Laramie Region

Annual Big Game Herd Unit Reports
2011

2001 Conservation Stamp Art, White-tailed Deer by Brent Todd

Wyoming Game and Fish Department
Cheyenne

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PRONGHORN

2011 - JCR Evaluation Form

SPECIES: Pronghorn | PERIOD: 6/1/2011 - 5/31/2012

HERD: PR520 - CHALK BLUFFS

HUNT AREAS: 111 | PREPARED BY: MARTIN HICKS

	2006 - 2010 Average	2011	2012 Proposed
Population:	0	N/A	N/A
Harvest:	223	200	180
Hunters:	273	276	270
Hunter Success:	82%	72%	67%
Active Licenses:	316	291	280
Active License Percent:	71%	69%	64%
Recreation Days:	1,182	1,420	1,290
Days Per Animal:	5.3	7.1	7.2
Males per 100 Females	23	22	
Juveniles per 100 Females	40	51	

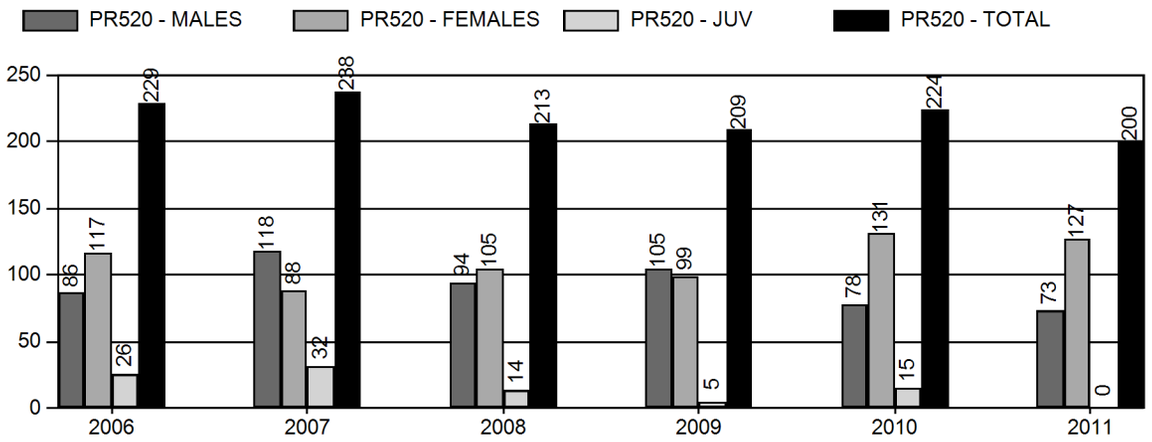
Population Objective:	450
Management Strategy:	Recreational
Percent population is above (+) or below (-) objective:	N/A%
Number of years population has been + or - objective in recent trend:	0
Model Date:	None

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

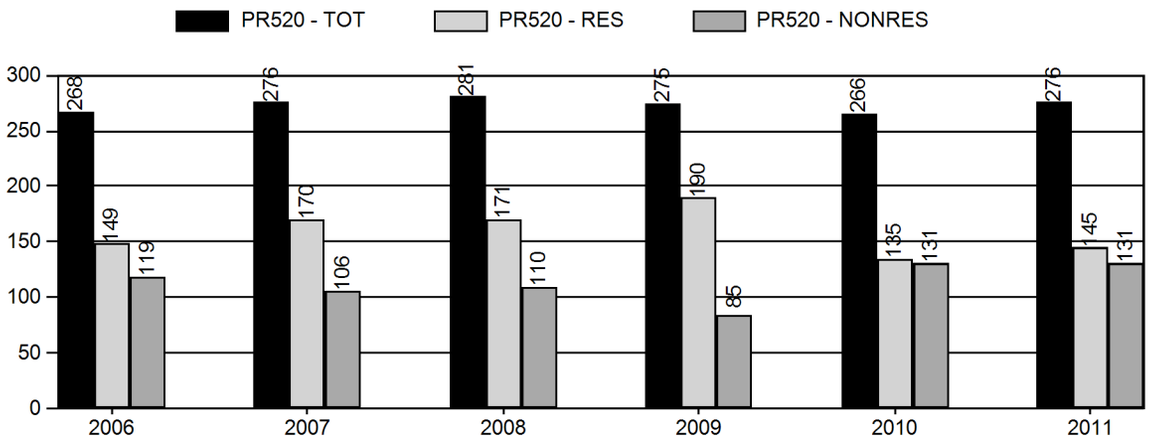
	JCR Year	Proposed
Females ≥ 1 year old:	na%	na%
Males ≥ 1 year old:	na%	na%
Juveniles (< 1 year old):	na%	na%
Total:	na%	na%
Proposed change in post-season population:	na%	na%

Population Size - Postseason

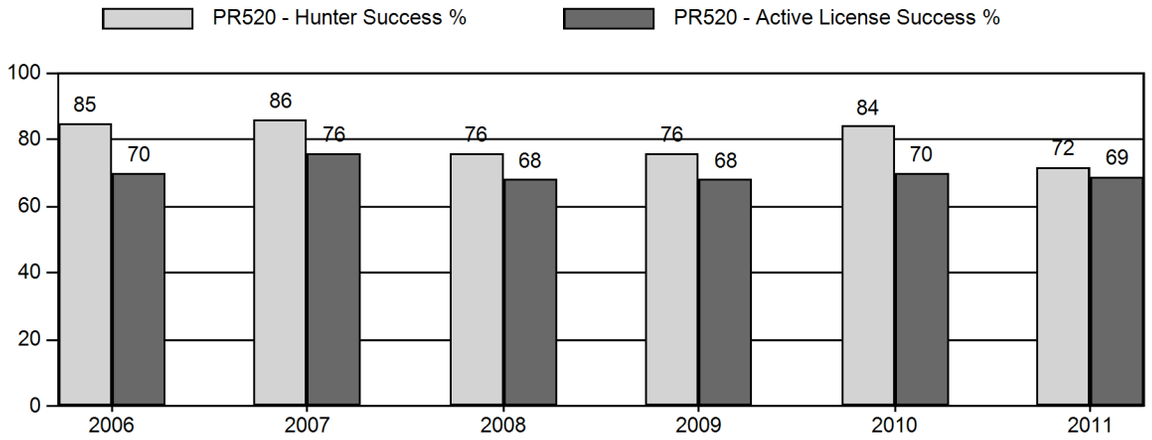
Harvest



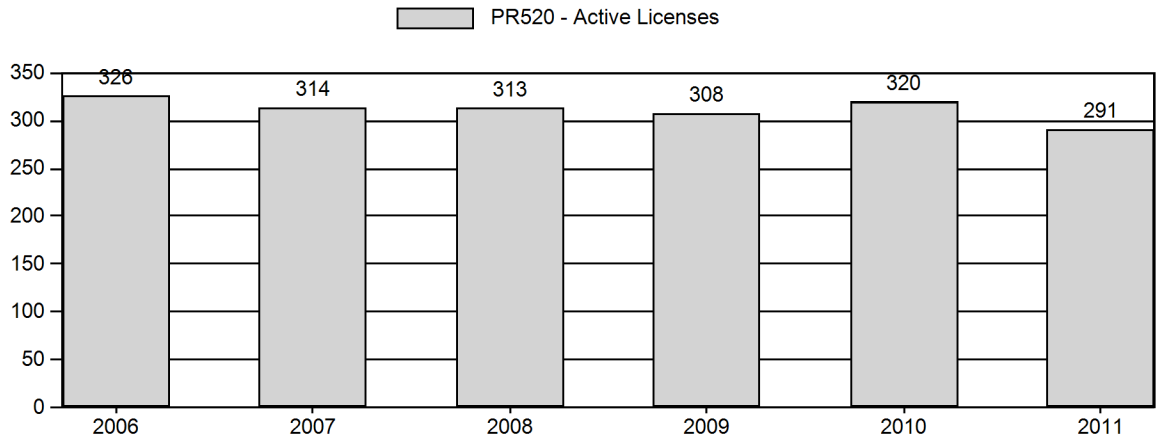
Number of Hunters



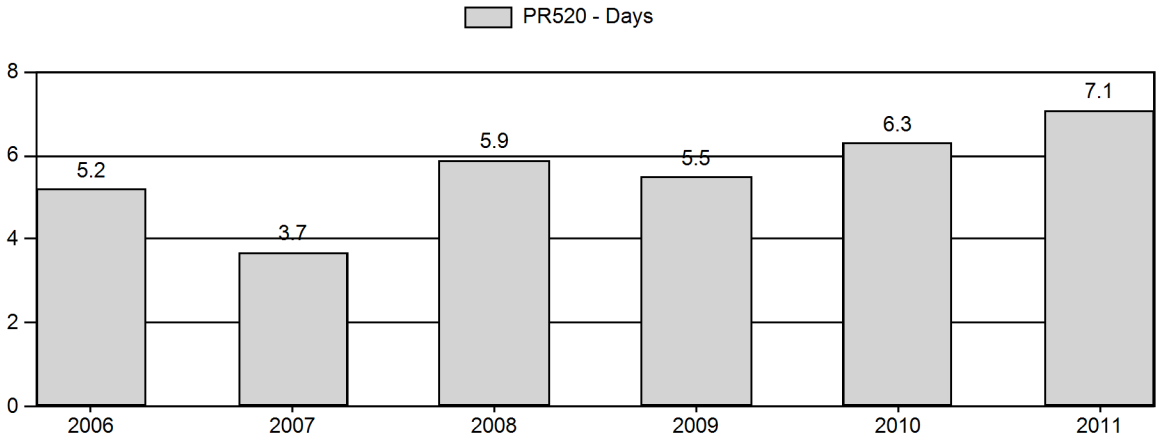
Harvest Success



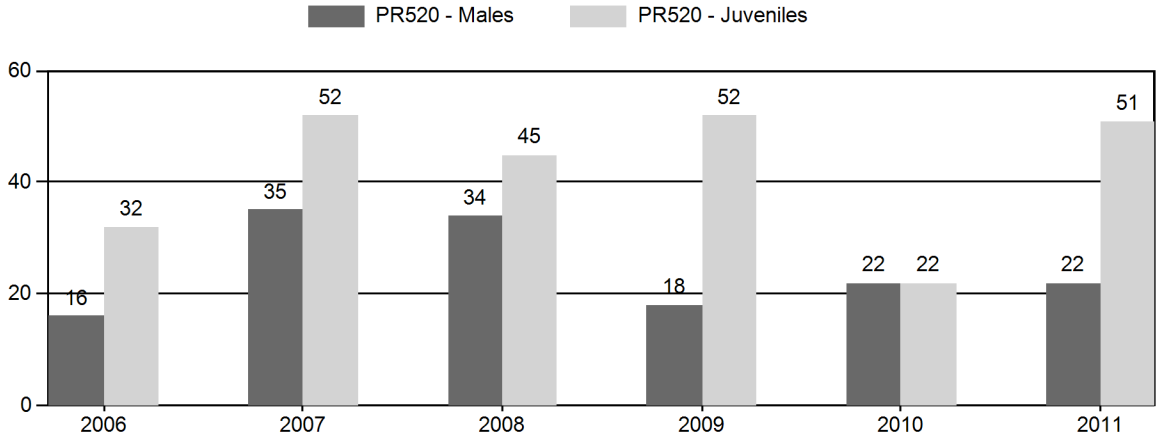
Active Licenses



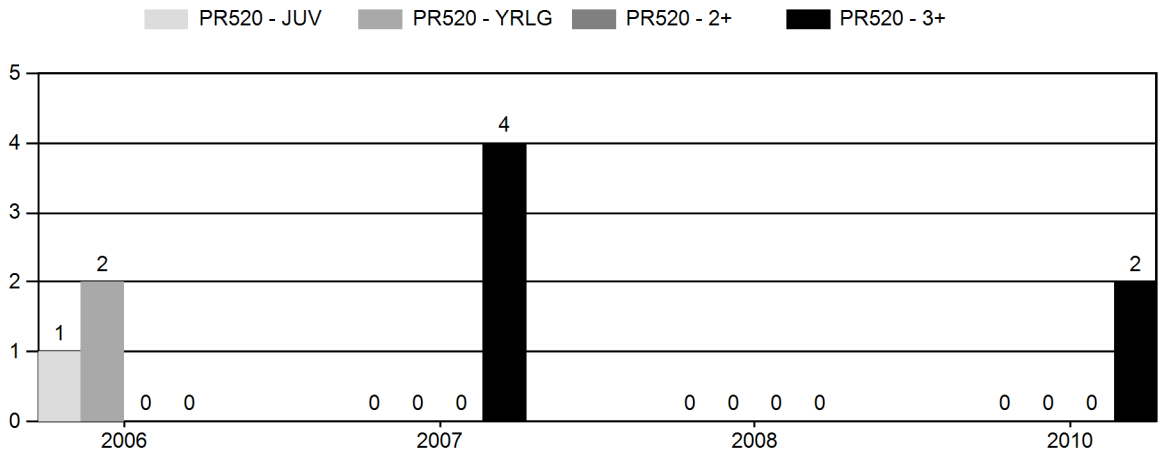
Days Per Animal Harvested



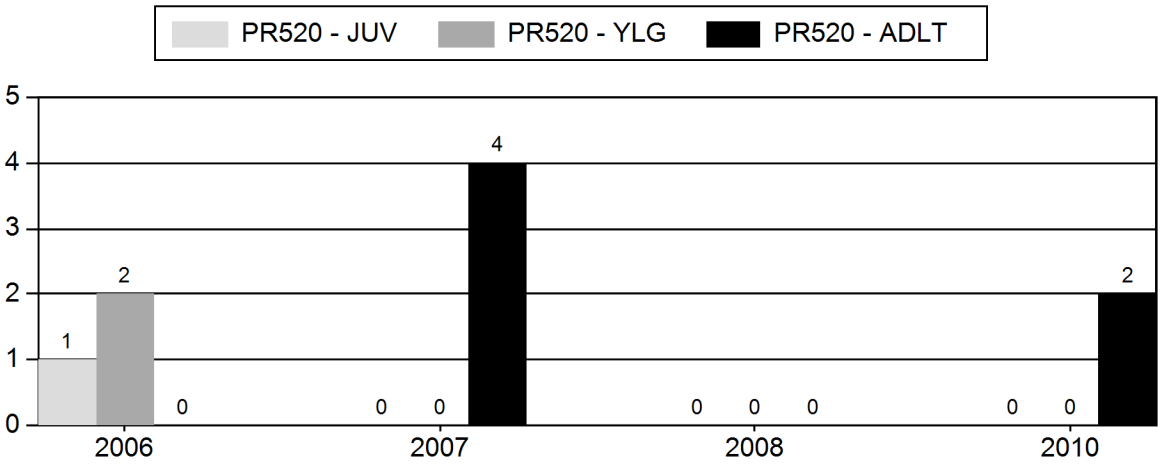
Preseason Animals per 100 Females



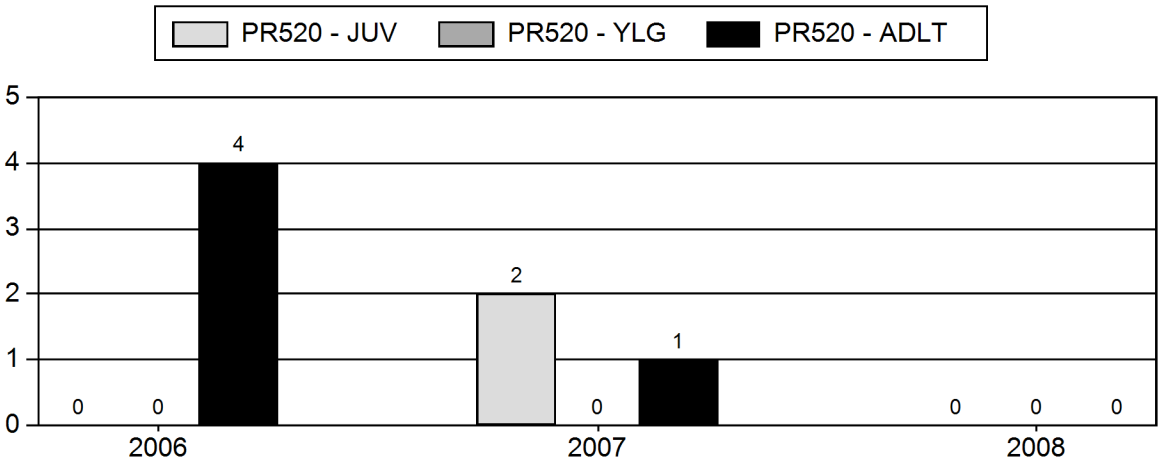
Age Structure of Field Checked Males



Age Structure Data (Field and Laboratory) - Male



Age Structure Data (Field and Laboratory) - Female



2006 - 2011 Preseason Classification Summary

for Pronghorn Herd PR520 - CHALK BLUFFS

		MALES				FEMALES		JUVENILES				Males to 100 Females				Young to		
Year	Pre Pop	Ylg	Adult	Total	%	Total	%	Total	%	Tot Cls	Cls Obj	Ylng	Adult	Total	Conf Int	100 Fem	Conf Int	100 Adult
2006	0	5	13	18	11%	114	67%	37	22%	169	0	4	11	16	± 0	32	± 0	28
2007	0	7	14	21	19%	60	54%	31	28%	112	0	12	23	35	± 0	52	± 0	38
2008	0	2	24	26	19%	77	56%	35	25%	138	304	3	31	34	± 0	45	± 0	34
2009	0	1	15	16	11%	89	59%	46	30%	151	348	1	17	18	± 0	52	± 0	44
2010	0	0	17	17	15%	78	70%	17	15%	112	289	0	22	22	± 0	22	± 0	18
2011	0	1	14	15	13%	67	58%	34	29%	116	370	1	21	22	± 0	51	± 0	41

2011 HUNTING SEASONS

PR520 - CHALK BLUFFS

Hunt Area	Add'l Hunt Areas	Type	Quota	Season Dates	Limitations
111		ARCH		08/15 - 09/16	Refer to Section 3 of this Chapter
111		Type 1	150	09/17 - 10/14	Any
111		Type 6	200	09/17 - 08/14	Reduced Price doe/fawn
111		Type 6	200	11/15 - 12/31	Unused Area 111 Type 6 licenses

Table 1. PH520 Harvest, 2011.

Area	Type	Active Lic/H	Buck	Doe	Fawn	Total	Success	Days/Harve	Days	Licenses Sold
2011										
111 CHALK BLUFFS										
	Type 1	130	73	5	0	78	60%	7.7	602	148
	Type 6	161	0	122	0	122	75.80%	6.7	818	200
Pooled Total		276	73	127	0	200	72.50%	7.1	1420	
Pooled Resident		145	39	47	0	86	59.30%	11.6	997	
Pooled Nonresident		131	34	80	0	114	87.00%	3.7	423	
2011 Hunt Area Total		276	73	127	0	200	72.50%	7.1	1420	348
2011 Herd Total		276	73	127	0	200	72.50%	7.1	1420	348

*Active Licenses

2006 - 2011 Harvest Age Structure

for Pronghorn Herd PR520 - CHALK BLUFFS

	Males										Females										Herd
Year	Juv	1	% 1 *	2	3 ^	% 3 **	Total Aged ++	Not Aged +++	Unk	Total Chkd	Juv	1	% 1 *	2	3 ^	% 3 **	Total Aged ++	Not Aged +++	Unk	Total Chkd	Total
2006	1	2	100%	0	0	0%	3	0	0	3	0	0	0%	2	2	50%	4	0	0	4	7
2007	0	0	0%	0	4	100%	4	0	0	4	2	0	0%	1	0	0%	3	0	0	3	7
2008	0	0	0%	0	0	0%	0	0	0	0	0	0	0%	0	0	0%	0	0	0	0	0
2010	0	0	0%	0	0	0%	0	2	0	2	0	0	0%	0	0	0%	0	0	0	0	2

* Percent of aged animals (including unaged adults but excluding juveniles) 1 1/2 years old

^ Number of animals three years old and older. Animals aged older than three (excluding unaged adults) are lumped into this three plus category

** Percent of aged animals (not including juveniles or unaged adults) three years old or older

++ includes juveniles

+++ Unaged adults - unaged animals older than yearlings

CHALK BLUFFS ANTELOPE (A520)
HUNT AREA 111
2012 HUNTING SEASONS

HUNT AREA	TYPE	OPENS	CLOSES	LIMITATIONS
111	1	SEPT. ~~17~~15	OCT.14	L.Q.; 150 licenses any antelope
	6	SEPT. ~~17~~15	OCT.14	L.Q.; 200 licenses doe or fawn
		NOV. 15	DEC. 31	Unused Area 111 Type 6 licenses
ARCHERY				
111		AUG. 15	SEPT. ~~16~~14	Refer to Section 3 of this Chapter

CHANGES FOR 2012

- Have the opening day on the third Saturday, which falls on the 15th of September this year.

MANAGEMENT EVALUATION

Population: A reliable population estimate of the Chalk Bluffs Herd Unit has not been developed due to the interchange with Colorado. In 2009 a density estimate of 9,000 pronghorn (2 pronghorn/square mile) was estimated by the Colorado Division of Wildlife (CDOW) using the WGFD's Line Transect Sampling Method (Guenzel, 2007). As a result of this estimate the CDOW has slowly increased license numbers and season length. If we applied this density estimate to occupied habitat in the Chalk Bluffs Herd Unit there would be around 700 pronghorn, slightly more than 150% over the objective of 450. Given ongoing access issues and pronghorn movement patterns the current management practices of trying to maximize opportunity and minimize damage will remain in place.

The sample size for buck and fawn ratios continues to be below the 90% confidence level needed for and adequate sample size so that data continues to not help in inferring population levels.

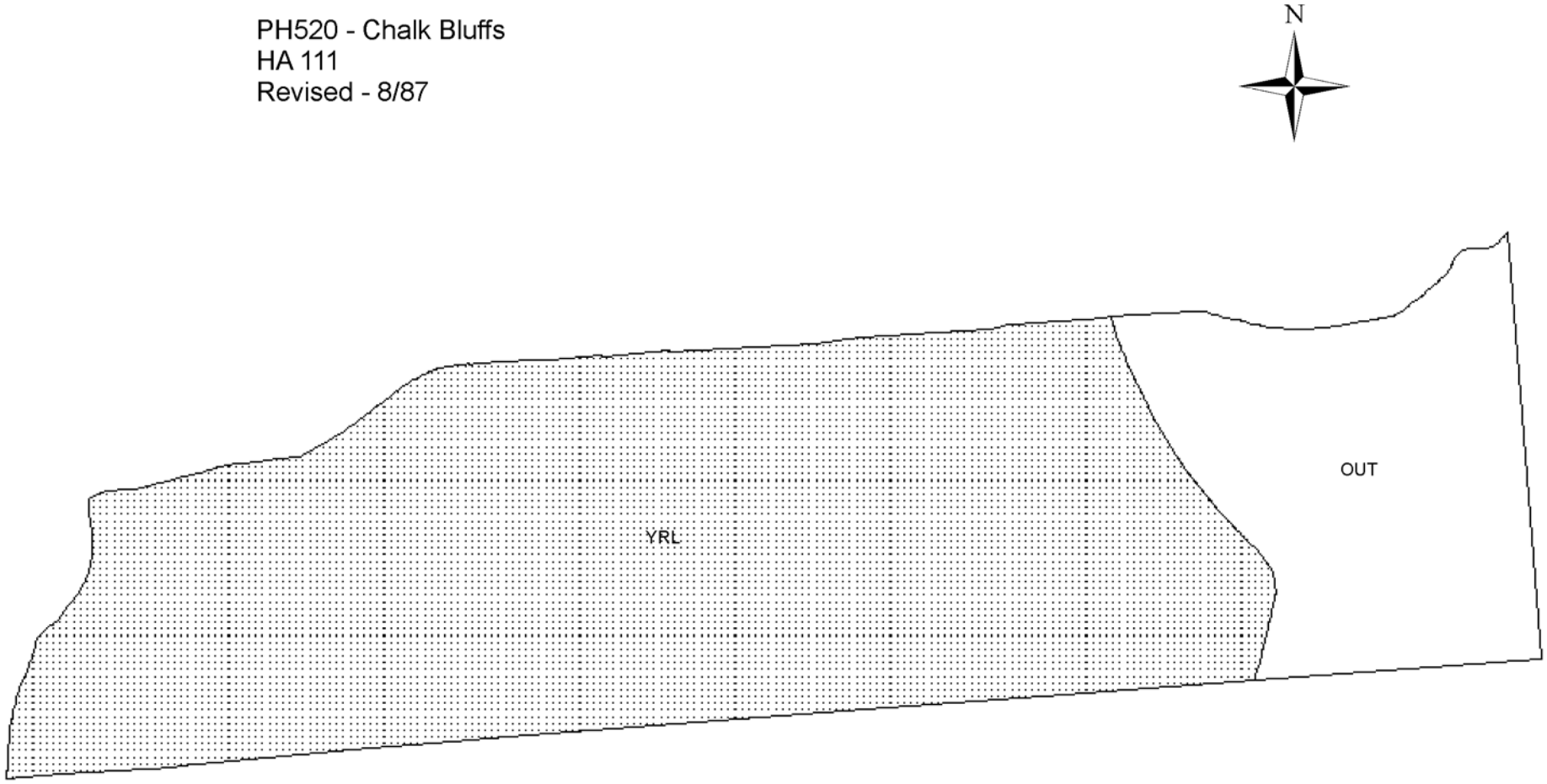
A herd unit objective review is slated within the next couple of years.

