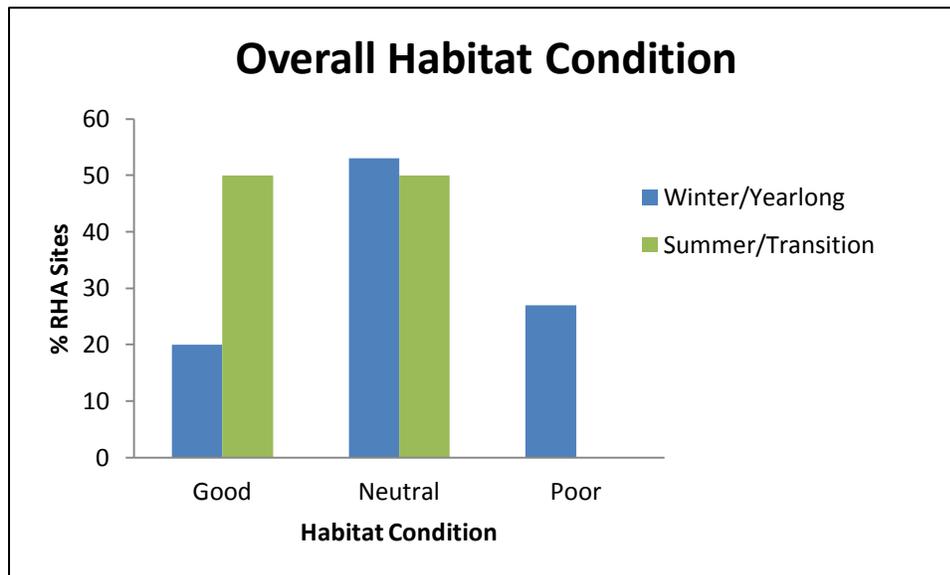
winter/yearlong range within the BMDHU and carefully consider invasives in all habitat treatments.

Lastly, Table 2 summarizes conifer encroachment issues in winter/yearlong range. For the sites that were adjacent to conifer habitats, 33% had phase 1 (low density) encroachment and 27% had moderate density (phase 2) encroachment. Conifer encroachment treatments should be considered in phase 1 & phase 2 areas dependent upon understory species, presence of invasive species, and cost of removal. Summer/transitional sites assessed did not have conifer encroachment issues, however, aspen sites were not analyzed in this summary.

Table 2. Baggs 2015 Rapid Habitat Assessment General Condition Summary

Mule Deer Seasonal Range	Overall Condition			Invasives			Conifer Encroachment			
	Good	Neutral	Poor	None	Some	Many	N/A	Phase 1	Phase2	Phase 3
Winter/Yearlong Sites	20%	53%	27%	0%	53%	47%	40%	33%	27%	0%
Summer/Transition Sites	50%	50%	0%	33%	67%	0%	*100%	0%	0%	0%

Figure 4. Baggs 2015 RHA Habitat Condition Summary



Field Data

The drought impacting this herd coupled with severe winters and increasing human activity in areas that had not had human activity over the last 10 years has been a challenge for the mule deer in the Baggs herd. However, despite these challenges we have seen deer numbers increase to objective levels over the last 3 years due to recent mild winters, higher moisture patterns and conservative hunting seasons. The point-restriction and subsequent removal of the point-restriction has allowed for buck ratios to increase and for a good representation of age classes to be seen in the herd. Currently 36% of bucks are in the class I category, 24% in the class II and 9% in the class III delineation. The remainder, 31% were yearling bucks this year.

Fawn ratios in this herd in recent years have been lower than the prescribed 65:100 (20-year average, 58:100) however, the herd seems to grow despite these lower fawn ratios. Recent data from Colorado Parks and Wildlife indicates that fawn survival has been high in recent years (~88% survival in 2013, pers. comm. Darby Finley, CPW) and may begin to give us insight into why this herd can grow with lower fawn ratios.

Unfortunately, we do not have separate data for those resident mule deer in hunt area 100 and 84 to give us a better indication of the issues facing these portions of the population. However, some potential hindrances to these populations could include poorer habitat conditions or competition with other ungulates. Research and habitat monitoring should be focused on trying to decipher these potential issues.

Harvest Data

The 2015 hunting season saw a return to pre-2007/08 levels (2003 to 2007 average buck harvest, 1600, 2015 buck harvest, 1,700). The 2015 hunting season brought a higher than average (10 year average, 55%) hunter success rate at 61% and a higher than average (10 year average, 2,700) hunter participation at 3,000. These statistics lead to an increase in hunter satisfaction from 53% in 2013 to 72% in 2015 of survey participants that responded they were either “satisfied” or “very satisfied. Despite the great opportunity for youth hunters during the youth only portion of the season, we have not seen many taking advantage of the season. Those that are taking advantage are extremely appreciative of the season and are usually thrilled with the opportunity. Doe harvest was implemented in 2015 to begin to decrease the growth rate of this herd. Hunters that had this license were very successful at 84% in their pursuit of meat for the freezer.