2011 Season: The 2011 season was designed to reduce pronghorn and allow opportunity where access is available. Type 1 harvest decreased to the five-year average with the same number of licenses available (n=150). Active licenses fluctuated around 140 during the past five seasons and in 2011 they decreased to 130. Harvest sequentially declined in 2011 (77 pronghorn) compared to the five-year average of 103. The 2011 Type 6 active licenses (152) and harvest (103 pronghorn) also decreased to the five-year average (175 active licenses, 120 pronghorn harvested) with the same number of permits issued (n=200) for the last six years.

Overall active license harvest success in 2011 (69%) has remained fairly consistent compared to the five-year average (70%) while 2011 hunter effort (7.1 days per harvest) increased compared to the five-year average (5.3 days per harvest). Given this data comparison it appears the population has declined. However there are several unknowns to consider. This is an interstate population with Colorado and landowners experience damage problems later in the season (November-December). Urban sprawl by commercial and rural development has increased significantly in the last 2-3 years. It appears that pronghorn numbers fluctuate based on weather and human disturbances combined with a decrease in accessible acres and an increase in lost habitat.

2012 Season: There are no changes to the 2012 season. This season structure is designed to try and maintain opportunity while minimizing damage. Based on past seasons, we predict there will be a harvest of 75 bucks, 130 does and 10 fawns for a total harvest of 215 pronghorn.

PH520 - Chalk Bluffs
HA 111
Revised - 8/87



2011 - JCR Evaluation Form

SPECIES: Pronghorn | PERIOD: 6/1/2011 - 5/31/2012

HERD: PR521 - HAWK SPRINGS

HUNT AREAS: 34-36 | PREPARED BY: MARTIN HICKS

	2006 - 2010 Average	2011	2012 Proposed
Population:	13,280	10,000	8,000
Harvest:	980	1,192	1,395
Hunters:	1,084	1,347	1,575
Hunter Success:	90%	88%	89 %
Active Licenses:	1,235	1,515	1,600
Active License Percent:	79%	79%	87 %
Recreation Days:	3,784	5,661	5,800
Days Per Animal:	3.9	4.7	4.2
Males per 100 Females	45	39	
Juveniles per 100 Females	49	46	

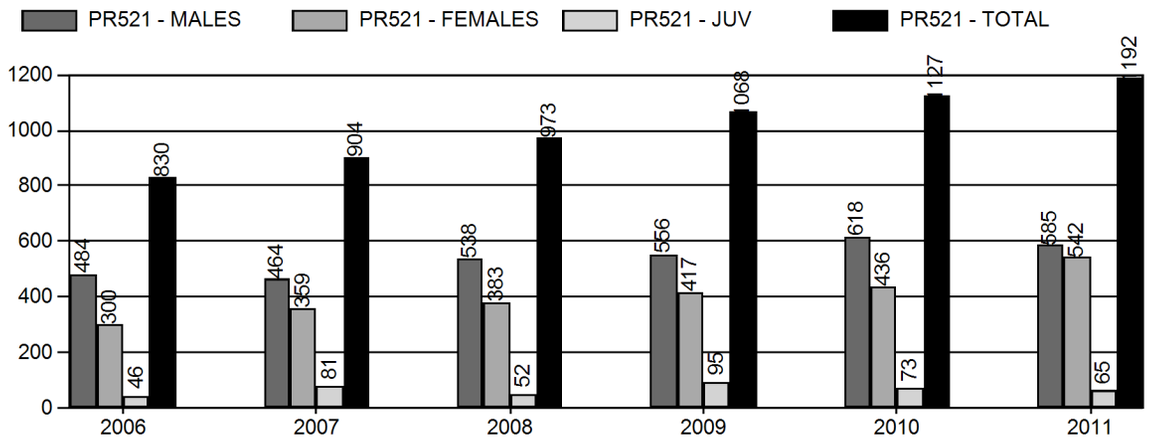
Population Objective:	7,000
Management Strategy:	Recreational
Percent population is above (+) or below (-) objective:	43%
Number of years population has been + or - objective in recent trend:	21
Model Date:	02/29/2012

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

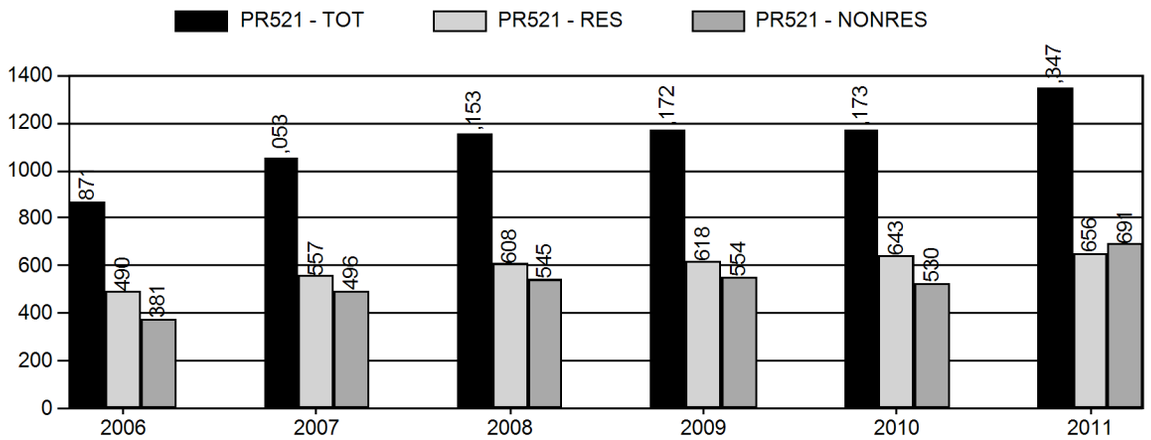
	JCR Year	Proposed
Females ≥ 1 year old:	9.5%	14.9%
Males ≥ 1 year old:	19.2%	25.5%
Juveniles (< 1 year old):	2.5%	3.6%
Total:	10.5%	14.9%
Proposed change in post-season population:	-23%	-25%

Population Size - Postseason

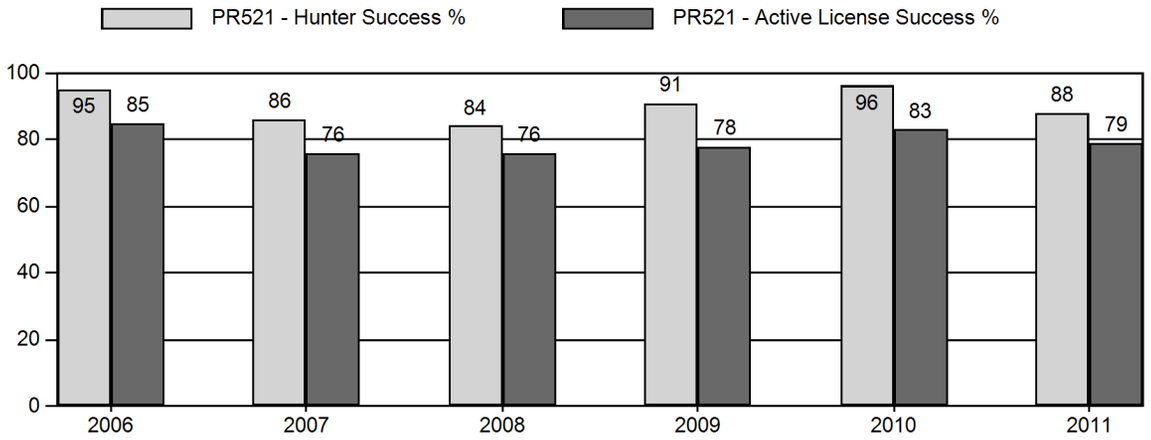
Harvest



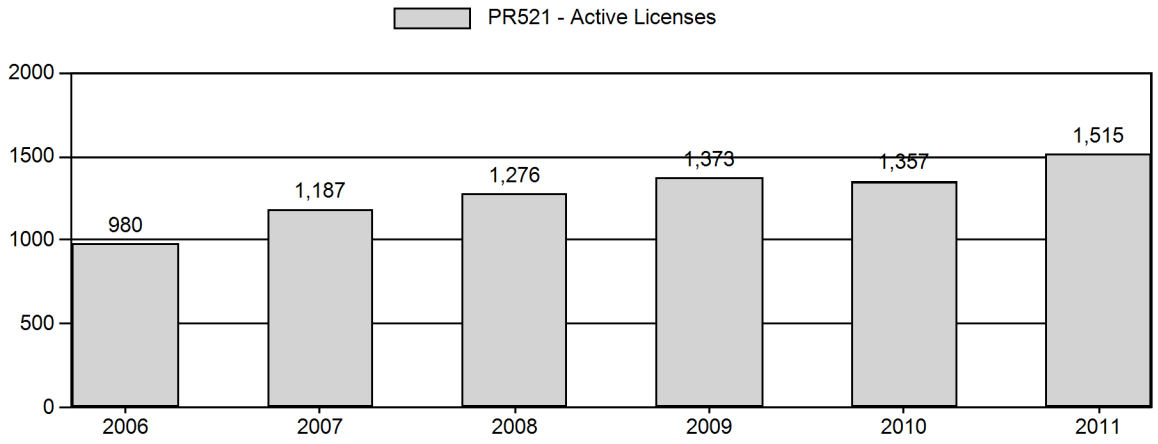
Number of Hunters



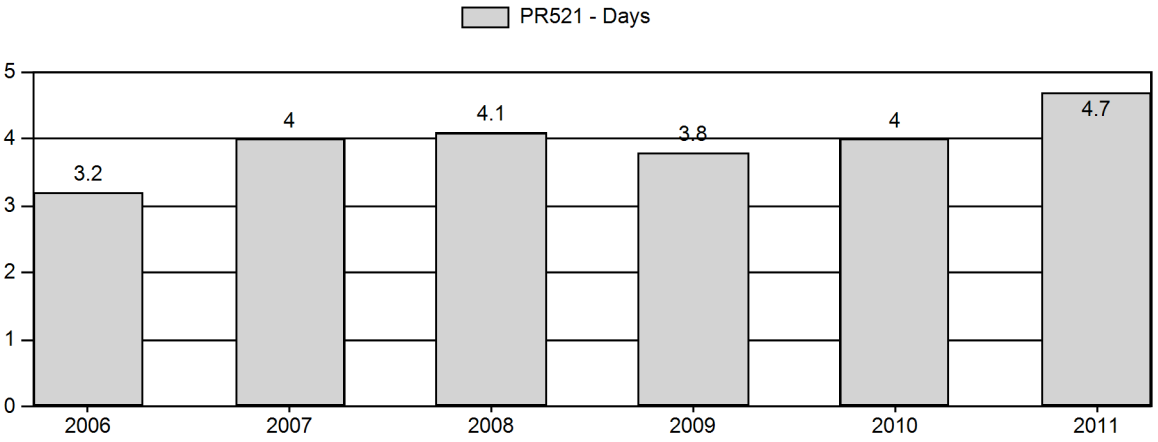
Harvest Success



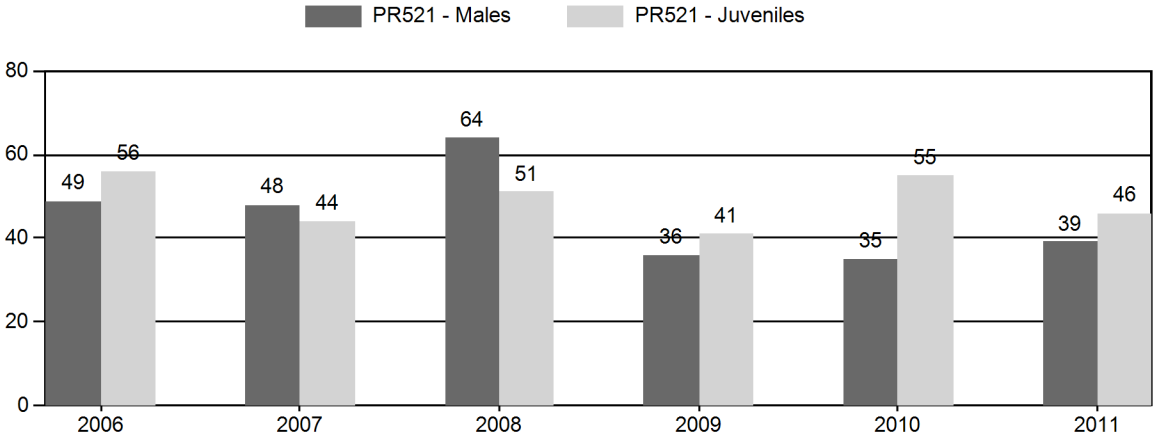
Active Licenses



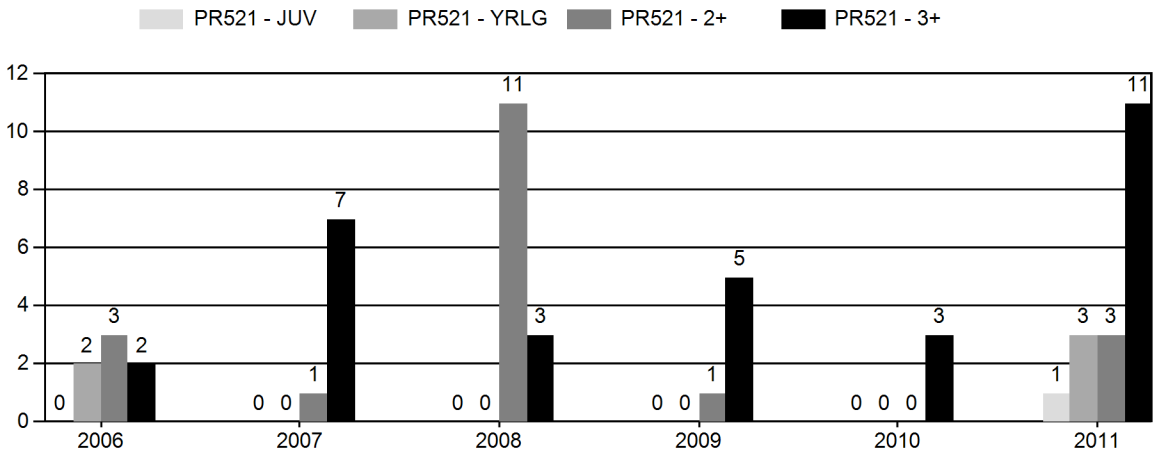
Days Per Animal Harvested



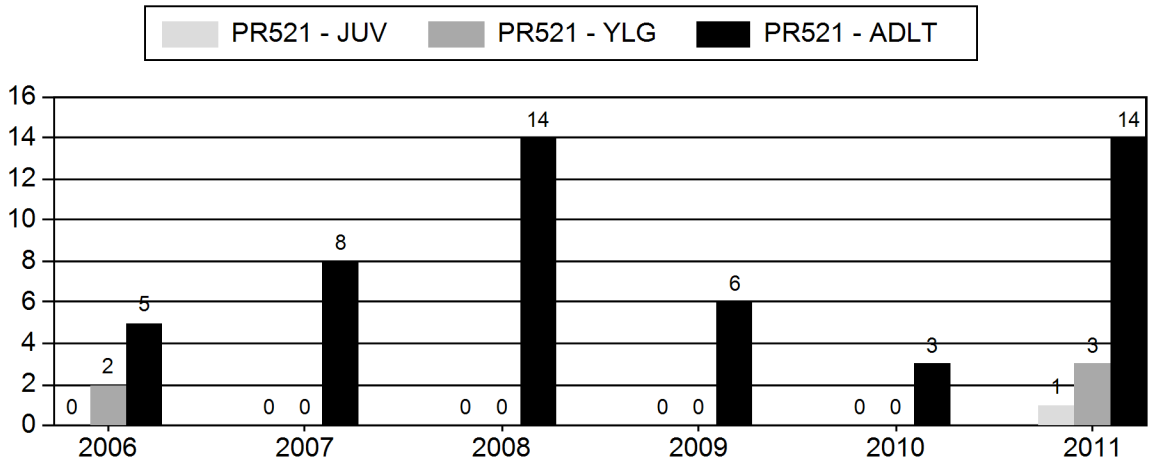
Preseason Animals per 100 Females



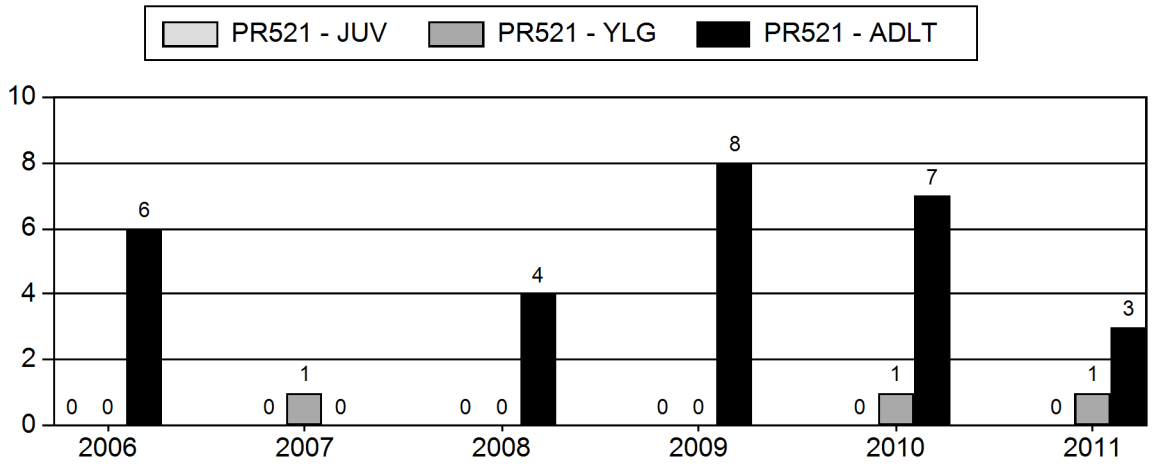
Age Structure of Field Checked Males



Age Structure Data (Field and Laboratory) - Male



Age Structure Data (Field and Laboratory) - Female



2006 - 2011 Preseason Classification Summary

for Pronghorn Herd PR521 - HAWK SPRINGS

		MALES				FEMALES		JUVENILES				Males to 100 Females				Young to		
Year	Pre Pop	Ylg	Adult	Total	%	Total	%	Total	%	Tot Cls	Cls Obj	Ylng	Adult	Total	Conf Int	100 Fem	Conf Int	100 Adult
2006	12,000	217	196	413	24%	842	49%	474	27%	1,729	1,682	26	23	49	± 4	56	± 5	38
2007	12,500	195	199	394	25%	824	52%	365	23%	1,583	1,315	24	24	48	± 5	44	± 4	30
2008	15,000	158	177	335	30%	524	47%	265	24%	1,124	1,418	30	34	64	± 7	51	± 6	31
2009	16,000	144	166	310	20%	872	57%	359	23%	1,541	1,010	17	19	36	± 4	41	± 4	30
2010	15,700	69	161	230	18%	658	53%	360	29%	1,248	1,183	10	24	35	± 0	55	± 0	41
2011	11,300	104	160	264	21%	669	54%	309	25%	1,242	1,378	16	24	39	± 4	46	± 5	33

2011 HUNTING SEASONS

PR521 - HAWK SPRINGS

Hunt Area	Add'l Hunt Areas	Type	Quota	Season Dates	Limitations
34		ARCH		08/15 - 09/30	Refer to Section 3 of this Chapter
34		Type 1	250	10/01 - 10/14	Any
34		Type 6	275	10/01 - 12/31	Reduced Price doe/fawn
35	36	ARCH		08/15 - 09/19	Refer to Section 3 of this Chapter
35		Type 1	375	09/20 - 10/14	Any
36		Type 1	225	09/20 - 10/14	Any
36		Type 6	250	09/20 - 12/31	Reduced Price doe/fawn

Table 1. PH521 Harvest Data, 2011.

Area	Type	Active Lic/H	Buck	Doe	Fawn	Total	Success	Days/Harve	Days	Licenses Sold
2011										
34 ROCK EAGLE										
	Type 1	230	182	8	0	190	82.60%	3.7	699	255
	Type 6	250	0	195	20	215	86%	4.6	999	275
Pooled Total		449	182	203	20	405	90.20%	4.2	1698	
Pooled Resident		268	142	66	10	218	81.30%	4.9	1073	
Pooled Nonresident		181	40	137	10	187	103.30%	3.3	625	
35 HORSE CREEK										
	Type 1	341	269	15	0	284	83.30%	4.9	1386	373
	Type 6	273	0	169	39	208	76.20%	5.3	1110	300
Pooled Total		545	269	184	39	492	90.30%	5.1	2496	
Pooled Resident		179	105	30	10	145	81.00%	5.7	828	
Pooled Nonresident		366	164	154	29	347	94.80%	4.8	1668	
36 BURNS										
	Type 1	200	134	12	0	146	73%	5	735	226
	Type 6	221	0	143	6	149	67.40%	4.9	732	250
Pooled Total		377	134	155	6	295	78.20%	5	1467	
Pooled Resident		209	104	42	0	146	69.90%	5.6	818	
Pooled Nonresident		168	30	113	6	149	88.70%	4.4	649	
2011 Hunt Area Total		1371	585	542	65	1192	86.90%	4.7	5661	1679
2011 Herd Total		1347	585	542	65	1192	88.50%	4.7	5661	1679

*Active Licenses

2006 - 2011 Harvest Age Structure

for Pronghorn Herd PR521 - HAWK SPRINGS

	Males										Females										Herd
Year	Juv	1	% 1 *	2	3 ^	% 3 **	Total Aged ++	Not Aged +++	Unk	Total Chkd	Juv	1	% 1 *	2	3 ^	% 3 **	Total Aged ++	Not Aged +++	Unk	Total Chkd	Total
2006	0	2	29%	3	2	29%	7	0	0	7	0	0	0%	1	2	67%	3	3	0	6	13
2007	0	0	0%	1	7	88%	8	0	1	9	0	1	100%	0	0	0%	1	0	0	1	10
2008	0	0	0%	11	3	21%	14	0	0	14	0	0	0%	3	1	25%	4	0	0	4	18
2009	0	0	0%	1	1	50%	2	4	0	6	0	0	0%	4	3	43%	7	1	2	10	16
2010	0	0	0%	0	3	100%	3	0	0	3	0	1	12%	2	3	50%	6	2	1	9	12
2011	1	3	18%	3	6	50%	13	5	0	18	0	1	25%	1	1	33%	3	1	1	5	23

* Percent of aged animals (including unaged adults but excluding juveniles) 1 1/2 years old

^ Number of animals three years old and older. Animals aged older than three (excluding unaged adults) are lumped into this three plus category

** Percent of aged animals (not including juveniles or unaged adults) three years old or older

++ includes juveniles

+++ Unaged adults - unaged animals older than yearlings

HAWK SPRINGS PRONGHORN
(A521)
HUNT AREAS 34, 35, 36
2012 HUNTING SEASONS

HUNT AREA	TYPE	OPENS	CLOSES	LIMITATIONS
34	1	OCT. 1	OCT. 14	L.Q.; 250 licenses any antelope
	6	OCT. 1	DEC. 31	L.Q.; 275 licenses doe or fawn
	7	NOV 1	DEC. 31	L.Q. 75 licenses doe or fawn
35	1	SEPT. 20	OCT. 14	L.Q.; 375 licenses any antelope
	6	SEPT. 20	DEC. 31	L.Q.; 300 licenses doe or fawn
	7	NOV. 1	DEC. 31	L.Q. 75 licenses doe or fawn
36	1	SEPT. 20	OCT. 14	L.Q.; ~~225~~ 175 licenses any antelope
	6	SEPT. 20	DEC. 31	L.Q. ~~250~~ 175 licenses doe or fawn
	7	NOV. 1	DEC. 31	50 Licenses doe or fawn
ARCHERY				
34		AUG 15	SEPT. 30	Refer to Section 3 of this Chapter
35,36		AUG 15	SEPT. 19	Refer to Section 3 of this Chapter

CHANGES FOR 2012

- Add 75 Type 7 licenses respectively to Hunt Areas 34 and 35
- Add 50 Type 7 licenses to Hunt Area 36
- Decrease Hunt Area 36 Type 1 licenses by 50
- Decrease Hunt Area 36 Type 6 licenses by 75
- Archery dates remain the same as the 2011 season

Hunt Area	License Type	Proposed Change	% Nonresident
34	Type 7	New License Type +75	63% Type 6
35	Type 7	New License Type +75	86% Type 6
36	Type 7	New License Type +50	72% Type 6
36	Type 1	Decrease Type 1 from 225 to 175 (-50)	
36	Type 6	Decrease Type 6 from 250 to 175 (-75)	

Management Evaluation

Population: Population simulations were anchored to the 2003 end-of-the year line transect point estimate bringing the 2011 post-season population to 10,000 pronghorn, 43% above the objective of 7,000 pronghorn. An end-of-the-year line

transect was completed in June of 2008. The survey was completed by adapting the Wyoming technique for single observer aircraft (Guenzel, 2007) using 5 distance bands. The survey resulted in a density estimate of 9.3 pronghorn per square mile for a population estimate of approximately 21,000 pronghorn. This is 1.9 times the population estimate that was simulated using observed data incorporated into the POP II model. Given the Hawk Springs Pronghorn herd is largely dependent on artificial forage (dryland crops and irrigated hay meadows) for a majority of their year round diet, coupled with poor fawn production (ten-year average = 48 fawns:100 does) along with contradicting harvest statistics it does not appear the population should be inflated to align with the 2007 line-transect density estimate.

The population was anchored to fawn ratios and adult male ratios. Yearling male ratios were not aligned due to lack of confidence in the survey assuming yearling bucks were not separately classified from adult pronghorn or were confused with doe pronghorn.

Model simulations seem to track observed data adequately. Increased harvest over the past 10 years coupled with poor recruitment indicates the population is starting to decrease towards the objective. However, access continues to decrease especially in Hunt Area 36 where Cheyenne and surrounding communities have increased with sub-division development and oil production.

The 2011 pre-season fawn ratio (46 fawns:100 does) was slightly lower than the five-year average of 49 fawn: 100 does. Fawn production should have increased during the spring of 2011 in response to above average precipitation. Most likely the winter of 2010/2011 was severe enough to negatively affect pregnant does.

The winter of 2011/12 produced below average snow production and average to above average temperatures, most likely resulting in below average winter mortality.

However, the spring of 2012 has seen the lowest amount of precipitation in recent years. Based on the Wyoming Climate Web page (www.wrds.uwyo.edu/sco/data/climate_Summary_2012Mar.html) Southeast Wyoming had 0” of precipitation in March. Also based on the same website the Laramie River Basin was 64% of normal as of March 2012. April, May and June were not available at the submission of this report, but based on anecdotal observations there was little precipitation recorded during those months when precipitation is critical for Southeast Wyoming’s vegetation production crucial for big game juvenile production and survival. The summer of 2012 has also experienced the highest amount of wildfire activity in recent history. At the time of this report there have been 4 wildfires that have burned an estimate of 88,500 acres.

The WGFD will change the way ungulate populations are estimated starting biological year 2012. POP II will be replaced by Spreadsheet Models that were developed by G. White and B. Lubow, of the Colorado Division of Wildlife. Based on input from T. Morrison of the Wyoming Cooperative Fish and Wildlife Research Unit, the Spreadsheet Model provides a more statistically rigorous way to estimate population sizes and to compare different models (Morrison, 2012).

2011 Season: The 2011 season was designed to take advantage of surplus bucks in Hunt Area 34 and reduce the population by increasing Hunt Area 34 Type 1 licenses by 25 and Hunt Areas 34 and 35 Type 6 licenses by 25 and 50 respectively. Harvest increased by 5% compared to the 2010 season. Male and juvenile harvest was similar to 2010, however female harvest increased by 24%.

2012 Season: The 2012 season is designed to continue reducing the population where there is access. Type 6 licenses will remain the same, but there will be a new Type 7 license. This additional doe/fawn license is intended to reduce the population by having a total of 200 licenses (75 licenses in Hunt Areas 34 and 35 and 50 licenses in Hunt Area 36) available from November 1 through December 31. The rational for this new license type is that the majority of the Type 6 licenses were sold to non residents (average of 73% for all three hunt areas). Non residents typically do not hunt after the first weekend, so there was little hunting pressure placed on the herd during November and December when landowners were experiencing damage to their agriculture fields. This license type will hopefully displace pronghorn and increase harvest on the herd unit. Based on previous years the proposed hunt structure should result in the harvest of 600 males, 715 females and 80 juveniles for a total harvest of 1,395 pronghorn. This amount of harvest will lower the population to 8,000 pronghorn which is 14% above the objective.

Literature Cited:

Guenzel, R.J. 2007. Procedures for Estimating Pronghorn Abundance In Wyoming Using Aerial Line Transect Sampling. Wyoming Game and Fish Department, Cheyenne. ____pp.

Morrison, T. 2012. User Guide: Spreadsheet Model for Ungulate Population Data, Wyoming Cooperative Fish and Wildlife Research Unit, 4.

Data Set: A5212012.GN1 02/29/2012 12:23 pm Page 1

HAWK SPRINGS PRONGHORN 521
Data from 1990 to 2012 Simulation from 2002 to 2012

Age Class	Init Pop. Male	Init Pop. Female	Presn Male	Mort% Female	Postsn Mort% Male	Postsn Mort% Female	Effort Set 1 Male	Effort Set 1 Female	Effort Set 2 Male	Effort Set 2 Female
0	40.0	40.0	50.0	50.0	30.0	30.0	1.00	1.00	1.00	1.00
1	8.4	21.2	5.0	2.0	5.0	4.0	1.45	1.00	0.00	1.00
2	6.7	16.9	5.0	2.0	7.0	4.0	1.00	1.00	1.00	1.00
3	5.4	13.5	5.0	2.0	7.0	4.0	1.00	1.00	1.00	1.00
4	4.3	10.8	5.0	2.0	7.0	4.0	1.00	1.00	1.00	1.00
5	3.4	8.7	5.0	2.0	7.0	4.0	1.00	1.00	1.00	1.00
6	2.7	6.9	5.0	2.0	50.0	10.0	1.00	1.00	1.00	1.00
7	2.2	5.5	5.0	2.0	75.0	20.0	1.00	1.00	1.00	1.00
8	1.8	4.4	5.0	2.0	100.0	30.0	1.00	1.00	1.00	1.00
9	1.4	3.6	5.0	2.0	100.0	40.0	1.00	0.90	1.00	1.00
10	1.1	2.8	5.0	2.0	100.0	50.0	1.00	0.90	1.00	1.00
11	0.9	2.3	5.0	2.0	100.0	60.0	1.00	0.90	1.00	1.00
12	0.7	1.8	5.0	2.0	100.0	75.0	1.00	1.00	1.00	1.00
13	0.6	1.5	5.0	2.0	100.0	100.0	1.00	1.00	1.00	1.00

Sum = 219.5 Estimated Sum = 12500 Subadults: Ages 0 to 0

Data Set: A5212012.GN1 02/29/2012 12:23 pm Page 2

Bio-Year	Preseason MSI	MSI Function is Linear Harvest // Des. Pop Size in NA Subadults#	Males#	Females#	Postseason MSI	Effort & Wound Set Used
1990	0.63	8	200	135	1.00	1
1991	1.19	15	248	84	1.00	1
1992	1.45	7	244	107	1.10	1
1993	1.40	11	270	160	2.00	1
1994	1.58	36	307	240	1.20	1
1995	1.61	17	315	65	1.00	1
1996	1.34	9	334	109	1.00	1
1997	1.59	45	459	186	0.75	1
1998	1.44	22	415	201	0.75	1
1999	1.57	30	465	227	0.75	1
2000	1.24	24	403	90	0.75	1
2001	0.90	3	350	15	0.75	1
2002	1.11	0	429	41	0.75	1
2003	1.36	16	417	89	0.75	1
2004	1.41	29	440	145	0.75	2
2005	1.34	29	412	195	0.80	2
2006	1.26	46	484	300	0.80	1
2007	1.41	81	464	359	0.20	1
2008	1.33	52	538	383	0.20	1
2009	1.44	95	556	417	1.80	1
2010	1.33	73	618	436	1.80	1
2011	1.43	65	585	542	1.80	1
2012	1.43	80	600	715	1.80	1

Set 1	Wounding Loss	10.%	10.%	10.%	Yearling Male 10.%
Set 2	Wounding Loss	0.%	0.%	0.%	Yearling Male 0.%

Bio-Year	Young/100 Fems Age 1 - 1	Young/100 Fems Age 2 - 13	Young/100 Fems Disabled	Sex Ratio: 50 : 50
1991	0.0	180.0	0.0	
1992	0.0	180.0	0.0	
1993	0.0	180.0	0.0	
1994	0.0	180.0	0.0	
1995	0.0	180.0	0.0	
1996	0.0	180.0	0.0	
1997	0.0	180.0	0.0	
1998	0.0	180.0	0.0	
1999	0.0	180.0	0.0	
2000	0.0	180.0	0.0	
2001	0.0	180.0	0.0	
2002	0.0	180.0	0.0	
2003	0.0	180.0	0.0	
2004	0.0	180.0	0.0	
2005	0.0	180.0	0.0	
2006	0.0	180.0	0.0	
2007	0.0	180.0	0.0	
2008	0.0	180.0	0.0	
2009	0.0	180.0	0.0	
2010	0.0	180.0	0.0	
2011	0.0	180.0	0.0	
2012	0.0	180.0	0.0	
2013	0.0	0.0	0.0	

POP-II (V1.2.9) Simulation Output Tables for A5212012.GN1, 02/29/2012 12:23 pm

Table 1. Population Size During Bio-Year for A5212012.GN1 02/29/2012 12:23 pm

Bio-Year	Start	Pre-Season	Post Season	End	%Growth
2002	12500	9720	9203	7818	33.9
2003	16741	10376	9802	8495	4.6
2004	17506	10812	10198	8996	6.1
2005	18566	11806	11170	9754	5.4
2006	19572	13023	12110	10552	5.5
2007	20649	13081	12087	11717	11.0
2008	22926	14995	13925	13450	11.8
2009	25632	16260	15085	10764	-15.9
2010	21565	13936	12697	9210	-14.8
2011	18381	11419	10107	7507	-16.4
2012	15365	9422	7887	5742	-62.6

Table 2. Preseason Natural Mortality for A5212012.GN1 02/29/2012 12:23 pm

Bio-Year	Sub-Adults	Adult Males	Adult Females	Total	% of Pop
2002	2528	125	126	2780	22.2
2003	6068	141	156	6365	38.0
2004	6353	168	172	6693	38.2
2005	6411	178	170	6759	36.4
2006	6185	196	167	6549	33.5
2007	7118	252	197	7567	36.6
2008	7454	275	202	7931	34.6
2009	8771	356	245	9372	36.6
2010	7183	266	180	7629	35.4
2011	6557	236	169	6962	37.9
2012	5619	183	142	5943	38.7

Table 3. Harvest Mortality for A5212012.GN1 02/29/2012 12:23 pm

Bio-Year	Sub-Adults	Adult Males	Adult Females	Total	% of Pop
2002	0	429	41	470	4.8
2003	16	417	89	522	5.0
2004	29	440	145	614	5.7
2005	29	412	195	636	5.4
2006	46	484	300	830	6.4
2007	81	464	359	904	6.9
2008	52	538	383	973	6.5
2009	95	556	417	1068	6.6
2010	73	618	436	1127	8.1
2011	65	585	542	1192	10.4
2012	80	600	715	1395	14.8

Table 4. Harvest Percentages for A5212012.GN1 02/29/2012 12:23 pm

Bio-Year	Sub-Adults	Adult Males	Adult Females	Total	Yearling Males
2002	0.0	20.1	0.7	4.84	28.1
2003	0.6	21.6	1.6	5.03	46.9
2004	1.1	19.8	2.4	5.68	0.0
2005	0.9	16.6	3.2	5.39	0.0
2006	1.3	16.6	4.6	6.37	47.3
2007	2.7	13.9	5.3	6.91	47.1
2008	1.4	14.0	5.2	6.49	41.5
2009	2.8	12.1	5.0	6.57	44.0
2010	2.0	16.5	6.6	8.09	25.4
2011	2.5	19.1	9.4	10.44	32.2
2012	3.6	25.3	14.9	14.81	30.1

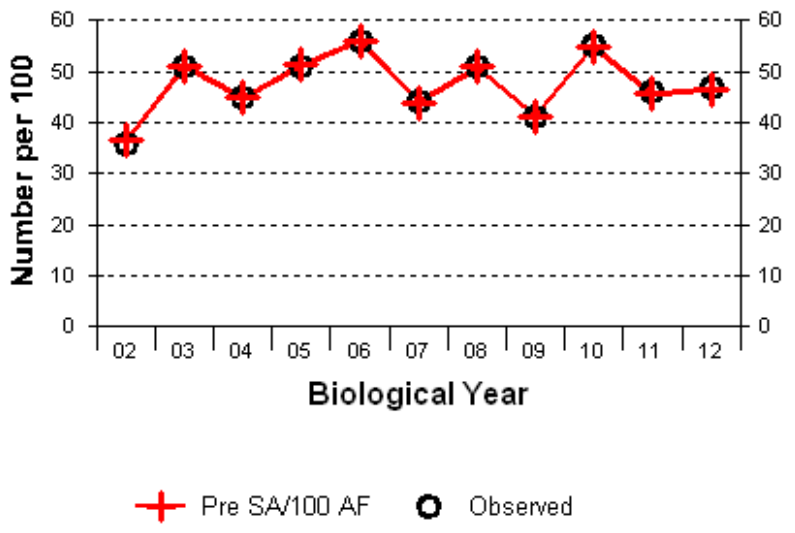
Table 5. Postseason Natural Mortality for A5212012.GN1 02/29/2012 12:23 pm

Bio-Year	Sub-Adults	Adult Males	Adult Females	Total	% of Pop
2002	456	369	560	1385	15.1
2003	639	186	483	1307	13.3
2004	592	138	472	1202	11.8
2005	751	149	516	1416	12.7
2006	860	163	536	1559	12.9
2007	173	45	152	370	3.1
2008	222	58	195	475	3.4
2009	1785	734	1801	4321	28.6
2010	1911	569	1007	3487	27.5
2011	1373	451	777	2601	25.7
2012	1162	355	629	2145	27.2

Table 6. Preseason Ratios for A5212012.GN1 02/29/2012 12:23 pm

Bio-Year	Subadults /100 1+F	2+ Males /100 1+F	Yr. Males /100 1+F	Ad Males /100 1+F
2002	36.4	30.2	8.1	38.3
2003	51.1	21.5	13.1	34.6
2004	44.8	20.2	17.2	37.4
2005	51.2	24.9	15.4	40.3
2006	56.1	27.8	17.2	45.0
2007	44.0	30.5	18.7	49.1
2008	50.9	35.1	17.2	52.2
2009	41.3	36.0	19.5	55.5
2010	55.0	46.0	10.8	56.8
2011	45.5	40.2	13.2	53.4
2012	46.6	38.1	11.3	49.3

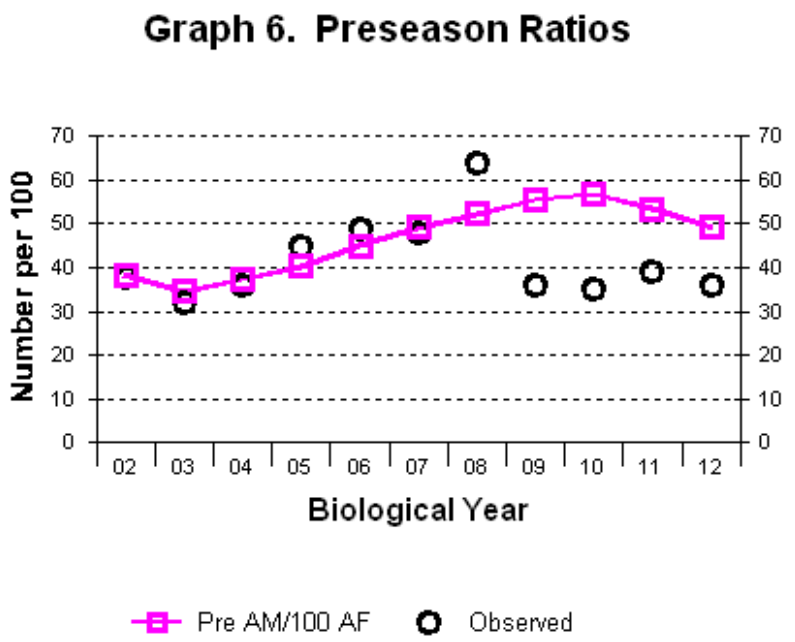
POP-II (V1.2.9) Graph 6. Preseason Ratios



A5212012.GN1, 02/29/2012 12:23 pm, Correlation (R) = 0.999, GOF = 0.994

YR	SIM	OBS
02	36	36
03	51	51
04	45	45
05	51	51
06	56	56
07	44	44
08	51	51
09	41	41
10	55	55
11	46	46
12	47	47
	AVERAGES	
of Col.	48	
of Pair	48	48

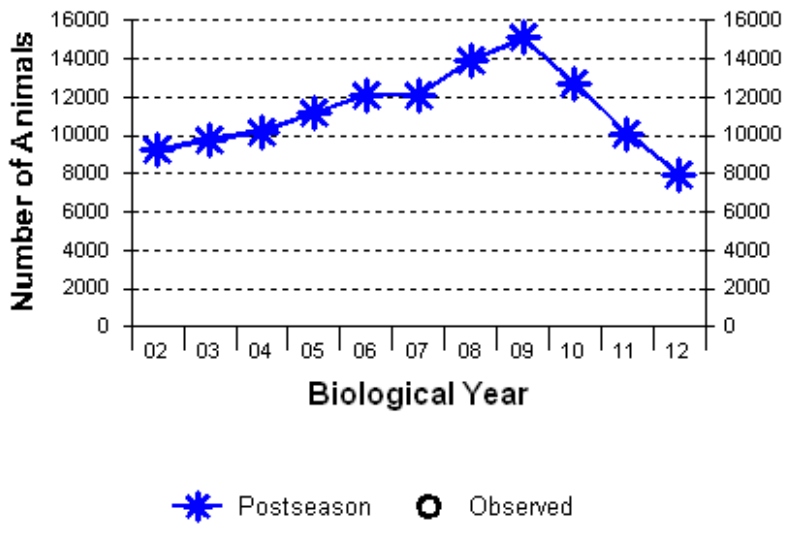
POP-II (V1.2.9) Graph 6. Preseason Ratios



A5212012.GN1, 02/29/2012 12:23 pm, Correlation (R) = 0.213, GOF = 0.726

YR	SIM	OBS
02	38	38
03	35	32
04	37	36
05	40	45
06	45	49
07	49	48
08	52	64
09	56	36
10	57	35
11	53	39
12	49	36
	AVERAGES	
of Col.	47	
of Pair	47	42

POP-II (V1.2.9) Graph 1. Population Size During Bio-Year

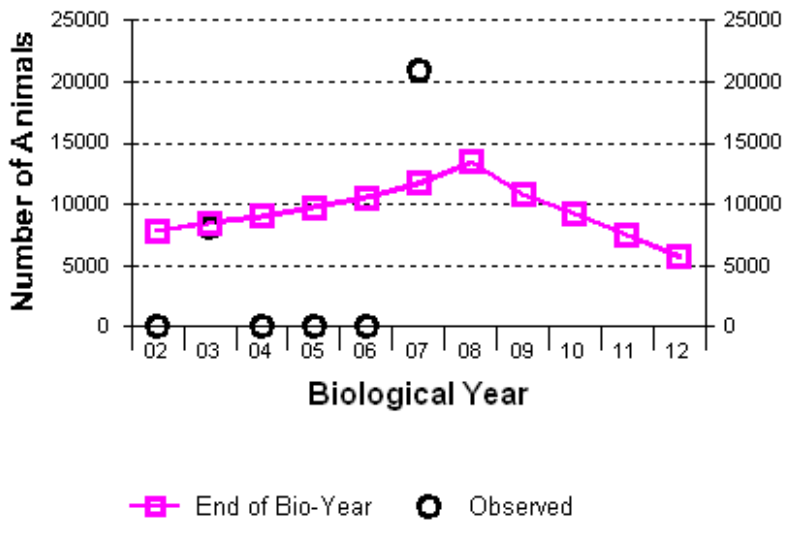


YR	SIM	OBS
02	9203	-----
03	9802	-----
04	10198	-----
05	11170	-----
06	12110	-----
07	12087	-----
08	13925	-----
09	15085	-----
10	12697	-----
11	10107	-----
12	7887	-----

AVERAGES

of Col.	11297	

POP-II (V1.2.9) Graph 1. Population Size During Bio-Year

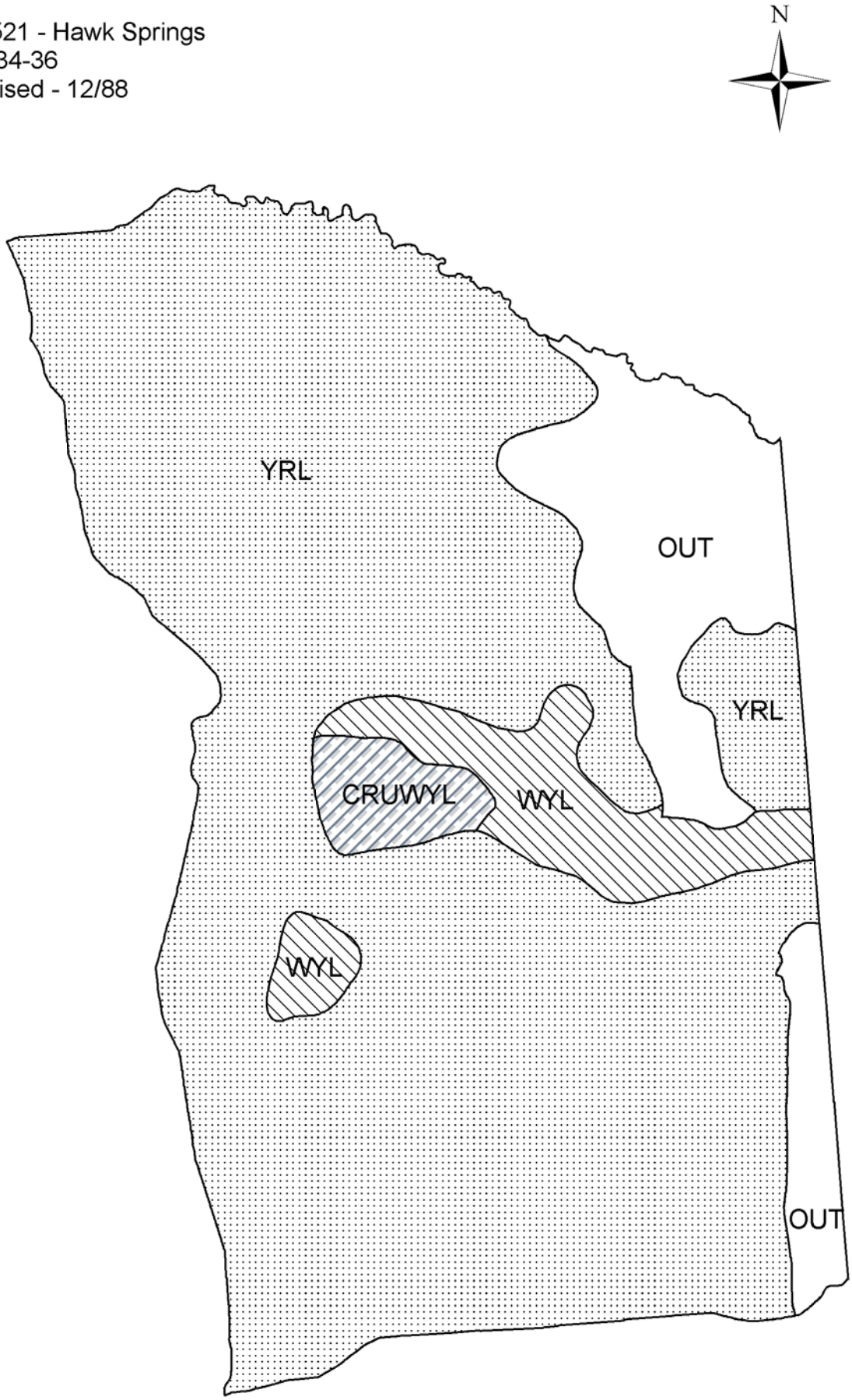


YR	SIM	OBS
02	7818	0
03	8495	8069
04	8996	0
05	9754	0
06	10552	0
07	11717	21000
08	13450	-----
09	10764	-----
10	9210	-----
11	7507	-----
12	5742	-----