Population

The current post-hunt population model estimates for 2015 indicate we are now above the objective at 25,000 animals. Despite the SCJ, SCA model having the lowest relative AICc value (146), we chose the TSJ, CA model (178) based on what we believe to be a better representation of the actual population trend, buck ratio comparison and size based on hunter satisfaction, plausibility and field observations. The SCJ, SCA model shows a population that was nearly 3 times over objective and that does not seem to be biologically feasible. Within the TSJ, CA model we constrained adult survival to lower levels (0.3 to 0.82) during the 2007-08 and 2010-11 winters to match the difficult winter conditions.

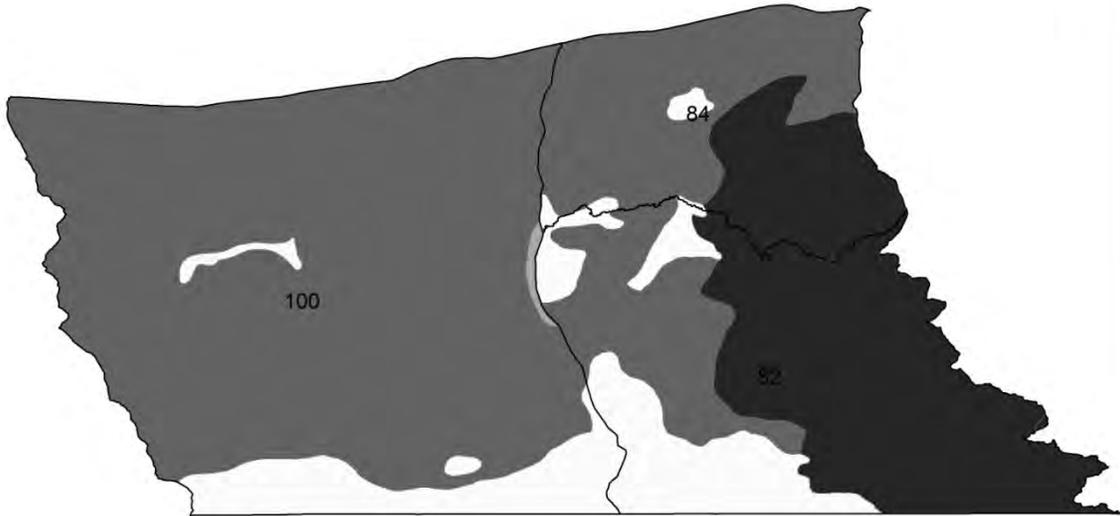
The spreadsheet model seems to be a useful tool for this herd; however, without an independent estimate of the population size and the indication from studies from WGFD and Colorado Parks and Wildlife showing high interchange between the two states, we must be cautious in the use of this model as our only source of information.

Management Summary

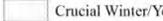
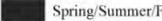
Over the course of the last 1.5 years the Baggs Mule Deer Working group has been meeting to discuss mule deer management and habitat issues occurring within the Baggs mule deer herd unit. Most recently (November 2015) the working group made several recommendations on a new season structure that would attempt to maintain the high amount of opportunity typical of the Baggs mule deer herd but to deal with the issue of overcrowding during the rifle season in hunt area 82. This idea was welcomed by the WGF administration however, a broader scope of public input is needed before moving to a completely new season structure, one not currently in use in any other part of the state. We will fashion a survey that will attempt to gather public input on several different season structures to maintain opportunity and allow for a more quality experience with fewer hunters on the ground at the same time. The working group was in consensus that the population size in relation to habitat quality was not equal therefore they made the recommendation that we offer doe/fawn licenses. We are increasing doe/fawn licenses to 250 and removing the area restrictions we had in place last year with the hunt area 82 type 7 license to allow doe hunting throughout the hunt area.

In addition, this year we are proposing to try and spread out harvest pressure by increasing the hunting season from 10 days to 12 days. The continued high buck ratios in hunt area 82 are going to allow us to spread out harvest across more age classes thus giving the opportunity for more bucks to make it into older age classes. We will continue to be conservative in both of our “desert” hunt areas (84 and 100) until we get a good indication from hunters, field managers and locals that the population is on the rebound.

MD427 Baggs Mule Deer Herd Seasonal Ranges



Baggs Mule Deer Seasonal Range

	Winter/Year long		Crucial Winter/Year long		Spring/Summer/Fall		Crucial Winter
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