AVERAGES

of Col.	9455	
of Pair	9555	4845

PH521 - Hawk Springs
HA 34-36
Revised - 12/88



2011 - JCR Evaluation Form

SPECIES: Pronghorn | PERIOD: 6/1/2011 - 5/31/2012

HERD: PR522 - MEADOWDALE

HUNT AREAS: 11-12 | PREPARED BY: MARTIN HICKS

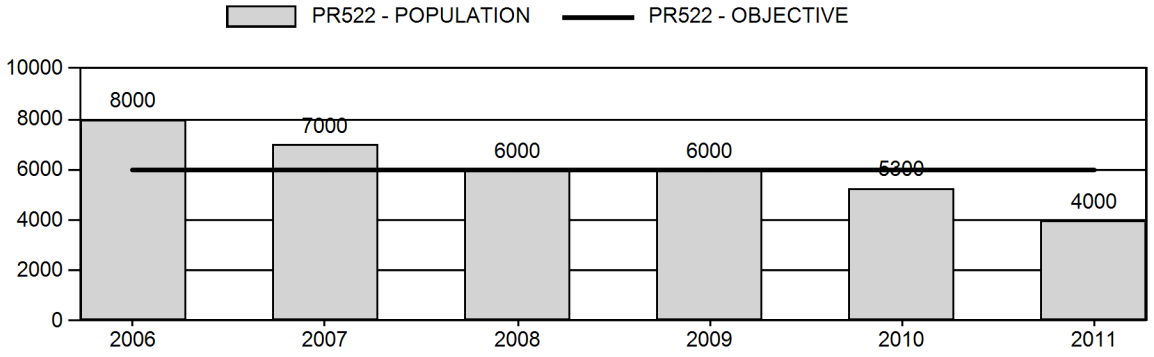
	2006 - 2010 Average	2011	2012 Proposed
Population:	6,460	4,000	3,500
Harvest:	730	518	430
Hunters:	751	518	440
Hunter Success:	97%	100%	98 %
Active Licenses:	855	592	480
Active License Percent:	85%	88%	90 %
Recreation Days:	2,499	1,398	1,150
Days Per Animal:	3.4	2.7	2.7
Males per 100 Females	42	28	
Juveniles per 100 Females	61	55	

Population Objective:	6,000
Management Strategy:	Recreational
Percent population is above (+) or below (-) objective:	-33.3%
Number of years population has been + or - objective in recent trend:	2
Model Date:	02/29/2012

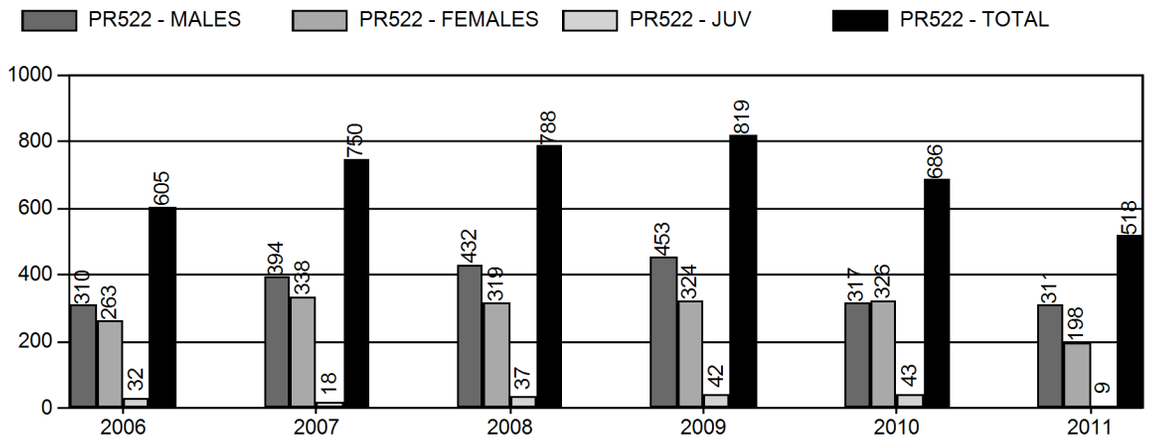
Proposed harvest rates (percent of pre-season estimate for each sex/age group):

	JCR Year	Proposed
Females ≥ 1 year old:	9.1%	8.4%
Males ≥ 1 year old:	28.6%	31.5%
Juveniles (< 1 year old):	.4%	.9%
Total:	11.4%	11.2%
Proposed change in post-season population:	-15%	-13%

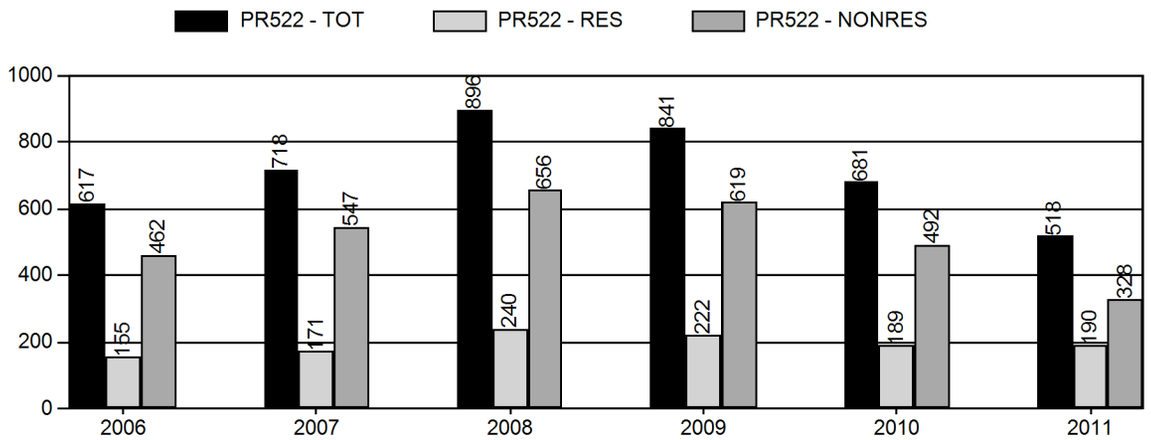
Population Size - Postseason



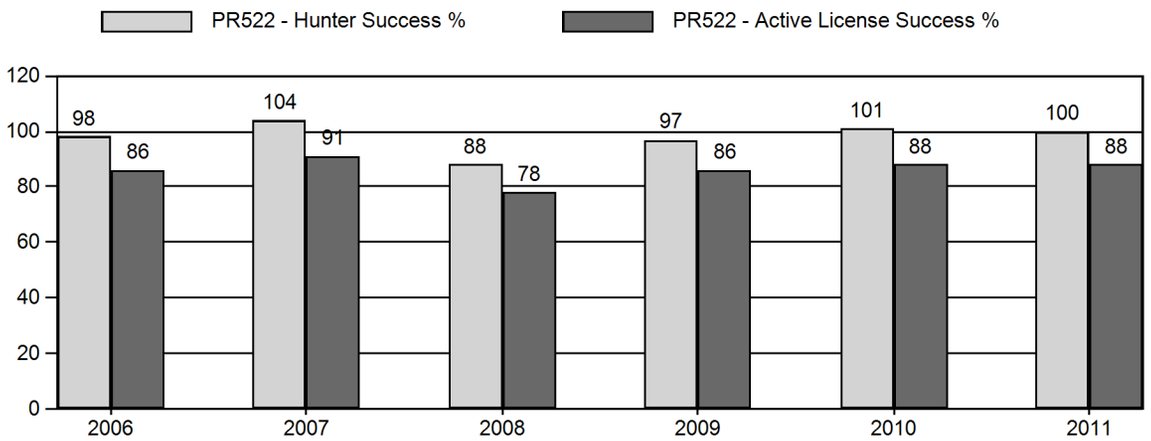
Harvest



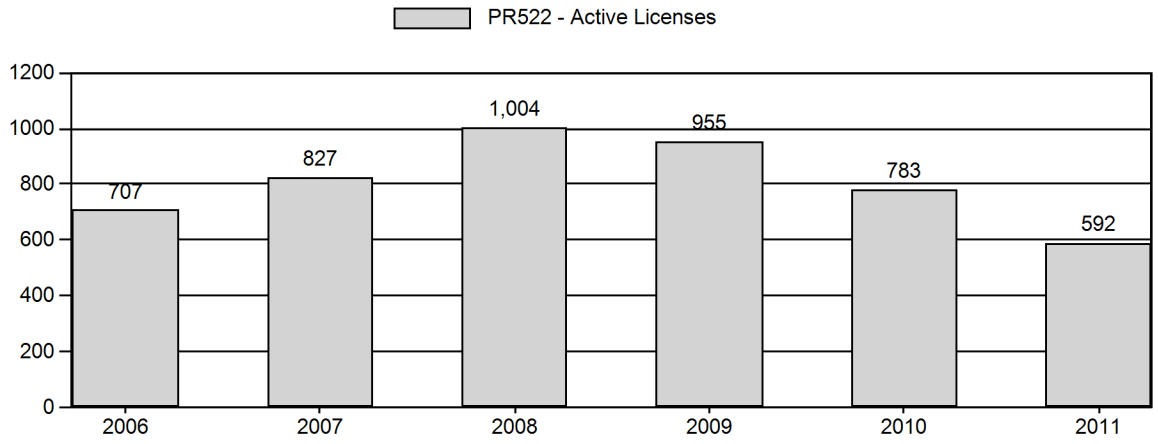
Number of Hunters



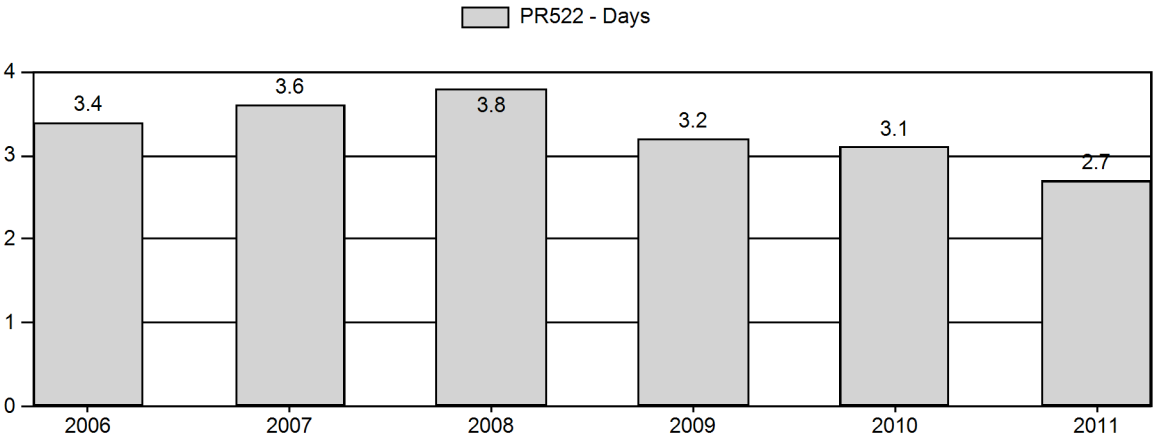
Harvest Success



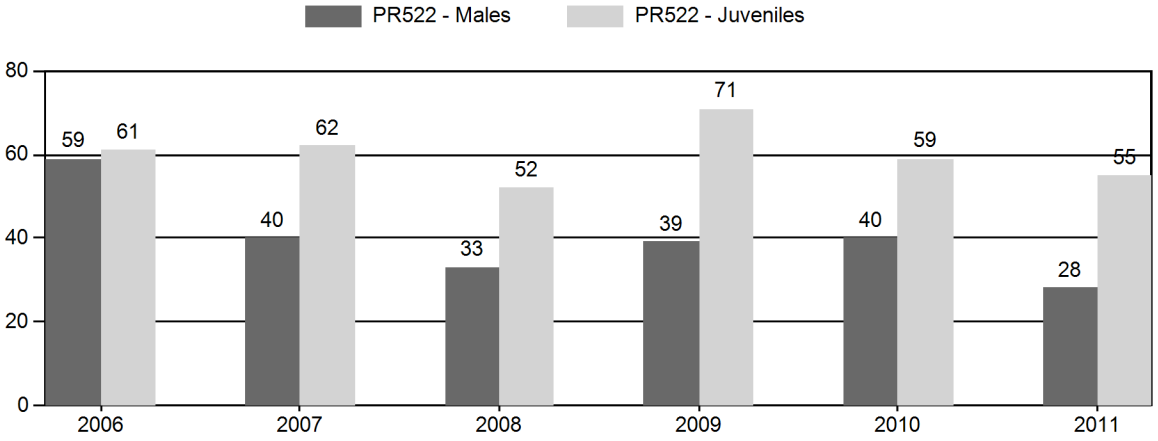
Active Licenses



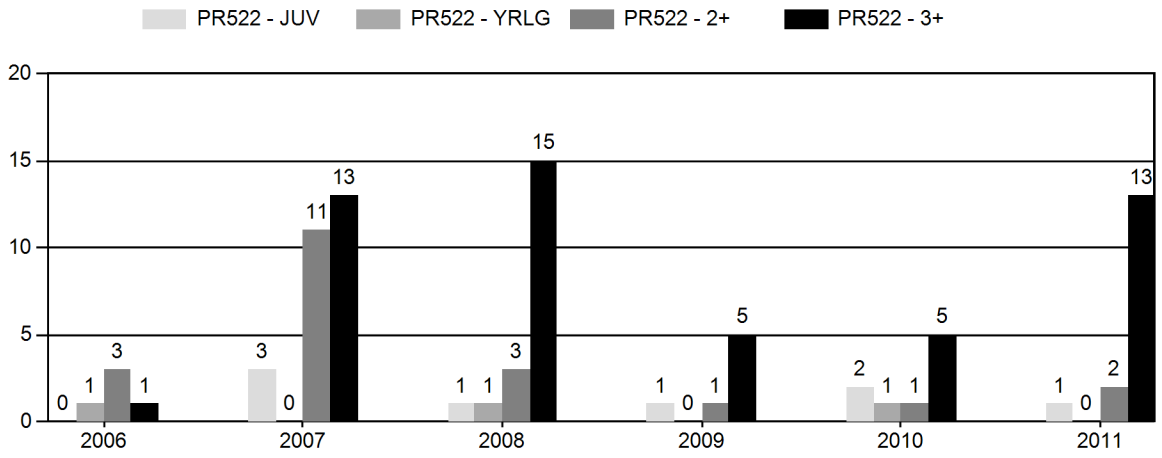
Days Per Animal Harvested



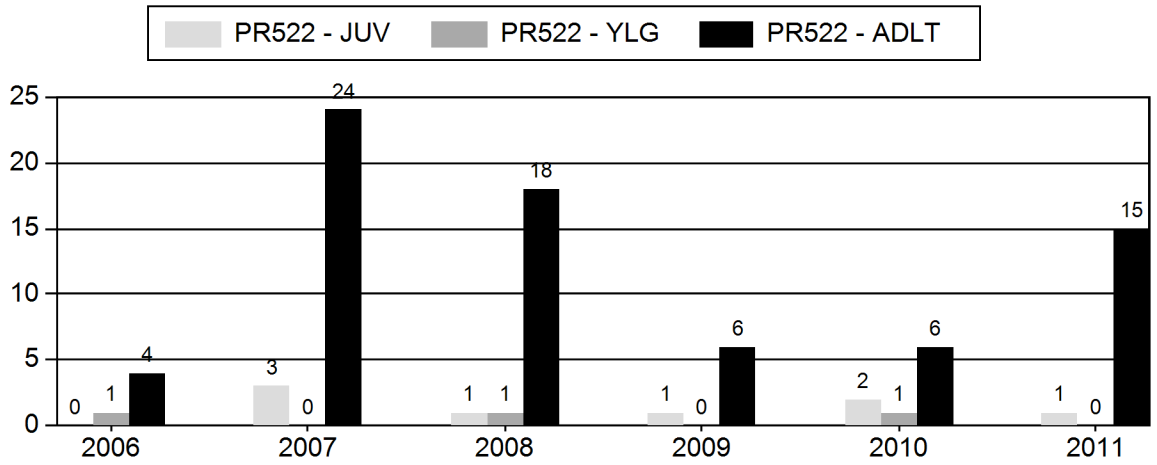
Preseason Animals per 100 Females



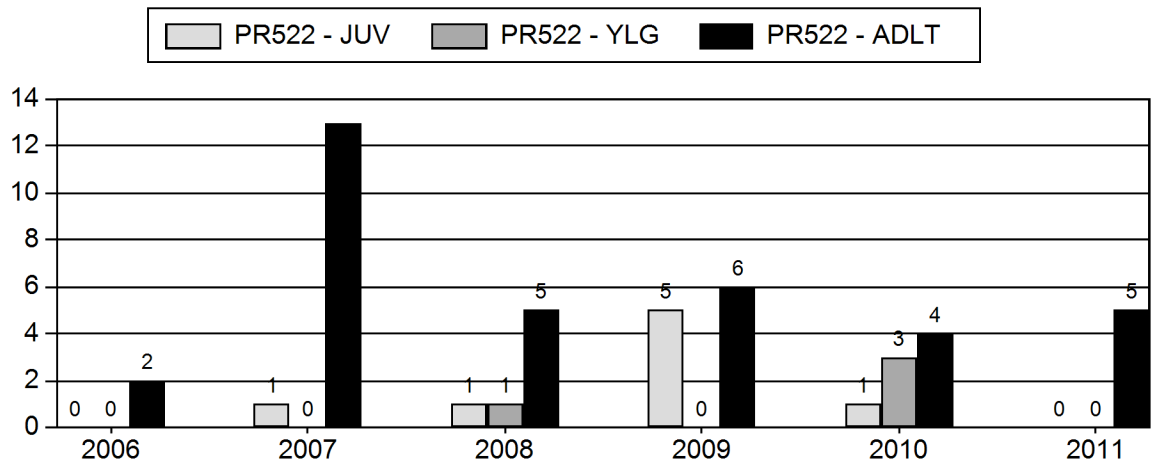
Age Structure of Field Checked Males



Age Structure Data (Field and Laboratory) - Male



Age Structure Data (Field and Laboratory) - Female



2006 - 2011 Preseason Classification Summary

for Pronghorn Herd PR522 - MEADOWDALE

		MALES				FEMALES		JUVENILES				Males to 100 Females				Young to		
Year	Pre Pop	Ylg	Adult	Total	%	Total	%	Total	%	Tot Cls	Cls Obj	Ylng	Adult	Total	Conf Int	100 Fem	Conf Int	100 Adult
2006	9,000	165	218	383	27%	648	45%	394	28%	1,425	1,222	25	34	59	± 4	61	± 5	38
2007	8,500	80	133	213	20%	533	50%	329	31%	1,075	1,000	15	25	40	± 0	62	± 0	44
2008	7,000	72	111	183	18%	562	54%	293	28%	1,038	1,544	13	20	33	± 4	52	± 6	39
2009	7,000	71	194	265	19%	684	48%	483	34%	1,432	1,744	10	28	39	± 4	71	± 6	51
2010	6,000	80	137	217	20%	543	50%	319	30%	1,079	1,404	15	25	40	± 0	59	± 0	42
2011	4,500	32	140	172	15%	612	55%	334	30%	1,118	1,426	5	23	28	± 3	55	± 5	43

2011 HUNTING SEASONS

PR522 - MEADOWDALE

Hunt Area	Add'l Hunt Areas	Type	Quota	Season Dates	Limitations
11	12	ARCH		08/15 - 09/30	Refer to Section 3 of this Chapter
11		Type 1	200	10/01 - 10/15	Any
11		Type 1	200	10/16 - 10/31	Unused Area 11 Type 1 licenses valid in that portion of Area 11 in Niobrara County
11		Type 6	150	10/01 - 10/15	Reduced Price doe/fawn
11		Type 6	150	10/16 - 10/31	Unused Area 11 Type 6 licenses valid in that portion of Area 11 in Niobrara County
12		Type 1	200	10/01 - 10/15	Any
12		Type 1	200	10/16 - 10/31	Unused Area 12 Type 1 licenses valid in that portion of Area 12 in Converse and Niobrara Counties
12		Type 6	100	10/01 - 10/15	Reduced Price doe/fawn
12		Type 6	100	10/16 - 10/31	Unused Area 12 Type 6 licenses valid in that portion of Area 12 in Converse and Niobrara counties

Table 1. PH522 Harvest Data, 2011.

Area	Type	Active Lic/*	Buck	Doe	Fawn	Total	Success	Days/Harve	Days	Licenses Sold
2011										
11 SOUTH LUSK										
	Type 1	184	154	14	0	168	91.30%	2.3	386	200
	Type 6	131	0	111	0	111	84.70%	2.5	280	149
Pooled Total		295	154	125	0	279	94.60%	2.4	666	
Pooled Resident		146	89	41	0	130	89.00%	2.2	289	
Pooled Nonresident		149	65	84	0	149	100%	2.5	377	
12 SOUTH KELINE										
	Type 1	182	157	0	4	161	88.50%	2.7	428	199
	Type 6	95	0	73	5	78	82.10%	3.9	304	100
Pooled Total		226	157	73	9	239	105.80%	3.1	732	
Pooled Resident		44	27	4	4	35	79.50%	4.7	164	
Pooled Nonresident		182	130	69	5	204	112.10%	2.8	568	
2011 Hunt Area Total		521	311	198	9	518	99.40%	2.7	1398	648
2011 Herd Total		518	311	198	9	518	100%	2.7	1398	648

*Active Licenses

2006 - 2011 Harvest Age Structure

for Pronghorn Herd PR522 - MEADOWDALE

	Males										Females										Herd
Year	Juv	1	% 1 *	2	3 ^	% 3 **	Total Aged ++	Not Aged +++	Unk	Total Chkd	Juv	1	% 1 *	2	3 ^	% 3 **	Total Aged ++	Not Aged +++	Unk	Total Chkd	Total
2006	0	1	20%	3	1	20%	5	0	0	5	0	0	0%	1	1	50%	2	0	0	2	7
2007	3	0	0%	11	13	54%	27	0	0	27	1	0	0%	12	1	8%	14	0	0	14	41
2008	1	1	5%	3	15	79%	20	0	2	22	1	1	17%	0	5	83%	7	0	3	10	32
2009	1	0	0%	1	5	83%	7	0	0	7	5	0	0%	2	4	67%	11	0	0	11	18
2010	2	1	14%	1	5	71%	9	0	0	9	1	3	43%	1	3	43%	8	0	0	8	17
2011	1	0	0%	2	9	82%	12	4	0	16	0	0	0%	2	2	50%	4	1	0	5	21

* Percent of aged animals (including unaged adults but excluding juveniles) 1 1/2 years old

^ Number of animals three years old and older. Animals aged older than three (excluding unaged adults) are lumped into this three plus category

** Percent of aged animals (not including juveniles or unaged adults) three years old or older

++ includes juveniles

+++ Unaged adults - unaged animals older than yearlings

MEADOWDALE PRONGHORN
(A522)
HUNT AREAS 11, 12
2012 HUNTING SEASONS

HUNT AREA	TYPE	OPENS	CLOSES	LIMITATIONS
11	1	OCT. 1 OCT. 16	OCT. 15 OCT. 31	L.Q.; ~~200~~ 150 licenses any antelope Unused Type 1 licenses valid in that portion of Area 11 in Niobrara County
	6	OCT. 1 OCT. 16	OCT. 15 OCT. 31	L.Q.; ~~150~~ 125 licenses doe or fawn Unused Area 11 Type 6 licenses valid in that portion of Area 11 in Niobrara County
12	1	OCT. 1 OCT. 16	OCT. 15 OCT. 31	L.Q.; ~~200~~ 150 licenses any antelope Unused Type 1 licenses valid in that portion of Area 12 in Converse and Niobrara County
	6	OCT. 1 OCT. 16	OCT. 15 OCT. 31	L.Q.; ~~100~~ 75 licenses doe or fawn Unused Area 12 Type 6 licenses valid in that portion of Area 12 in Converse and Niobrara County
ARCHERY				
11,12		AUG 15	SEPT. 30	Refer to Section 3 of this Chapter

Changes For 2012

- Decrease Area 11 Type 1 licenses from 200 to 150
- Decrease Area 11 Type 6 licenses from 150 to 125
- Decrease Area 12 Type 1 licenses from 200 to 150
- Decrease Area 12 Type 6 licenses from 100 to 75
- (There will be 1,250 Type 6 licenses valid for hunt areas 9, and those portions of 11 and 12 in Niobrara and Converse counties)

Hunt Area	License Type	Proposed Change	% Nonresident
11	1	- 50	42%
11	6	- 25	93%
12	1	- 50	71%
12	6	- 25	89%
Total		-150	

Management Evaluation

Population: The 2011 post-season population estimate was 4,000, putting the population 33% below the objective of 6,000. The population appears to have decreased as a result of increased harvest, below average fawn ratios and a decrease in adult male ratios. Previous season structures were designed to bring the population down and focus harvest on the northern portion of the herd unit where there are higher pronghorn densities.

Population simulations were anchored to juvenile and adult male ratios as well as the 2003 end-of-the-year line transect density estimate. Yearling male ratios were not aligned due to lack of confidence in the survey assuming yearling bucks were not separately classified from adult pronghorn or were confused with doe pronghorn.

The 2001 pre-season fawn ratios of 57 fawns: 100 does was slightly lower than the five-year average of 60 fawns: 100 does, which contributed to a decrease in population. Buck ratios in 2011 (32 bucks:100 does) also decreased compared to the five (35:100) and ten year (38:100) averages, also contributing to a decrease in the simulated population.

The winter of 2011/12 produced below average snow production and average to above average temperatures, most likely resulting in below average winter mortality.

However, the spring of 2012 has produced the lowest amount of precipitation in recent years. Based on the Wyoming Climate Web page (www.wrds.uwyo.edu/sco/data/climate_Summary_2012Mar.html) Southeast Wyoming had 0" of precipitation in March. Also based on the same website the Laramie River Basin was 64% of normal as of March 2012. Data for April, May and June were not available at the time of this report, but based on anecdotal observations there was little precipitation recorded during those months when the vegetative production is so crucial for juvenile production and survival. The summer of 2012 has also produced the highest amount of wildfire activity in recent history. At the time of this report there have been 5 wildfires that have burned an estimate of 117,500 acres.

The WGFD will change the way ungulate populations are estimated starting biological year 2012. POP II will be replaced by Spreadsheet Models that were developed by G. White and B. Lubow, of the Colorado Division of Wildlife. Based on input from T. Morrison of the Wyoming Cooperative Fish and Wildlife Research Unit, the Spreadsheet Model provides a more statistically rigorous way to estimate population sizes and to compare different models (Morrison, 2012).

2011 Season: The 2011 season was designed to decrease densities in the northern portion of the herd unit by having 1,250 Type 6 licenses valid in Hunt Area 9 and those portions of Hunt Areas 11 and 12 in Converse and Niobrara Counties where landowners continue to experience damage, while decreasing

the total Type 6 licenses for Hunt Areas 11 and 12 by 50 respectively since the population was 11% below the objective.

Doe/fawn harvest in 2011 decreased by 86% compared to 2010 harvest on Area 11 and 12 Type 6 licenses. Hunt Areas 9,11,12 Type 6 license harvest was 820 pronghorn in 2011. In 2010 the Hunt Area 9,11,12 Type 6 license was not available. Instead there were 400 Type 7 licenses that were valid in Hunt Area 9 and those portions of Hunt Areas 11 and 12 in Converse and Niobrara Counties. Harvest success was 88% with a total harvest of 253 doe/fawn pronghorn (only 324 licenses were active). Inferring doe/fawn harvest statistics by comparing 2010 Hunt Area 9,11,12 Type 7 licenses to 2011 Hunt Area 9,11,12 Type 6 licenses is difficult. Harvest most definitely increased from 2010 to 2011. However, harvest location is not possible to determine through the harvest survey due to the complex matter of breaking out hunt areas between herd units. However, landowners seem pleased with the license type and the ability to harvest does on both sides of U.S. Highway 18/20.

Buck harvest remained similar to 2010, but there are concerns with a decrease in ratios and a reduction in Type 1 licenses is scheduled for the 2012 season.

The 2011 season resulted in a total harvest of 518 pronghorn, which put the population at 4,000 pronghorn, 33% below the objective of 6,000 pronghorn.

2012 Season: The 2012 season is designed to try and stabilize the decreasing population trend, while still focusing harvest efforts in the northern third portion of the herd unit. A decrease in buck ratios and low fawn ratios have resulted in a decrease in population despite increased success and decreased effort.

There will be a decrease of 100 Type 1 licenses and 50 Type 6 licenses. The Hunt Area 9,11,12 Type 6 licenses (n=1,250) will be available for the 2012 season. This license type will again be valid in those portions of Hunt Areas 11 and 12 in Converse and Niobrara Counties. Given previous harvest statistics and average buck:100doe:fawn ratios, it is expected that the 2012 season will result in a harvest of 265 bucks, 155 does and 10 fawns for a total of harvest of 420 pronghorn, putting the 2012 post-hunt season population around 3,500 pronghorn. Further reductions in Type 6 licenses will be warranted in the future if the population continues to decline.

Literature Cited:

Guenzel, R.J. 2007. Procedures for Estimating Pronghorn Abundance In Wyoming Using Aerial Line Transect Sampling. Wyoming Game and Fish Department, Cheyenne. ____pp.

Morrison, T. 2012. User Guide: Spreadsheet Model for Ungulate Population Data, Wyoming Cooperative Fish and Wildlife Research Unit, 4.

Meadowdale Pronghorn Model (A522)
Data from 1986 to 2012 Simulation from 2002 to 2012

Age Class	Init Pop. Male	Prop. Female	Presn Male	Mort% Female	Postsn Mort% Male	Female	Effort Set 1 Male	Female	Effort Set 2 Male	Female
0	107.0	107.0	50.0	50.0	30.0	30.0	1.00	1.00	1.00	1.00
1	25.0	25.0	2.0	2.0	10.0	5.0	0.40	1.00	1.50	1.00
2	18.0	20.0	2.0	2.0	9.0	5.0	1.00	1.00	1.00	1.00
3	16.0	19.0	2.0	2.0	9.0	5.0	1.00	1.00	1.00	1.00
4	13.0	18.0	2.0	2.0	9.0	5.0	1.00	1.00	1.00	1.00
5	8.0	17.0	2.0	2.0	10.0	5.0	1.00	1.00	1.00	1.00
6	5.0	15.0	2.0	2.0	50.0	10.0	1.00	1.00	1.00	1.00
7	1.0	13.0	2.0	2.0	75.0	20.0	1.00	1.00	1.00	1.00
8	0.0	11.0	2.0	2.0	100.0	30.0	1.00	1.00	1.00	1.00
9	0.0	9.0	2.0	2.0	100.0	40.0	1.00	1.00	1.00	1.00
10	0.0	7.0	2.0	2.0	100.0	50.0	1.00	1.00	1.00	1.00
11	0.0	5.0	2.0	2.0	100.0	60.0	1.00	1.00	1.00	1.00
12	0.0	3.0	2.0	2.0	100.0	75.0	1.00	1.00	1.00	1.00
13	0.0	1.0	2.0	2.0	100.0	100.0	1.00	1.00	1.00	1.00

Sum = 463.0 Estimated Sum = 13000 Subadults: Ages 0 to 0

Bio-Year	Preseason MSI	MSI Function is Linear Harvest // Des. Pop Size in NA Subadults#	Males#	Females#	Postseason MSI	Effort & Wound Set Used
1986	0.96	71	437	381	1.00	1
1987	0.93	31	274	152	1.00	1
1988	1.00	52	386	237	1.00	1
1989	1.00	72	401	355	1.00	1
1990	0.97	71	407	371	1.00	1
1991	1.02	90	532	501	1.00	1
1992	1.05	95	612	755	1.30	1
1993	1.43	26	436	311	1.00	1
1994	1.29	51	417	317	0.75	1
1995	1.29	32	396	184	0.80	1
1996	0.94	9	423	157	0.80	1
1997	1.30	33	422	198	1.30	1
1998	1.21	18	373	133	1.20	1
1999	1.09	24	405	70	1.17	1
2000	1.17	6	416	99	1.17	2
2001	1.09	14	359	159	1.20	2
2002	1.30	21	313	140	1.30	2
2003	1.14	32	290	160	1.20	2
2004	1.14	26	291	129	1.00	2
2005	1.18	25	295	140	1.00	2
2006	1.20	32	310	261	2.00	2
2007	1.23	35	360	310	2.00	2
2008	1.35	37	432	319	1.50	2
2009	1.09	42	453	324	1.50	2
2010	1.20	43	317	326	1.70	2
2011	1.26	5	311	198	1.80	2
2012	1.21	10	265	155	1.60	1

Set 1	Wounding Loss	10.%	10.%	10.%	Yearling Male 10.%
Set 2	Wounding Loss	0.%	0.%	0.%	Yearling Male 0.%

Bio-Year	Young/100 Fems Age 1 - 1	Young/100 Fems Age 2 - 13	Young/100 Fems Disabled	Sex Ratio: 50 : 50
1987	0.0	180.0	0.0	
1988	0.0	180.0	0.0	
1989	0.0	180.0	0.0	
1990	0.0	180.0	0.0	
1991	0.0	180.0	0.0	
1992	0.0	180.0	0.0	
1993	0.0	180.0	0.0	
1994	0.0	180.0	0.0	
1995	0.0	180.0	0.0	
1996	0.0	180.0	0.0	
1997	0.0	180.0	0.0	
1998	0.0	180.0	0.0	
1999	0.0	180.0	0.0	
2000	0.0	180.0	0.0	
2001	0.0	180.0	0.0	
2002	0.0	180.0	0.0	
2003	0.0	180.0	0.0	
2004	0.0	180.0	0.0	
2005	0.0	180.0	0.0	
2006	0.0	180.0	0.0	
2007	0.0	180.0	0.0	
2008	0.0	180.0	0.0	
2009	0.0	180.0	0.0	
2010	0.0	180.0	0.0	
2011	0.0	180.0	0.0	
2012	0.0	180.0	0.0	
2013	0.0	0.0	0.0	

Table 1. Population Size During Bio-Year for A522 2012 ten year.GN1 02/29/2012 11:07 am

Bio-Year	Start	Pre-Season	Post Season	End	%Growth
2002	13000	8913	8439	6416	-3.0
2003	12609	8933	8451	6601	-1.3
2004	12446	8964	8518	7012	5.9
2005	13174	9373	8913	7344	4.9
2006	13818	9758	9155	6051	-14.3
2007	11848	8134	7429	5043	-15.9
2008	9965	6507	5719	4393	-12.4
2009	8726	6269	5450	3994	-10.8
2010	7782	5414	4728	3344	-13.8
2011	6704	4503	3989	2756	-15.7
2012	5650	3832	3359	2431	-57.0

Table 2. Preseason Natural Mortality for A522 2012 ten year.GN1 02/29/2012 11:07 am

Bio-Year	Sub-Adults	Adult Males	Adult Females	Total	% of Pop
2002	3906	63	119	4087	31.4
2003	3530	53	93	3676	29.2
2004	3331	57	93	3482	28.0
2005	3636	64	101	3801	28.9
2006	3884	69	107	4061	29.4
2007	3565	57	92	3714	31.3
2008	3322	50	86	3458	34.7
2009	2362	34	62	2457	28.2
2010	2272	33	63	2368	30.4
2011	2117	28	56	2201	32.8
2012	1751	21	46	1818	32.2

Table 3. Harvest Mortality for A522 2012 ten year.GN1 02/29/2012 11:07 am

Bio-Year	Sub-Adults	Adult Males	Adult Females	Total	% of Pop
2002	21	313	140	474	5.3
2003	32	290	160	482	5.4
2004	26	291	129	446	5.0
2005	25	295	140	460	4.9
2006	32	310	261	603	6.2
2007	35	360	310	705	8.7
2008	37	432	319	788	12.1
2009	42	453	324	819	13.1
2010	43	317	326	686	12.7
2011	5	311	198	514	11.4
2012	10	265	155	430	11.2

Table 4. Harvest Percentages for A522 2012 ten year.GN1 02/29/2012 11:07 am

Bio-Year	Sub-Adults	Adult Males	Adult Females	Total	Yearling Males
2002	1.0	13.3	3.1	5.32	38.1
2003	1.2	12.7	4.0	5.40	35.8
2004	1.0	11.9	3.2	4.98	43.0
2005	1.0	11.1	3.3	4.91	41.4
2006	1.2	11.1	6.0	6.18	39.7
2007	1.6	15.9	8.5	8.67	29.8
2008	2.3	23.7	10.3	12.11	31.5
2009	2.1	29.8	11.7	13.07	36.4
2010	2.8	23.9	12.7	12.67	49.0
2011	0.4	28.6	9.1	11.41	41.7
2012	0.9	31.5	8.4	11.22	16.5

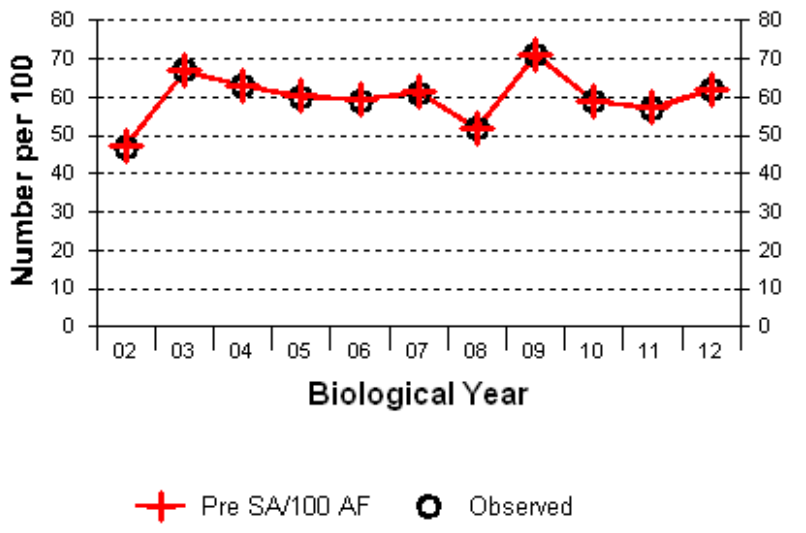
Table 5. Postseason Natural Mortality for A522 2012 ten year.GN1 02/29/2012 11:07 am

Bio-Year	Sub-Adults	Adult Males	Adult Females	Total	% of Pop
2002	812	334	877	2023	24.0
2003	947	326	576	1849	21.9
2004	746	317	443	1506	17.7
2005	750	362	456	1568	17.6
2006	1535	686	883	3104	33.9
2007	1318	472	596	2386	32.1
2008	703	261	362	1326	23.2
2009	868	240	347	1455	26.7
2010	751	254	379	1384	29.3
2011	669	199	366	1233	30.9
2012	543	106	279	929	27.6

Table 6. Preseason Ratios for A522 2012 ten year.GN1 02/29/2012 11:07 am

Bio-Year	Subadults /100 1+F	2+ Males /100 1+F	Yr. Males /100 1+F	Ad Males /100 1+F
2002	47.2	37.4	15.3	52.8
2003	66.9	41.8	15.6	57.4
2004	62.9	40.9	20.6	61.5
2005	60.3	43.0	20.3	63.3
2006	59.3	44.7	19.6	64.2
2007	61.3	48.4	13.7	62.1
2008	51.8	45.1	13.8	58.9
2009	71.0	39.7	15.1	54.8
2010	58.9	31.5	20.1	51.6
2011	57.3	33.9	16.2	50.1
2012	61.9	30.6	15.0	45.6

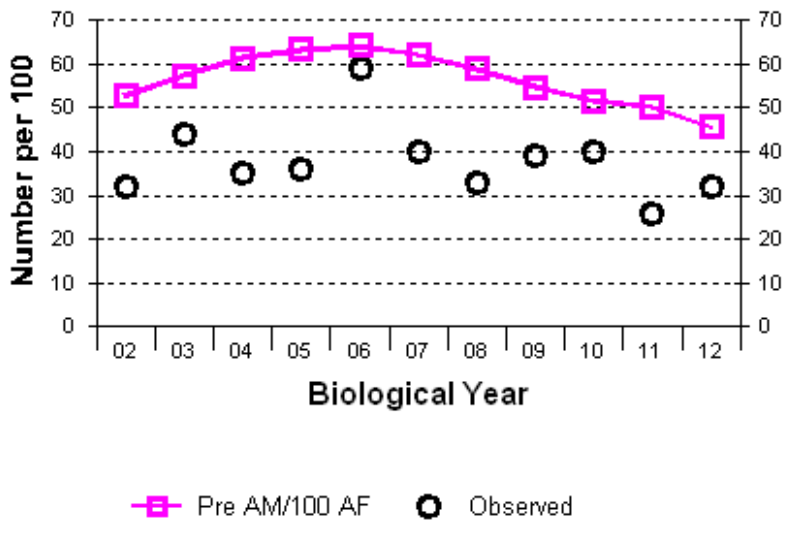
POP-II (V1.2.9) Graph 6. Preseason Ratios



522 2012 ten year.GN1, 02/29/2012 11:07 am, Correlation (R) = 1, GOF = 0.997

YR	SIM	OBS
02	47	47
03	67	67
04	63	63
05	60	60
06	59	59
07	61	61
08	52	52
09	71	71
10	59	59
11	57	57
12	62	62
	AVERAGES	
of Col.	60	
of Pair	60	60

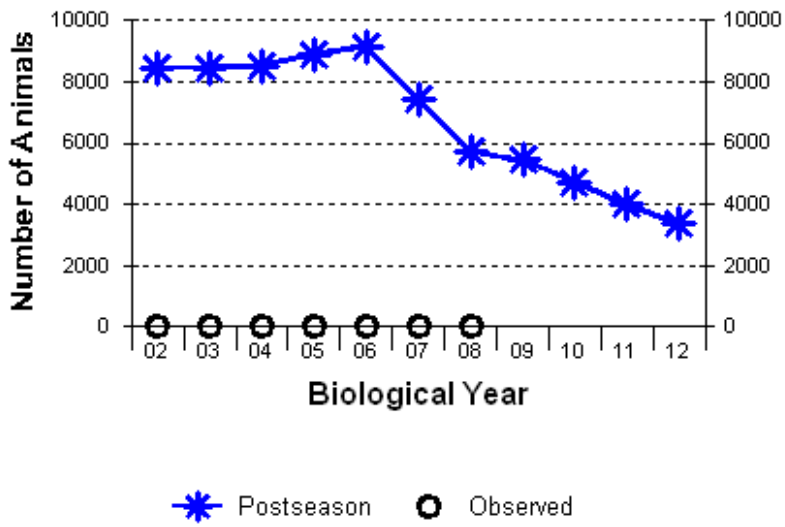
POP-II (V1.2.9) Graph 6. Preseason Ratios



2012 ten year.GN1, 02/29/2012 11:07 am, Correlation (R) = 0.558, GOF = 0.471

YR	SIM	OBS
02	53	32
03	57	44
04	61	35
05	63	36
06	64	59
07	62	40
08	59	33
09	55	39
10	52	40
11	50	26
12	46	32
	AVERAGES	
of Col.	57	
of Pair	57	38

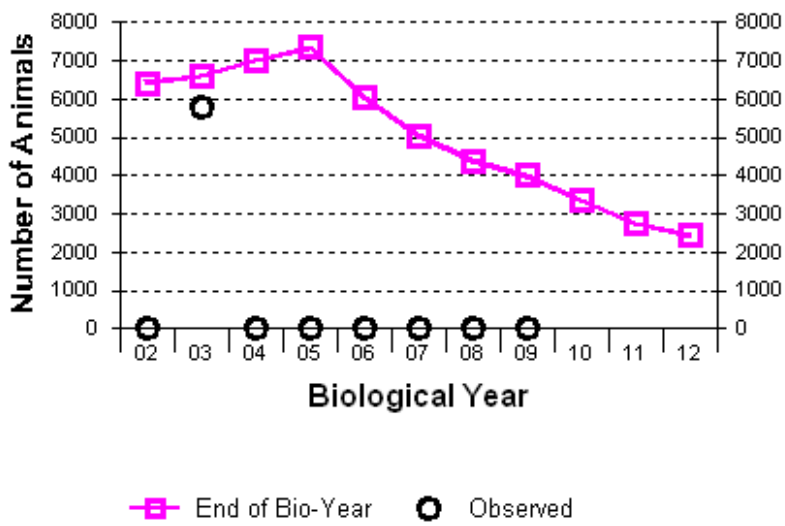
POP-II (V1.2.9) Graph 1. Population Size During Bio-Year



A522 2012 ten year.GN1, 02/29/2012 11:07 am

YR	SIM	OBS
02	8439	0
03	8451	0
04	8518	0
05	8913	0
06	9155	0
07	7429	0
08	5719	0
09	5450	-----
10	4728	-----
11	3989	-----
12	3359	-----
	AVERAGES	
of Col.	6741	
of Pair	8089	0

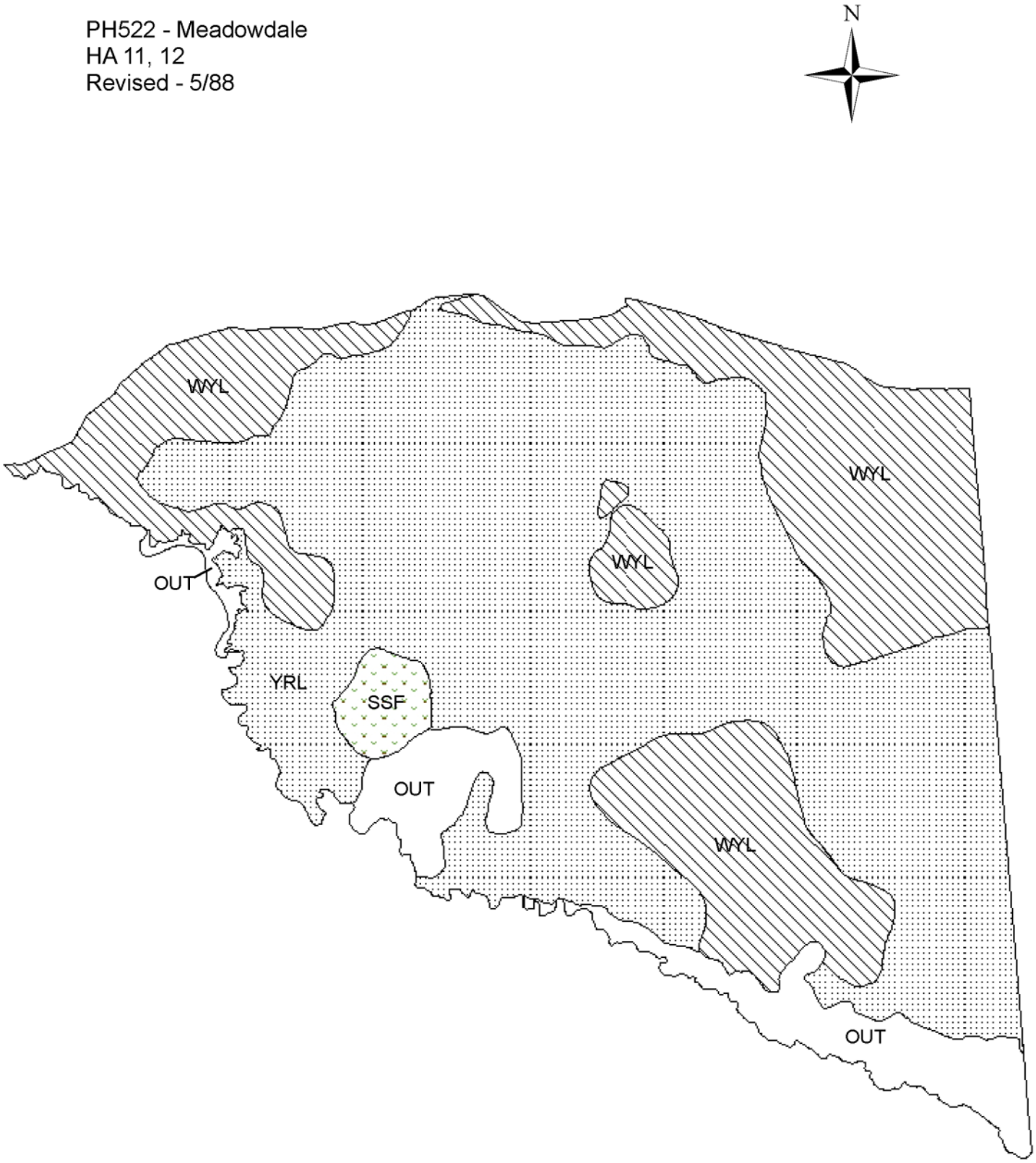
POP-II (V1.2.9) Graph 1. Population Size During Bio-Year



!012 ten year.GN1, 02/29/2012 11:07 am, Correlation (R) = 0.243, GOF = -6.596

YR	SIM	OBS
02	6416	0
03	6601	5795
04	7012	0
05	7344	0
06	6051	0
07	5043	0
08	4393	0
09	3994	0
10	3344	-----
11	2756	-----
12	2431	-----
	AVERAGES	
of Col.	5035	
of Pair	5857	724

PH522 - Meadowdale
HA 11, 12
Revised - 5/88



2011 - JCR Evaluation Form

SPECIES: Pronghorn | PERIOD: 6/1/2011 - 5/31/2012

HERD: PR523 - IRON MOUNTAIN

HUNT AREAS: 38-40, 104 | PREPARED BY: LEE KNOX

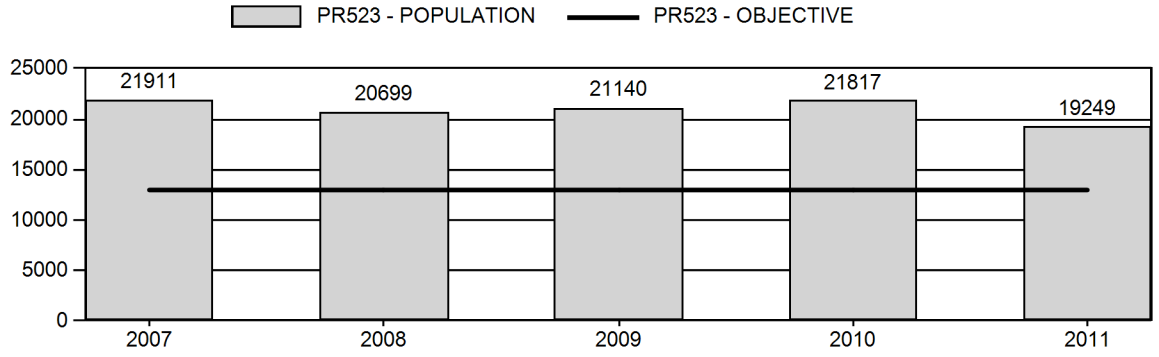
	2006 - 2010 Average	2011	2012 Proposed
Population:	21,950	19,249	19,717
Harvest:	1,628	1,650	1,700
Hunters:	1,720	1,737	1,800
Hunter Success:	95%	95%	94 %
Active Licenses:	1,970	2,006	2,002
Active License Percent:	83%	82%	85%
Recreation Days:	5,767	6,432	6,370
Days Per Animal:	3.5	3.9	3.7
Males per 100 Females	50	41	
Juveniles per 100 Females	61	42	

Population Objective:	13,000
Management Strategy:	Recreational
Percent population is above (+) or below (-) objective:	48%
Number of years population has been + or - objective in recent trend:	11
Model Date:	2/22/2012

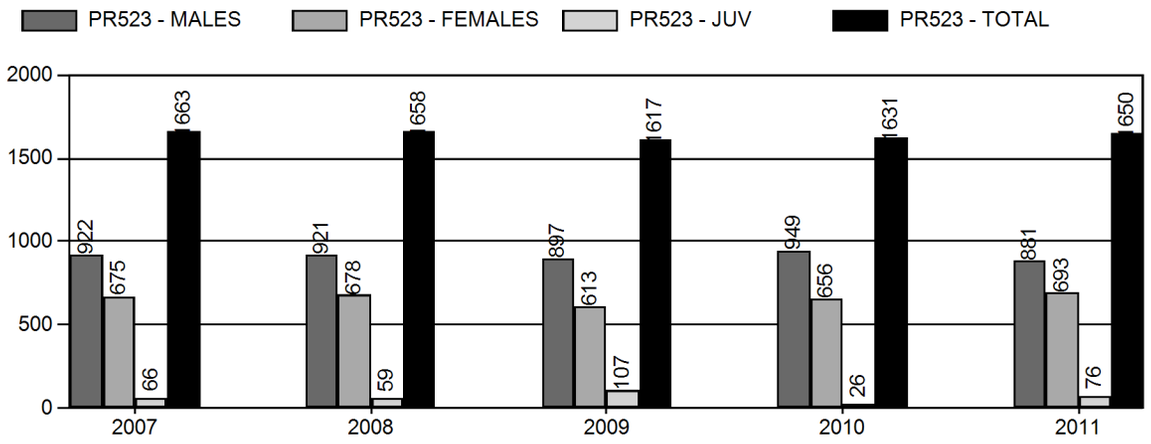
Proposed harvest rates (percent of pre-season estimate for each sex/age group):

	JCR Year	Proposed
Females ≥ 1 year old:	6.4%	6.5%
Males ≥ 1 year old:	16.5%	15.4%
Juveniles (< 1 year old):	0.4%	1.7%
Total:	7.08%	7.89%
Proposed change in post-season population:	3.4%	2.0%

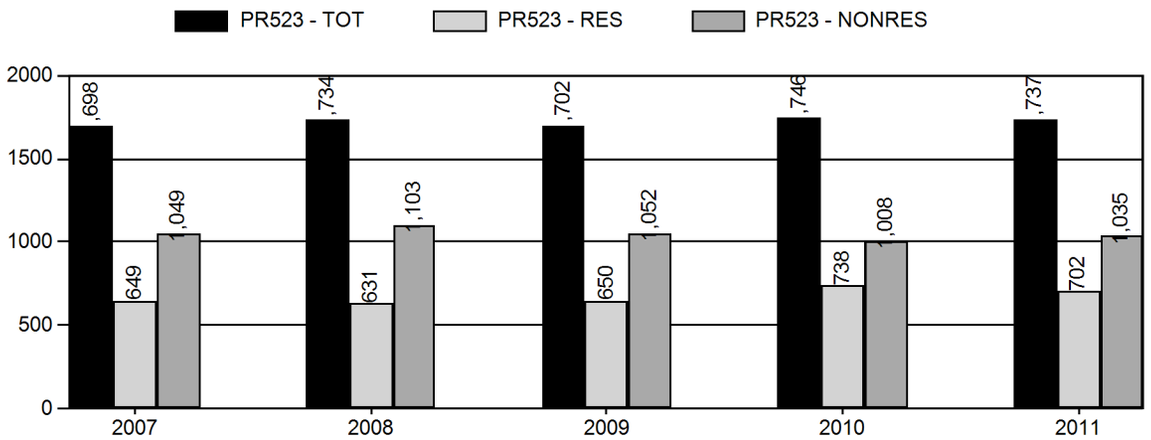
Population Size - Postseason



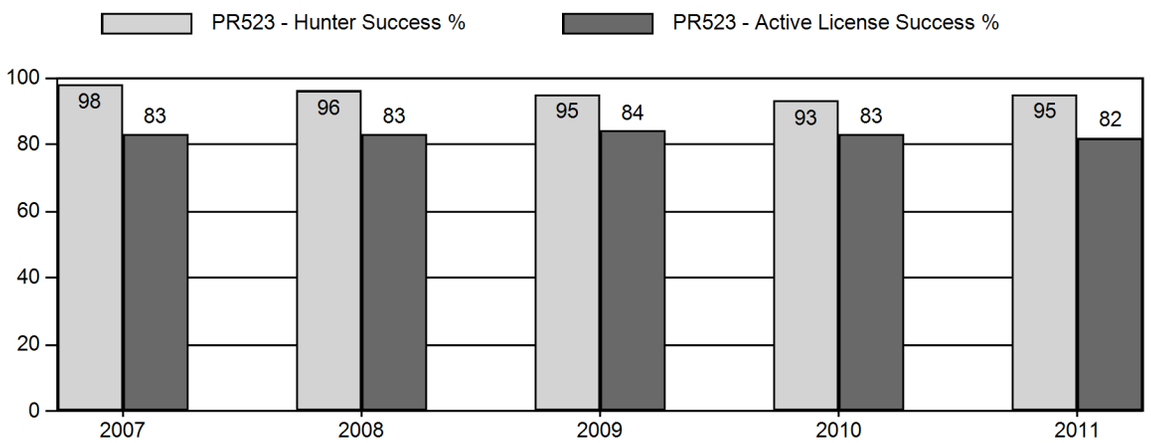
Harvest



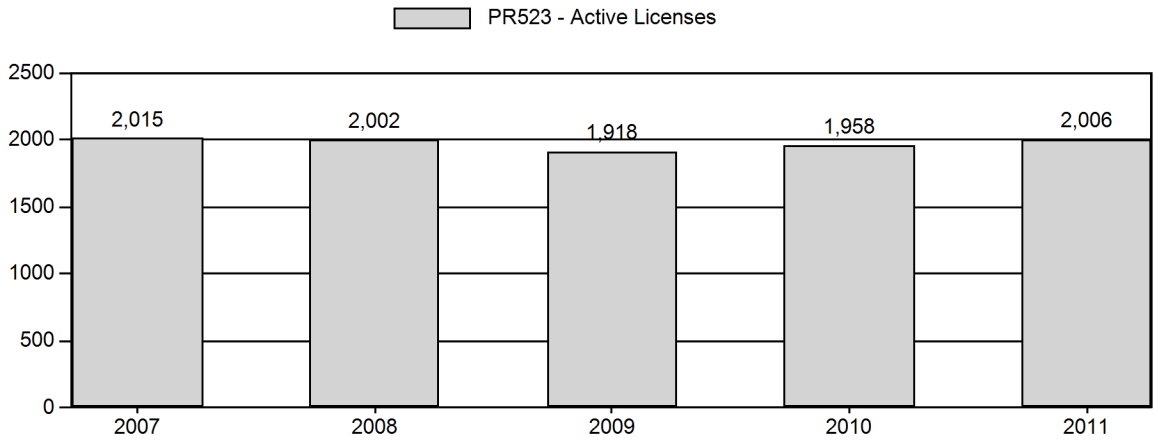
Number of Hunters



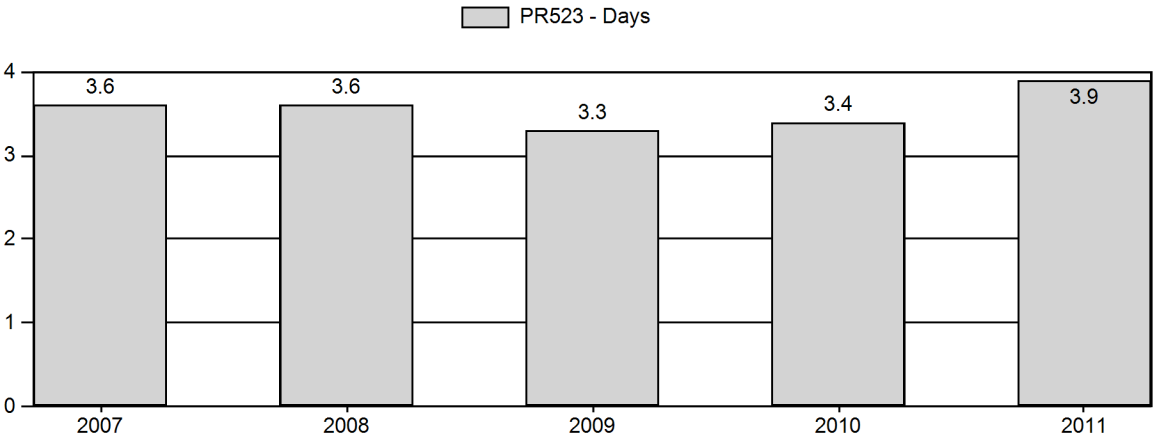
Harvest Success



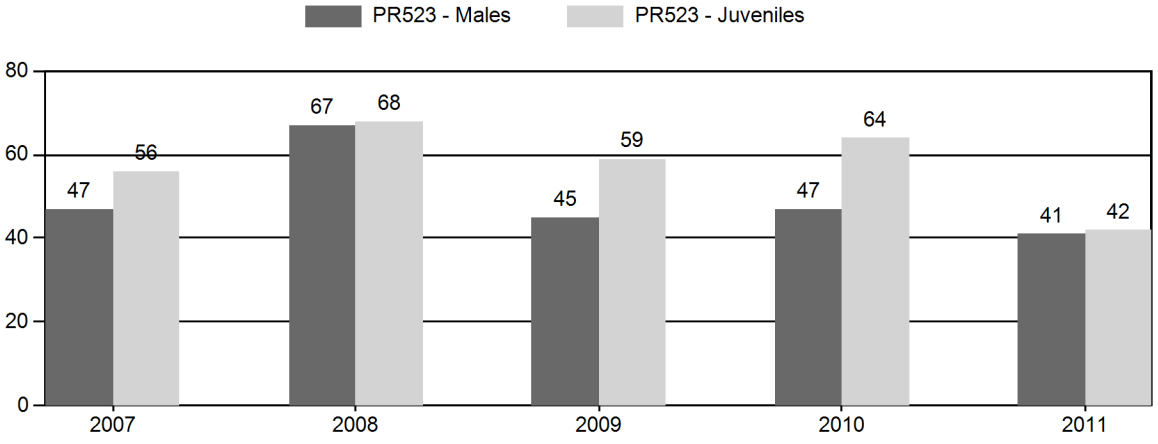
Active Licenses



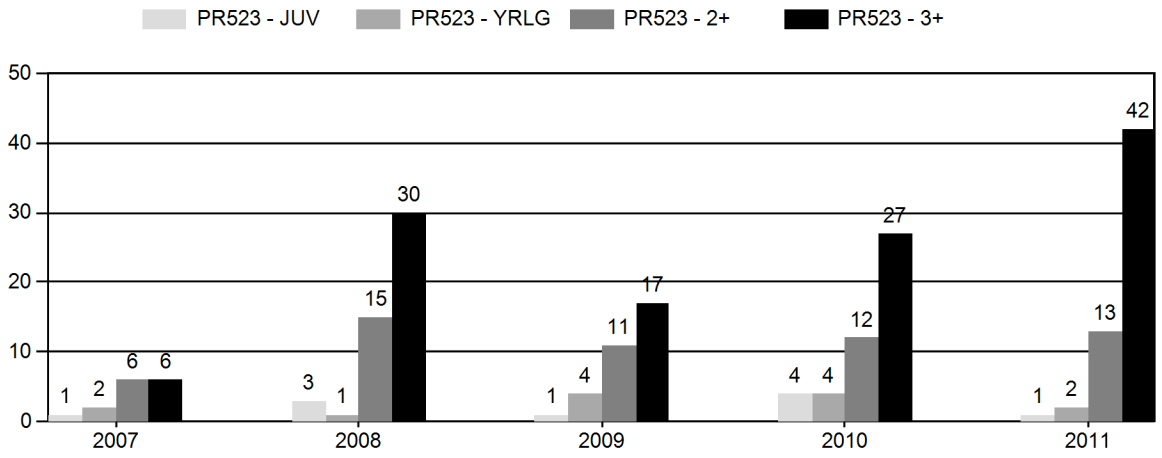
Days Per Animal Harvested



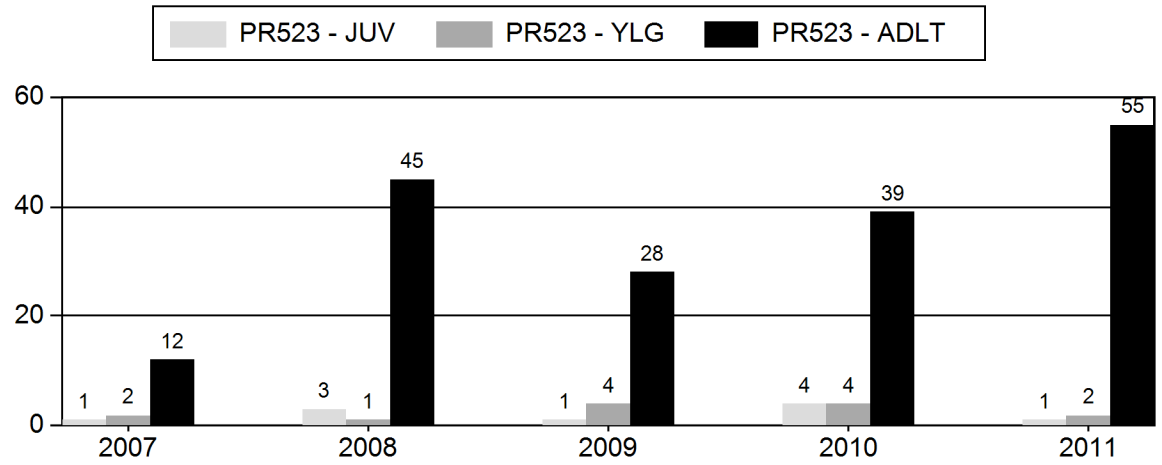
Preseason Animals per 100 Females



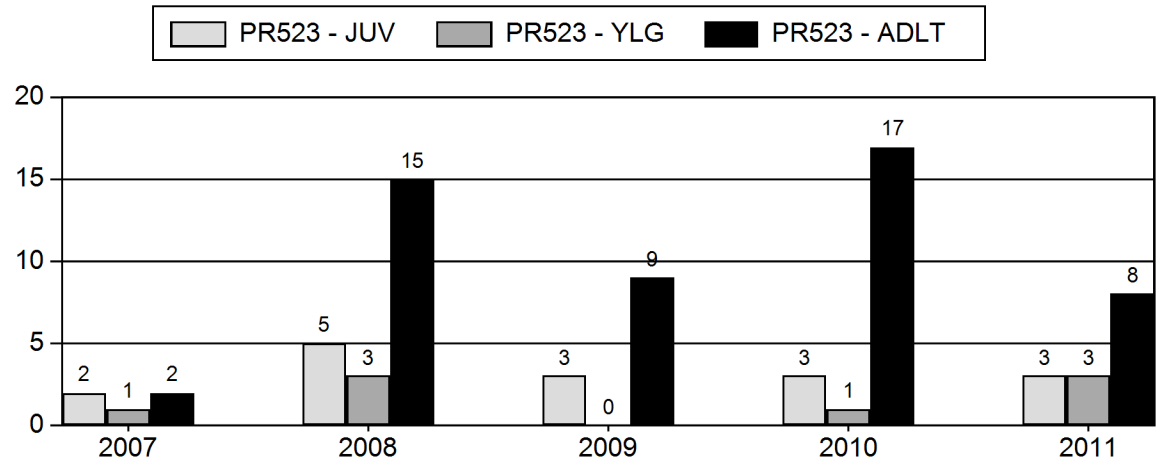
Age Structure of Field Checked Males



Age Structure Data (Field and Laboratory) - Male



Age Structure Data (Field and Laboratory) - Female



2007 - 2011 Preseason Classification Summary

for Pronghorn Herd PR523 - IRON MOUNTAIN

		MALES				FEMALES		JUVENILES				Males to 100 Females				Young to		
Year	Pre Pop	Ylg	Adult	Total	%	Total	%	Total	%	Tot Cls	Cls Obj	Ylng	Adult	Total	Conf Int	100 Fem	Conf Int	100 Adult
2007	23,743	127	266	393	23%	830	49%	464	28%	1,687	1,774	15	32	47	± 5	56	± 5	38
2008	22,530	136	249	542	28%	815	43%	556	29%	1,913	2,140	17	31	67	± 6	68	± 6	41
2009	22,920	160	259	419	22%	931	49%	550	29%	1,900	1,899	17	28	45	± 0	59	± 0	41
2010	23,611	182	370	552	22%	1,186	48%	755	30%	2,493	2,176	15	31	47	± 0	64	± 0	43
2011	21,080	51	89	140	23%	339	55%	141	23%	620	0	15	26	41	± 7	42	± 7	29

2011 HUNTING SEASONS

PR523 - IRON MOUNTAIN

Hunt Area	Add'l Hunt Areas	Type	Quota	Season Dates	Limitations
38	39,40	ARCH		08/15 - 10/05	Refer to Section 3 of this Chapter
38		Type 1	550	10/05 - 10/31	Any
38		Type 6	600	10/05 - 10/31	Reduced Price doe/fawn
38		Type 6	600	11/01 - 12/31	Reduced Price doe/fawn
39		Type 1	300	10/05 - 10/31	Any
39		Type 6	100	10/05 - 10/31	Reduced Price doe/fawn
40		Type 1	200	10/05 - 10/31	Any
40		Type 6	150	10/05 - 10/31	Reduced Price doe/fawn
104		ARCH		08/15 - 10/20	Refer to Section 3 of this Chapter
104		Type 1	200	10/20 - 11/15	Any
104		Type 6	175	10/20 - 11/15	Reduced Price doe/fawn
104		Type 6	175	11/16 - 12/31	Reduced Price doe/fawn

Area	Type	Active Lic/ Htrs	Buck	Doe	Fawn	Total	Success	Days/ Harvest	Days	Licenses Sold
2011										
38 LITTLE BEAR CREEK										
	Type 1	468	397	17	0	414	88.50%	3.2	1340	547
	Type 6	550	0	409	25	434	78.90%	4.1	1780	600
Pooled Total		942 (1018)*	397	426	25	848	90.00% (83.3%)*	3.7	3120	
Pooled Resident		339	143	151	0	294	86.70%	3.9	1150	
Pooled Nonresident		603	254	275	25	554	91.90%	3.6	1970	
39 BLUEGRASS										
	Type 1	278	228	10	0	238	85.60%	3.8	914	300
	Type 6	82	0	63	6	69	84.10%	4.8	330	99
Pooled Total		331 (360)*	228	73	6	307	92.70% (85.3%)*	4.1	1244	
Pooled Resident		158	101	29	0	130	82.30%	5.2	672	
Pooled Nonresident		173	127	44	6	177	102.30%	3.2	572	
40 EAST LARAMIE										
	Type 1	188	170	0	6	176	93.60%	2.6	460	200
	Type 6	123	0	72	19	91	74.00%	5.6	513	150
Pooled Total		245 (311)*	170	72	25	267	109.00% (85.9%)*	3.6	973	
Pooled Resident		71	64	10	0	74	104.20%	4.1	303	
Pooled Nonresident		174	106	62	25	193	110.90%	3.5	670	
104 CROW CREEK										
	Type 1	154	86	17	3	106	68.80%	5.7	603	201
	Type 6	163	0	105	17	122	74.80%	4	492	175
Pooled Total		220 (317)*	86	122	20	228	103.60% (71.9%)*	4.8	1095	
Pooled Resident		133	36	57	11	104	78.20%	7.1	739	
Pooled Nonresident		87	50	65	9	124	142.50%	2.9	356	
2011 Hunt Area Total		1738 (2006)*	881	693	76	1650	94.90% (82.3%)*	3.9	6432	2272
2011 Herd Total		1737 (2006)*	881	693	76	1650	95.00% (82.3%)*	3.9	6432	2272

*Active Licenses

2007 - 2011 Harvest Age Structure

for Pronghorn Herd PR523 - IRON MOUNTAIN

	Males										Females										Herd
Year	Juv	1	% 1 *	2	3 ^	% 3 **	Total Aged ++	Not Aged +++	Unk	Total Chkd	Juv	1	% 1 *	2	3 ^	% 3 **	Total Aged ++	Not Aged +++	Unk	Total Chkd	Total
2007	1	2	14%	6	5	38%	14	1	0	15	2	1	33%	1	0	0%	4	1	0	5	20
2008	3	1	2%	15	29	64%	48	1	2	51	5	3	17%	4	10	59%	22	1	1	24	75
2009	1	4	12%	11	2	12%	18	15	2	35	3	0	0%	0	2	100%	5	7	2	14	49
2010	4	4	9%	12	9	36%	29	18	0	47	3	1	6%	3	2	33%	9	12	0	21	68
2011	1	2	4%	13	30	67%	46	12	4	62	3	3	27%	0	6	67%	12	2	0	14	76

* Percent of aged animals (including unaged adults but excluding juveniles) 1 1/2 years old

^ Number of animals three years old and older. Animals aged older than three (excluding unaged adults) are lumped into this three plus category

** Percent of aged animals (not including juveniles or unaged adults) three years old or older

++ includes juveniles

+++ Unaged adults - unaged animals older than yearlings

IRON MOUNTAIN PRONGHORN
(PR523)
Hunt Areas 38, 39, 40, 104
Proposed 2012 Hunting Seasons

Hunt Area	Type	Dates of Opens	Season Closes	Limitations
38	1	Oct. 5	Oct. 31	Limited Quota; 550 licenses, any antelope
	6	Oct. 5	Oct. 31	Limited Quota; 600 licenses, doe or fawn
		Nov. 1	Dec. 31	Unused Area 38 Type 1 and Type 6 licenses valid in that portion of Area 38 north of the Horse Creek-Iron Mountain Road (Laramie County Road 106-2, Platte County Road 10, Wyoming Highway 211)
	7	Nov. 1	Dec. 31	Limited Quota; 100 licenses, doe or fawn valid in that portion of Area 38 North of the Horse Creek - Iron Mountain Road (Laramie County Road 106-2 –Platte County Road 10 – Wyoming Highway 211)
39	1	Oct. 5	Oct. 31	Limited Quota; 300 licenses, any antelope
	6	Oct. 5	Oct. 31	Limited Quota; 100 licenses, doe or fawn
40	1	Oct. 5	Oct. 31	Limited Quota; 200 licenses, any antelope
	6	Oct. 5	Oct. 31	Limited Quota; 150 licenses, doe or fawn
104	1	Oct. 20	Nov. 15	Limited Quota; 200 licenses, any antelope
	6	Oct. 20	Nov. 15	Limited Quota; 175 licenses, doe or fawn
		~~Nov. 16~~	~~Dec. 31~~	~~Unused Area 104 Type 6 Licenses valid in that portion of Area 104 off national forest~~
Archery 38,39,40,104		Aug. 15		Refer to Section 3 of this Chapter

SUMMARY OF PROPOSED CHANGES IN LICENSE NUMBER

Area	Type	Change from 2010
38	1	0
	6	0
	7	+100
39	1	0

	6	0
40	1 6	0 0
104	1 6	0 0
Herd Totals	**1 6 7**	**0 0 +100**

Changes for 2012

- Add Area 38 type 7, 100 licenses.
- Eliminate later season for Area 104 Type 6

Management Evaluation:

The Iron Mountain Pronghorn Herd is managed under recreational guidelines. Management for a population objective in the Iron Mountain Pronghorn Herd is difficult due to limited access to much of the area and too much pressure on accessible lands. Access limitations hinder our ability to reduce this herd toward objective. Efforts to increase harvest in accessible areas have resulted in reduced success and decreased hunt quality. Hunt Area 38 has received the greatest pressure due to access and the willingness of landowners to reduce the herd. A large portion of the population lives in the western part of the herd within Hunt Area 39 where access is highly restricted. A further complication is large segments of the population must migrate from the Laramie Basin through the Laramie Range to reach lower elevation winter ranges on the Wheatland flats where these pronghorn cause damage on private lands after the regular hunting season. The Area 38 type 6 was not addressing these concerns due to many nonresidents purchasing these licenses and only hunting with them during the regular season. Adding an Area 38 Type 7 valid only during the late season should increase harvest on that segment of the population as well as help address damage on some agricultural lands. Area 104 has had an increase in hunter effort as well as lost hunter access. Decreasing both Type 1 and Type 6 licenses by 25 each should alleviate these concerns. Season lengths in Hunt area 104 were lengthened in the past to address dry land crop damages. Today there are very little dry land crops and no damage, so we propose removing the late season hunt due to a lack of necessity or hunter interest. Assessing the status of this herd has been a challenge because pronghorn occupy habitats interspersed within some rugged portions of the Laramie Range that are difficult to survey. There have been questions about the reliability of some estimates and herd simulations.

<u>Population:</u> The postseason population estimate of 19,249 exceeds the population objective of 13,000. This herd receives lower management effort because of the lack of access to obtain desired harvests. Fawn:Doe ratios have declined the last 3 years and were at a 5 year low at 41:100 in 2011. Buck:doe ratios over the past 5 years have been relatively stable but in 2011 declined to 42:100 does. We predict the herd will increase slightly in 2012 with normal conditions.

Harvest: The 2011 season resulted in a harvest of 1,650 pronghorn with an overall success rate of 82%. Doe and fawn harvests have been substantially increased since the 2004 season and make up almost 50% of the harvest. We are approaching the upper threshold for hunter density, access and harvest in Areas 38 and 40 and current landowner attitudes do not favor placing more hunters in Areas 39 and 104.

Data Set: PR523_10.GN1 02/24/2012 09:55 am Page 1

Iron Mountain Pronghorn - 2011 Season Setting
Data from 1990 to 2012 Simulation from 1990 to 2012

Age Class	Init Pop. Male	Init Pop. Female	Prop. Presn Male	Prop. Presn Female	Mort% Male	Mort% Female	Postsn Mort% Male	Postsn Mort% Female	Effort Set 1 Male	Effort Set 1 Female	Effort Set 2 Male	Effort Set 2 Female
0	98.0	98.0	50.0	50.0	35.0	35.0	1.00	1.00	1.00	1.00		
1	25.0	25.0	2.0	2.0	10.0	3.0	1.00	1.00	1.00	1.00		
2	15.0	23.0	2.0	2.0	10.0	3.0	1.00	1.00	1.00	1.00		
3	10.0	21.0	2.0	2.0	10.0	3.0	1.00	1.00	3.00	1.00		
4	8.0	19.0	2.0	2.0	10.0	3.0	1.00	1.00	1.00	1.00		
5	5.0	17.0	2.0	2.0	10.0	3.0	1.00	1.00	1.00	1.00		
6	3.0	15.0	2.0	2.0	50.0	5.0	1.00	1.00	1.00	1.00		
7	1.0	13.0	2.0	2.0	75.0	10.0	1.00	1.00	1.00	1.00		
8	0.0	11.0	2.0	2.0	100.0	20.0	1.00	1.00	1.00	1.00		
9	0.0	9.0	2.0	2.0	100.0	30.0	1.00	1.00	1.00	1.00		
10	0.0	7.0	2.0	2.0	100.0	40.0	1.00	1.00	1.00	1.00		
11	0.0	5.0	2.0	2.0	100.0	50.0	1.00	1.00	1.00	1.00		
12	0.0	3.0	2.0	2.0	100.0	75.0	1.00	1.00	1.00	1.00		
13	0.0	1.0	2.0	2.0	100.0	100.0	1.00	1.00	1.00	1.00		

Sum = 432.0 Estimated Sum = 34000 Subadults: Ages 0 to 0

Data Set: PR523_10.GN1 02/24/2012 09:55 am Page 2

MSI Function is Linear

Bio-Year	Preseason MSI	Harvest // Subadults#	Des. Pop Size in NA Males#	Des. Pop Size in NA Females#	Postseason MSI	Effort & Wound Set Used
1990	1.00	34	513	364	0.95	1
1991	1.12	51	571	362	0.95	1
1992	1.38	69	719	765	1.70	1
1993	1.60	105	660	694	1.00	1
1994	1.38	59	625	471	1.50	1
1995	1.47	52	451	322	1.30	1
1996	1.21	33	492	373	1.00	1
1997	1.14	49	705	518	0.90	1
1998	1.05	86	805	349	1.00	1
1999	1.17	76	909	551	1.50	1
2000	1.46	84	888	455	1.70	1
2001	1.48	73	874	491	1.50	1
2002	1.49	60	779	379	0.20	1
2003	1.34	68	736	415	0.20	1
2004	1.32	67	772	459	0.20	1
2005	1.30	68	705	645	1.40	1
2006	1.32	68	829	686	1.50	1
2007	1.30	67	921	677	1.50	1
2008	1.20	50	918	696	1.00	1
2009	1.21	110	895	614	1.10	1
2010	1.16	26	949	656	1.20	1
2011	1.45	75	880	709	1.00	1
2012	1.31	65	880	700	1.00	1

Set 1	Wounding Loss	10.%	10.%	10.%	Yearling Male 10.%
Set 2	Wounding Loss	10.%	10.%	10.%	Yearling Male 10.%

Bio-Year	Young/100 Fems Age 1 - 1	Young/100 Fems Age 2 - 13	Young/100 Fems Disabled	Sex Ratio: 50 : 50
1991	0.0	180.0	0.0	
1992	0.0	180.0	0.0	
1993	0.0	180.0	0.0	
1994	0.0	180.0	0.0	
1995	0.0	180.0	0.0	
1996	0.0	180.0	0.0	
1997	0.0	180.0	0.0	
1998	0.0	180.0	0.0	
1999	0.0	180.0	0.0	
2000	0.0	180.0	0.0	
2001	0.0	180.0	0.0	
2002	0.0	180.0	0.0	
2003	0.0	180.0	0.0	
2004	0.0	180.0	0.0	
2005	0.0	180.0	0.0	
2006	0.0	180.0	0.0	
2007	0.0	180.0	0.0	
2008	0.0	180.0	0.0	
2009	0.0	180.0	0.0	
2010	0.0	180.0	0.0	
2011	0.0	180.0	0.0	
2012	0.0	180.0	0.0	
2013	0.0	180.0	0.0	

POP-II (V1.2.9) Simulation Output Tables for PR523_10.GN1, 02/24/2012 09:55 am

Table 1. Population Size During Bio-Year for PR523_10.GN1 02/24/2012 09:55 am

Bio-Year	Start	Pre-Season	Post Season	End	%Growth
1990	34000	25916	24913	20475	20.1
1991	40826	28971	27888	22951	8.7
1992	44394	28965	27257	19748	-8.5
1993	40615	23290	21685	18629	-6.0
1994	38164	24171	22901	17140	-8.5
1995	34926	21350	20442	16206	-4.8
1996	33265	22552	21564	17539	2.5
1997	34092	24257	22858	18878	6.4
1998	36264	26740	25376	20439	7.6
1999	39008	27667	25977	18961	-3.7
2000	37551	23427	21857	16121	-10.6
2001	33574	20182	18600	14371	-10.2
2002	30144	17965	16625	16114	7.1
2003	32282	21018	19677	18959	13.8
2004	36745	24506	23078	22133	15.1
2005	42280	28609	27049	19784	-6.9
2006	39381	25925	24184	17957	-9.0
2007	35821	23743	21911	16360	-8.5
2008	32765	22530	20699	17052	0.6
2009	32954	22920	21140	17071	1.9
2010	33584	23611	21817	17044	-0.2
2011	33518	21080	19249	16206	-2.0
2012	32857	21526	19717	16249	-2.4

Table 2. Preseason Natural Mortality for PR523_10.GN1 02/24/2012 09:55 am

Bio-Year	Sub-Adults	Adult Males	Adult Females	Total	% of Pop
1990	7713	105	266	8084	23.8
1991	11397	148	311	11855	29.0
1992	14796	223	411	15429	34.8
1993	16693	218	414	17325	42.7
1994	13479	178	336	13993	36.7
1995	13073	172	332	13577	38.9
1996	10321	132	260	10713	32.2
1997	9435	141	259	9835	28.8
1998	9128	143	254	9524	26.3
1999	10862	175	303	11341	29.1
2000	13571	199	354	14124	37.6
2001	12915	161	317	13392	39.9
2002	11751	136	293	12180	40.4
2003	10832	142	290	11264	34.9
2004	11739	175	325	12239	33.3
2005	13096	212	363	13671	32.3
2006	12934	188	334	13456	34.2
2007	11612	168	299	12079	33.7
2008	9843	139	254	10236	31.2
2009	9621	148	265	10033	30.4
2010	9577	139	257	9973	29.7
2011	11944	171	324	12438	37.1
2012	10906	144	280	11331	34.5

Table 3. Harvest Mortality for PR523_10.GN1 02/24/2012 09:55 am

Bio-Year	Sub-Adults	Adult Males	Adult Females	Total	% of Pop

1990	34	513	364	911	3.5
1991	51	571	362	984	3.4
1992	69	719	765	1553	5.4
1993	105	660	694	1459	6.3
1994	59	625	471	1155	4.8
1995	52	451	322	825	3.9
1996	33	492	373	898	4.0
1997	49	705	518	1272	5.2
1998	86	805	349	1240	4.6
1999	76	909	551	1536	5.6
2000	84	888	455	1427	6.1
2001	73	874	491	1438	7.1
2002	60	779	379	1218	6.8
2003	68	736	415	1219	5.8
2004	67	772	459	1298	5.3
2005	68	705	645	1418	5.0
2006	68	829	686	1583	6.1
2007	67	921	677	1665	7.0
2008	50	918	696	1664	7.4
2009	110	895	614	1619	7.1
2010	26	949	656	1631	6.9
2011	75	880	709	1664	7.9
2012	65	880	700	1645	7.6

Table 4. Harvest Percentages for PR523_10.GN1 02/24/2012 09:55 am

Bio-Year	Sub-Adults	Adult Males	Adult Females	Total	Yearling Males
1990	0.4	9.9	2.8	3.52	37.3
1991	0.6	8.8	2.7	3.40	38.8
1992	1.0	9.2	5.3	5.36	36.8
1993	2.5	10.0	5.5	6.26	19.5
1994	1.0	10.0	4.0	4.78	20.4
1995	1.1	8.0	2.9	3.86	24.4
1996	0.5	9.2	3.6	3.98	23.2
1997	0.7	11.7	4.7	5.24	35.3
1998	1.0	12.1	3.0	4.64	35.6
1999	1.0	12.5	4.4	5.55	35.5
2000	1.7	13.4	3.9	6.09	26.5
2001	1.6	16.6	4.7	7.13	18.4
2002	1.5	17.7	4.0	6.78	23.3
2003	1.3	14.3	3.9	5.80	34.8
2004	1.1	12.0	3.8	5.30	36.9
2005	1.0	8.9	4.7	4.96	34.0
2006	1.0	12.0	5.6	6.11	25.0
2007	1.1	14.6	6.0	7.01	24.2
2008	0.8	16.3	6.7	7.39	25.4
2009	1.8	15.0	5.7	7.06	34.7
2010	0.4	16.2	6.1	6.91	31.6
2011	1.7	15.4	6.5	7.89	34.0
2012	1.1	16.4	6.7	7.64	26.2

Table 5. Postseason Natural Mortality for PR523_10.GN1 02/24/2012 09:55 am

Bio-Year	Sub-Adults	Adult Males	Adult Females	Total	% of Pop
1990	2552	558	1328	4439	17.8
1991	2959	732	1246	4937	17.7
1992	3910	1561	2038	7509	27.5
1993	1420	741	894	3055	14.1
1994	3145	1179	1436	5761	25.2
1995	2119	977	1141	4236	20.7

1996	2346	800	879	4025	18.7
1997	2225	868	886	3980	17.4
1998	2857	955	1125	4937	19.5
1999	4002	1283	1732	7016	27.0
2000	2931	1217	1587	5736	26.2
2001	2340	815	1074	4229	22.7
2002	277	104	130	511	3.1
2003	368	155	194	718	3.6
2004	418	223	304	945	4.1
2005	3419	1836	2011	7265	26.9
2006	3459	1115	1652	6227	25.7
2007	3244	975	1332	5551	25.3
2008	2277	642	727	3647	17.6
2009	2372	861	835	4068	19.2
2010	2901	935	937	4773	21.9
2011	1557	685	802	3043	15.8
2012	1986	627	855	3467	17.6

Table 6. Preseason Ratios for PR523_10.GN1 02/24/2012 09:55 am

Bio-Year	Subadults /100 1+F	2+ Males /100 1+F	Yr. Males /100 1+F	Ad Males /100 1+F
1990	59.2	24.9	14.8	39.6
1991	66.0	29.2	18.5	47.6
1992	45.9	34.3	20.0	54.2
1993	33.4	42.5	10.3	52.8
1994	51.2	42.2	10.8	53.1
1995	43.0	39.0	12.6	51.6
1996	64.3	39.0	11.8	50.8
1997	64.0	35.1	19.1	54.2
1998	69.8	36.3	20.0	56.3
1999	60.8	37.1	20.5	57.6
2000	42.6	41.3	14.9	56.2
2001	43.7	41.4	9.3	50.8
2002	42.2	35.5	10.8	46.3
2003	50.7	31.9	17.0	48.9
2004	50.4	34.0	19.8	53.8
2005	51.8	38.5	19.9	58.4
2006	54.0	42.2	14.0	56.2
2007	55.9	42.7	13.6	56.3
2008	63.5	40.7	13.9	54.6
2009	58.8	36.4	19.3	55.7
2010	64.1	37.1	17.1	54.2
2011	41.8	34.8	18.0	52.8
2012	55.2	38.0	13.5	51.5

Table 7. Postseason Ratios for PR523_10.GN1 02/24/2012 09:55 am

Bio-Year	Subadults /100 1+F	2+ Males /100 1+F	Yr. Males /100 1+F	Ad Males /100 1+F
1990	60.8	22.8	13.6	36.4
1991	67.6	27.1	17.2	44.3
1992	48.2	32.7	19.1	51.8
1993	34.5	40.3	9.8	50.1
1994	52.9	39.3	10.1	49.4
1995	43.9	36.8	11.9	48.7
1996	66.5	36.5	11.0	47.5
1997	67.0	32.2	17.6	49.8
1998	71.4	32.5	17.9	50.4
1999	63.2	33.7	18.5	52.2
2000	43.7	36.8	13.3	50.0
2001	45.3	35.7	8.0	43.8
2002	43.4	29.9	9.1	39.0

2003	52.2	28.1	15.0	43.1
2004	52.0	30.8	18.0	48.8
2005	54.1	36.7	18.9	55.6
2006	56.9	39.0	13.0	52.0
2007	59.2	38.4	12.2	50.6
2008	68.1	36.1	12.3	48.4
2009	61.5	32.5	17.2	49.7
2010	68.5	32.7	15.1	47.8
2011	44.2	31.2	16.1	47.3
2012	58.8	33.6	12.0	45.6

Table 8. End of Year Ratios for PR523_10.GN1 02/24/2012 09:55 am

Bio-Year	Subadults /100 Adlts	Subadults /100 1+F	Yr. Males /100 1+F	Ad Males /100 1+F
1990	33.4	45.3	13.7	35.8
1991	34.9	49.9	17.2	42.8
1992	15.6	23.0	18.6	47.4
1993	16.5	24.3	9.5	47.4
1994	19.9	28.8	9.8	44.7
1995	18.6	26.8	11.6	44.2
1996	33.0	47.4	10.9	43.4
1997	34.5	50.1	17.5	45.4
1998	35.1	51.4	17.9	46.7
1999	23.6	35.1	18.4	48.5
2000	14.1	20.6	12.8	45.7
2001	17.3	24.2	7.7	39.8
2002	29.6	41.0	9.0	38.4
2003	34.8	49.5	15.0	42.4
2004	33.5	49.6	18.1	48.1
2005	21.9	32.7	19.3	49.0
2006	21.1	31.5	12.9	49.4
2007	21.9	32.2	11.9	47.3
2008	33.0	47.9	12.0	45.1
2009	28.5	41.3	16.7	44.8
2010	30.7	43.8	14.6	42.5
2011	21.7	31.3	15.7	43.9
2012	29.4	41.9	11.8	42.9

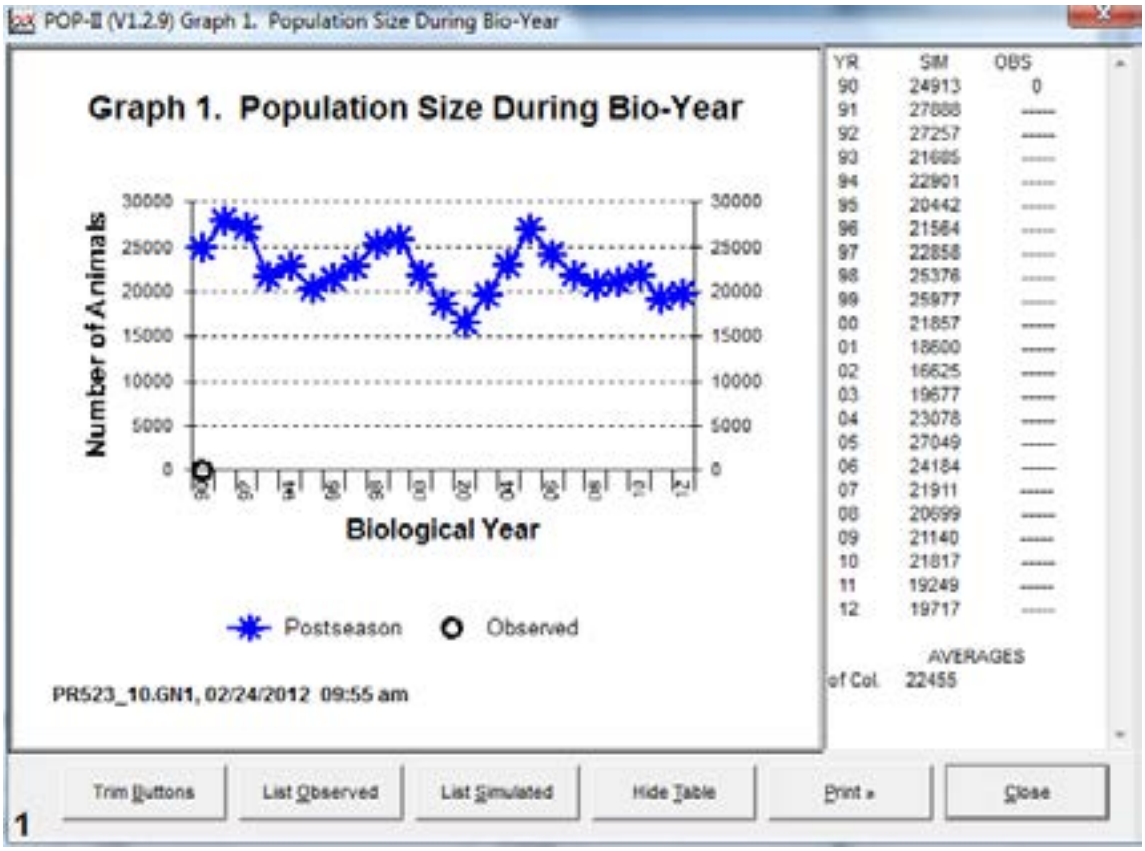
Table 9. Reproduction at Start of Bio-Year for PR523_10.GN1 02/24/2012 09:55 am

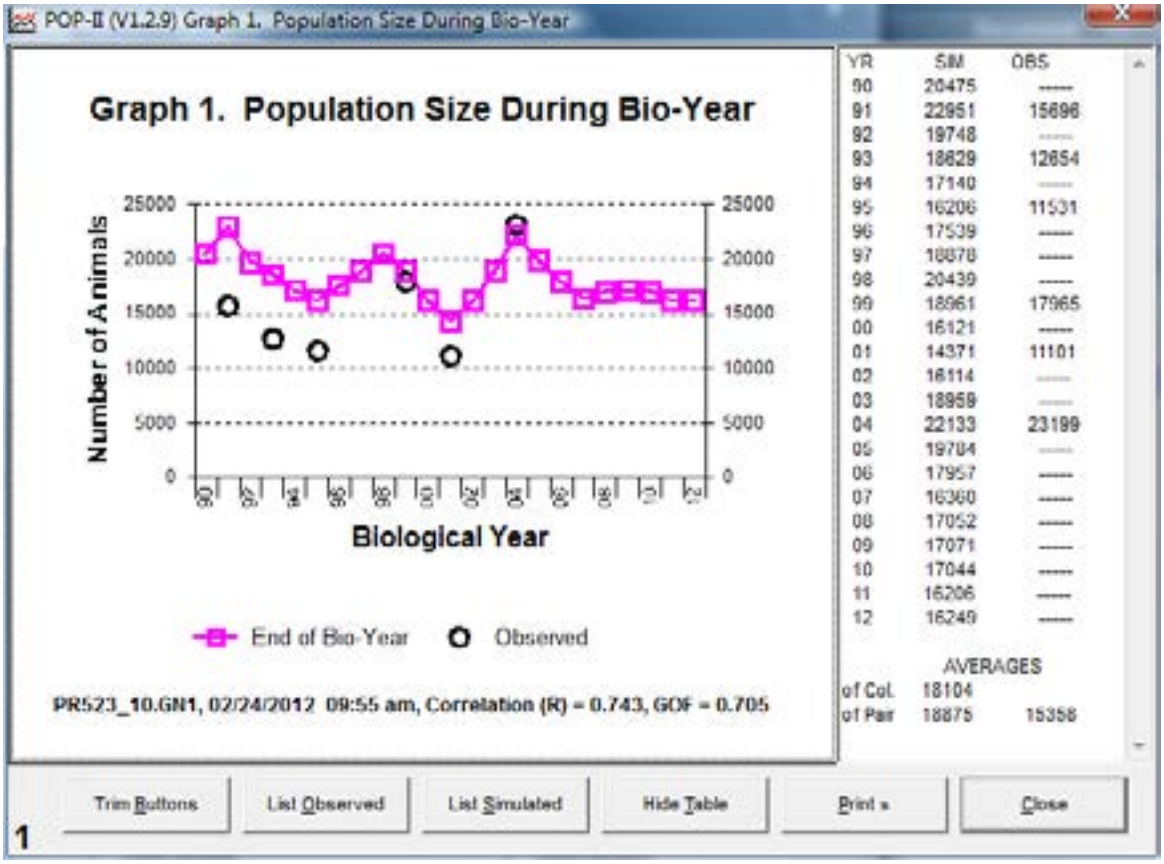
Bio-Year	Young / 100 AF 1 +	Sub-Ad. / 100 AF 1 +	Total Young	Total Sub-Adult	Total Females 1 +
1990	116	116	15426	15426	13301
1991	147	147	20351	20351	13868
1992	144	144	21443	21443	14883
1993	161	161	20867	20867	12923
1994	160	160	19535	19535	12171
1995	157	157	17786	17786	11304
1996	159	159	17059	17059	10746
1997	146	146	16553	16553	11374
1998	144	144	17386	17386	12078
1999	143	143	18568	18568	12969
2000	153	153	18590	18590	12138
2001	163	163	17453	17453	10694
2002	161	161	15774	15774	9822
2003	149	149	16168	16168	10822
2004	144	144	17786	17786	12327
2005	144	144	20147	20147	13971
2006	155	155	19597	19597	12666
2007	155	155	17864	17864	11489
2008	155	155	16405	16405	10581

2009	145	145	15902	15902	10949
2010	149	149	16512	16512	11068
2011	148	148	16474	16474	11155
2012	156	156	16651	16651	10696

Table A. Intra-Annual Natural Survival(%) for PR523_10.GN1 02/24/2012 09:55 am

Bio-Years	Sub Adults	Adult Males	Adult Females	Overall Survival
1990-1991	65.25	85.91	87.48	80.34
1991-1992	64.91	85.03	88.03	80.03
1992-1993	39.20	75.39	82.33	70.13
1993-1994	63.21	84.98	89.84	83.54
1994-1995	46.10	76.59	84.74	72.65
1995-1996	53.18	79.14	87.10	77.36
1996-1997	63.52	81.39	89.19	79.48
1997-1998	67.06	81.71	89.67	80.86
1998-1999	63.48	81.51	88.06	78.66
1999-2000	46.11	77.30	83.14	70.86
2000-2001	39.30	76.13	83.39	71.58
2001-2002	46.08	78.65	86.43	74.96
2002-2003	90.51	94.48	95.93	94.33
2003-2004	90.54	93.87	95.48	93.81
2004-2005	90.58	93.53	94.82	93.41
2005-2006	49.65	72.45	82.18	71.21
2006-2007	46.27	79.35	83.50	72.32
2007-2008	46.36	79.60	85.16	72.87
2008-2009	63.43	84.04	90.16	80.39
2009-2010	60.07	80.76	89.53	78.88
2010-2011	56.32	78.27	88.08	75.86
2011-2012	63.30	83.34	89.61	81.98


POP-II (V1.2.9) Graph 1. Population Size During Bio-Year
Graph 1. Population Size During Bio-Year
Number of Animals
Biological Year
Postseason
Observed
PR523_10.GN1, 02/24/2012 09:55 am
YR SIM OBS
90 24913 0
91 27888 -----
92 27257 -----
93 21685 -----
94 22901 -----
95 20442 -----
96 21564 -----
97 22858 -----
98 25376 -----
99 25977 -----
00 21857 -----
01 18600 -----
02 16625 -----
03 19677 -----
04 23078 -----
05 27049 -----
06 24184 -----
07 21911 -----
08 20699 -----
09 21140 -----
10 21817 -----
11 19249 -----
12 19717 -----
AVERAGES
of Col. 22455
Trim Buttons
List Observed
List Simulated
Hide Table
Print »
Close
1


POP-II (V1.2.9) Graph 1. Population Size During Bio-Year
Graph 1. Population Size During Bio-Year
Number of Animals
Biological Year
End of Bio-Year
Observed
PR523_10.GN1, 02/24/2012 09:55 am, Correlation (R) = 0.743, GOF = 0.705
YR SIM OBS
90 20475 -----
91 22951 15696
92 19748 -----
93 18629 12654
94 17140 -----
95 16206 11531
96 17539 -----
97 18878 -----
98 20439 -----
99 18961 17965
00 16121 -----
01 14371 11101
02 16114 -----
03 18959 -----
04 22133 23199
05 19704 -----
06 17957 -----
07 16360 -----
08 17052 -----
09 17071 -----
10 17044 -----
11 16206 -----
12 16249 -----
AVERAGES
of Col. 18104
of Pair 18875 15358
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List Simulated
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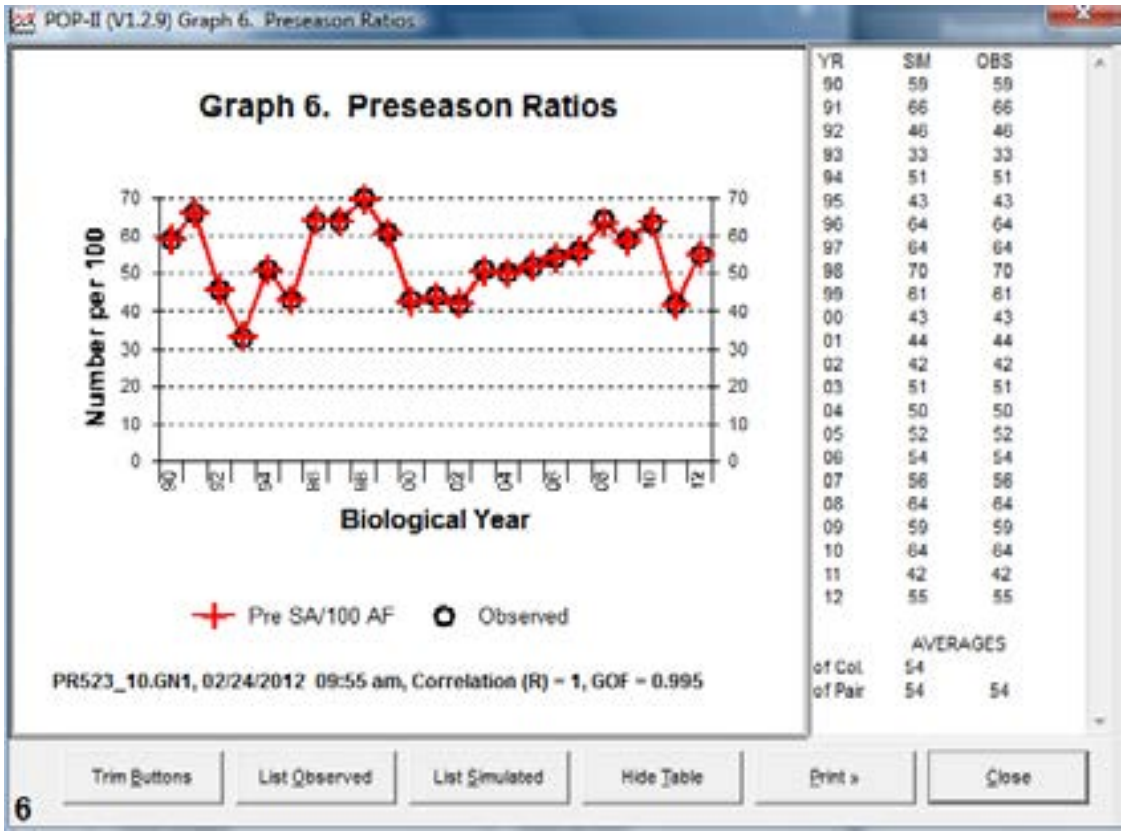
1


POP-II (V1.2.9) Graph 6. Preseason Ratios
Graph 6. Preseason Ratios
Number per 100
Biological Year
Pre SA/100 AF
Observed
PR523_10.GN1, 02/24/2012 09:55 am, Correlation (R) = 1, GOF = 0.995
YR SIM OBS
90 59 59
91 66 66
92 46 46
93 33 33
94 51 51
95 43 43
96 64 64
97 64 64
98 70 70
99 81 81
00 43 43
01 44 44
02 42 42
03 51 51
04 50 50
05 52 52
06 54 54
07 56 56
08 64 64
09 59 59
10 64 64
11 42 42
12 55 55
AVERAGES
of Col. 54
of Pair 54 54
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List Observed
List Simulated
Hide Table
Print »
Close
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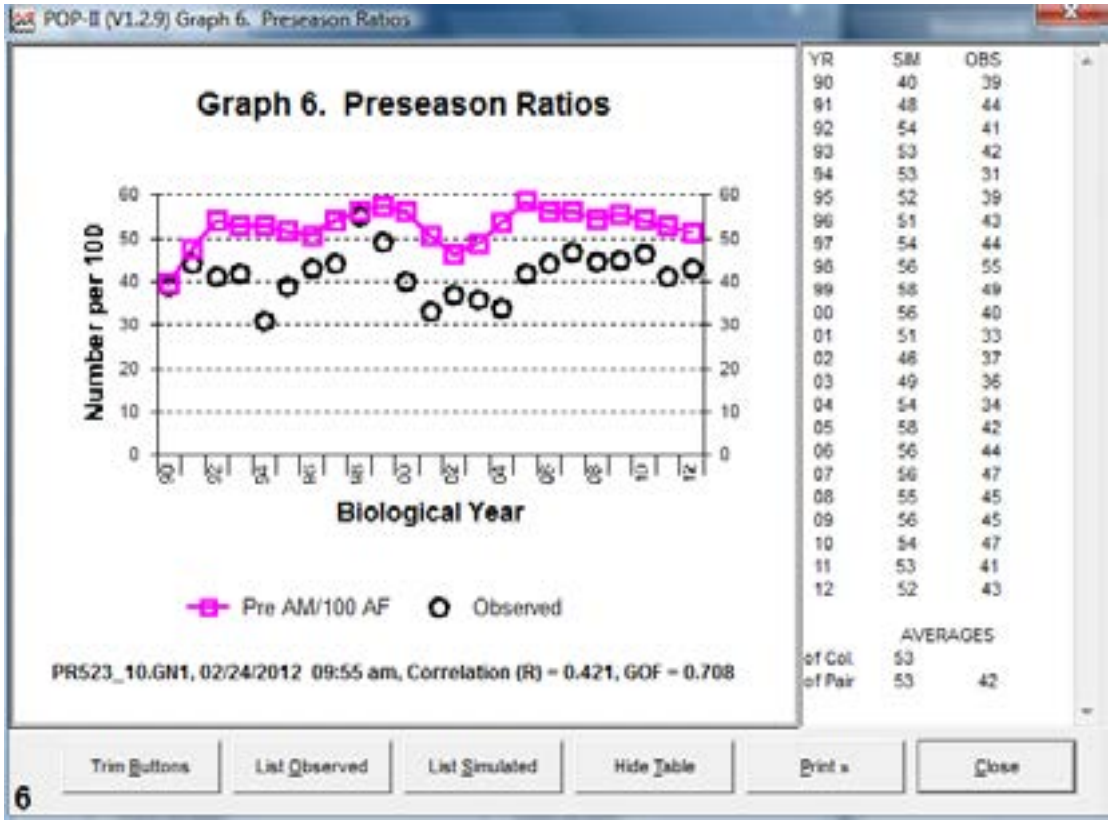
POP-II (V1.2.9) Graph 6. Preseason Ratios
Graph 6. Preseason Ratios
Number per 100
Biological Year
Pre AM/100 AF
Observed
PR523_10.GN1, 02/24/2012 09:55 am, Correlation (R) = 0.421, GOF = 0.708
YR SIM OBS
90 40 39
91 48 44
92 54 41
93 53 42
94 53 31
95 52 39
96 51 43
97 54 44
98 56 55
99 58 49
00 56 40
01 51 33
02 46 37
03 49 36
04 54 34
05 58 42
06 56 44
07 56 47
08 55 45
09 56 45
10 54 47
11 53 41
12 52 43
AVERAGES
of Col. 53
of Pair 53 42
Trim Buttons
List Observed
List Simulated
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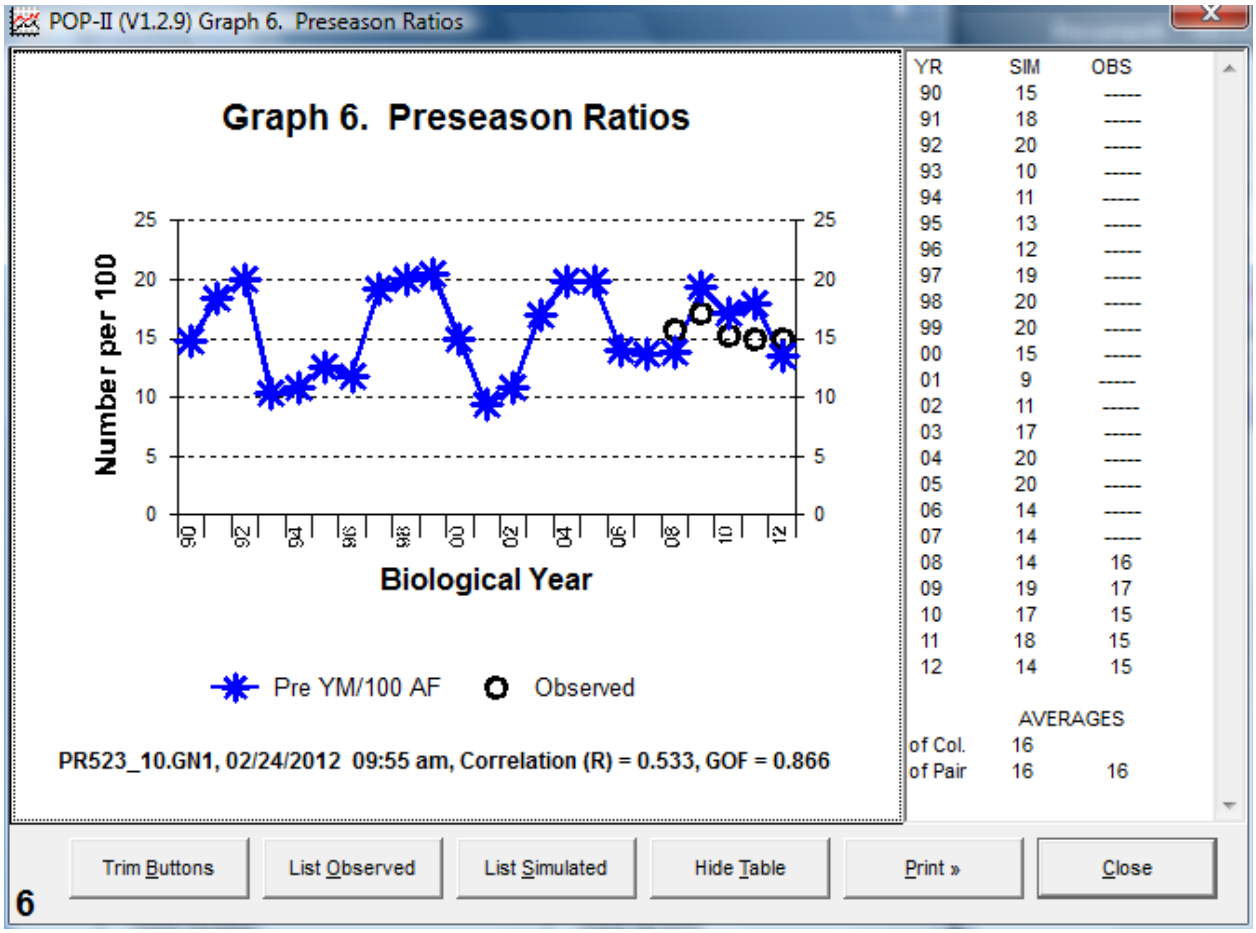
POP-II (V1.2.9) Graph 6. Preseason Ratios
Graph 6. Preseason Ratios
Number per 100
Biological Year
Pre YM/100 AF
Observed
PR523_10.GN1, 02/24/2012 09:55 am, Correlation (R) = 0.533, GOF = 0.866
YR SIM OBS
90 15 -----
91 18 -----
92 20 -----
93 10 -----
94 11 -----
95 13 -----
96 12 -----
97 19 -----
98 20 -----
99 20 -----
00 15 -----
01 9 -----
02 11 -----
03 17 -----
04 20 -----
05 20 -----
06 14 -----
07 14 -----
08 14 16
09 19 17
10 17 15
11 18 15
12 14 15
AVERAGES
of Col. 16
of Pair 16 16
Trim Buttons
List Observed
List Simulated
Hide Table
Print »
Close
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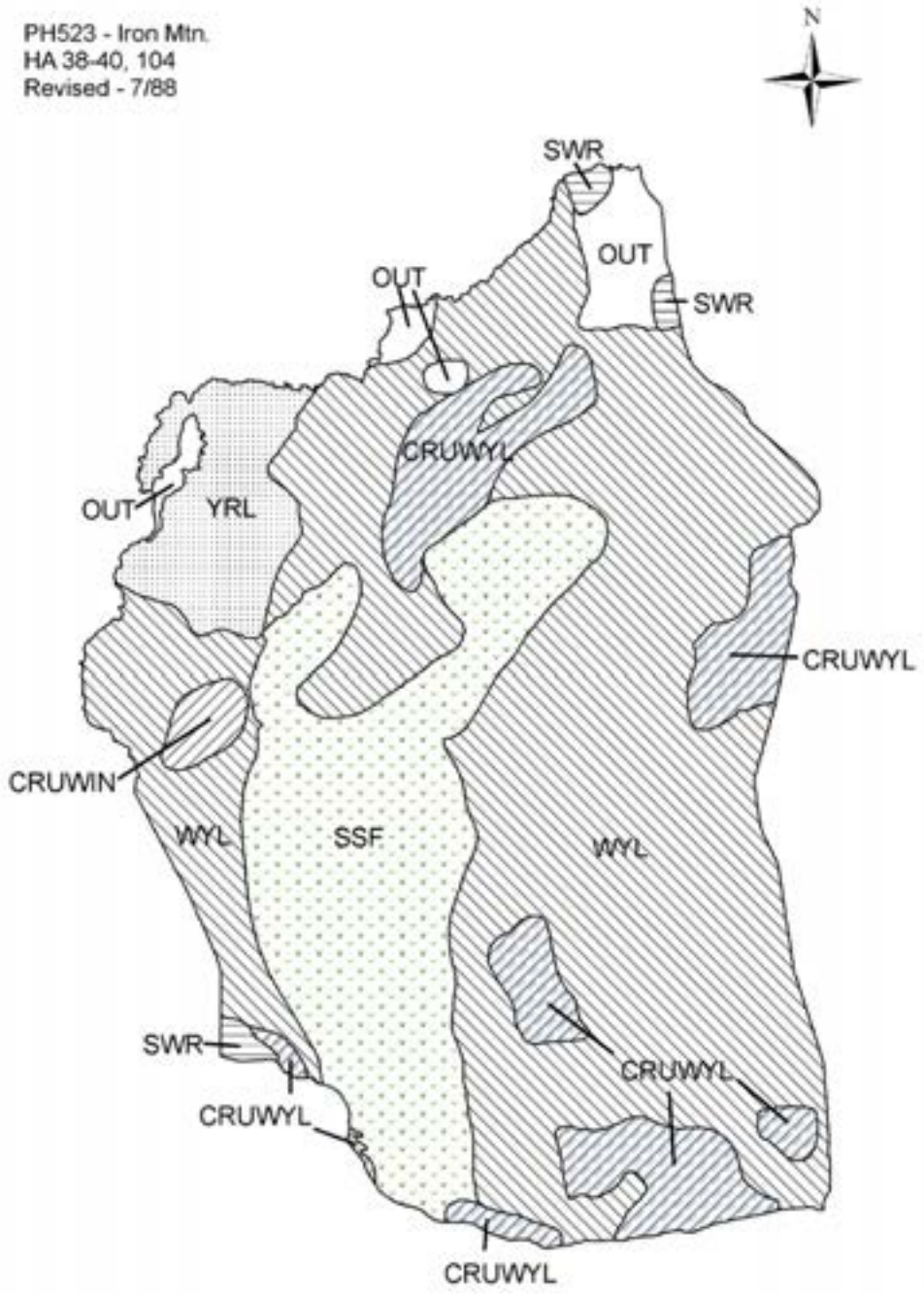
PH523 - Iron Mtn.
HA 38-40, 104
Revised - 7/88
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OUT
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CRUWYL
OUT
YRL
CRUWYL
CRUWIN
WYL
SSF
WYL
SWR
CRUWYL
CRUWYL
CRUWYL

2011 - JCR Evaluation Form

SPECIES: Pronghorn | PERIOD: 6/1/2011 - 5/31/2012

HERD: PR524 - DWYER

HUNT AREAS: 103 | PREPARED BY: MARTIN HICKS

	2006 - 2010 Average	2011	2012 Proposed
Population:	4,480	5,000	4,000
Harvest:	471	493	570
Hunters:	502	475	600
Hunter Success:	94%	104%	95 %
Active Licenses:	575	574	650
Active License Percent:	82%	86%	88 %
Recreation Days:	1,837	1,715	1,800
Days Per Animal:	3.9	3.5	3.2
Males per 100 Females	53	33	
Juveniles per 100 Females	48	53	

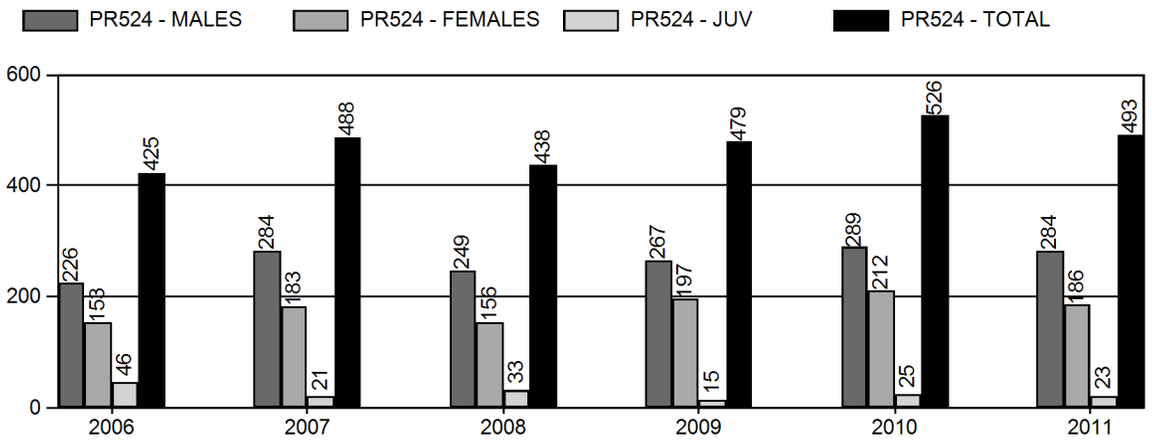
Population Objective:	4,000
Management Strategy:	Recreational
Percent population is above (+) or below (-) objective:	25%
Number of years population has been + or - objective in recent trend:	2
Model Date:	02/29/2012

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

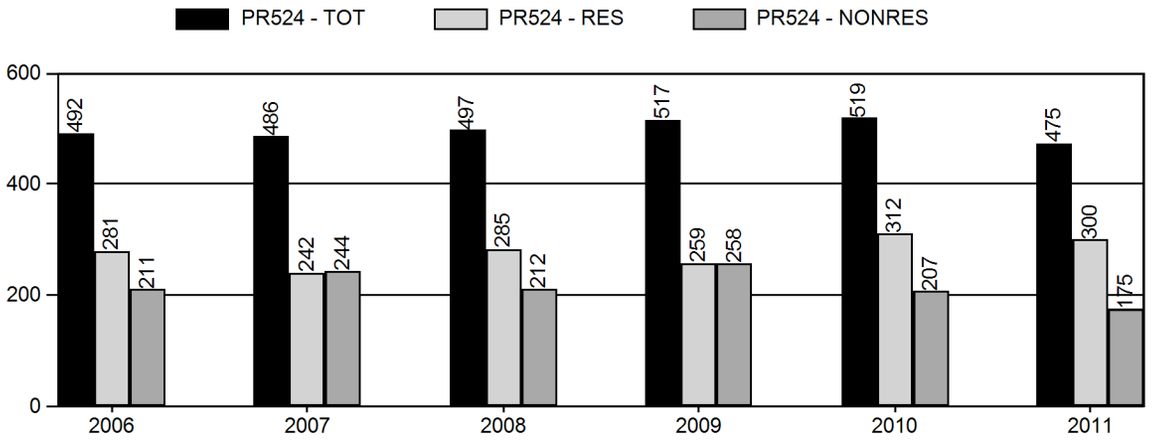
	JCR Year	Proposed
Females ≥ 1 year old:	7.3%	11.8%
Males ≥ 1 year old:	18.6%	22%
Juveniles (< 1 year old):	1.6%	2.8%
Total:	8.9%	12.5%
Proposed change in post-season population:	-17%	-20%

Population Size - Postseason

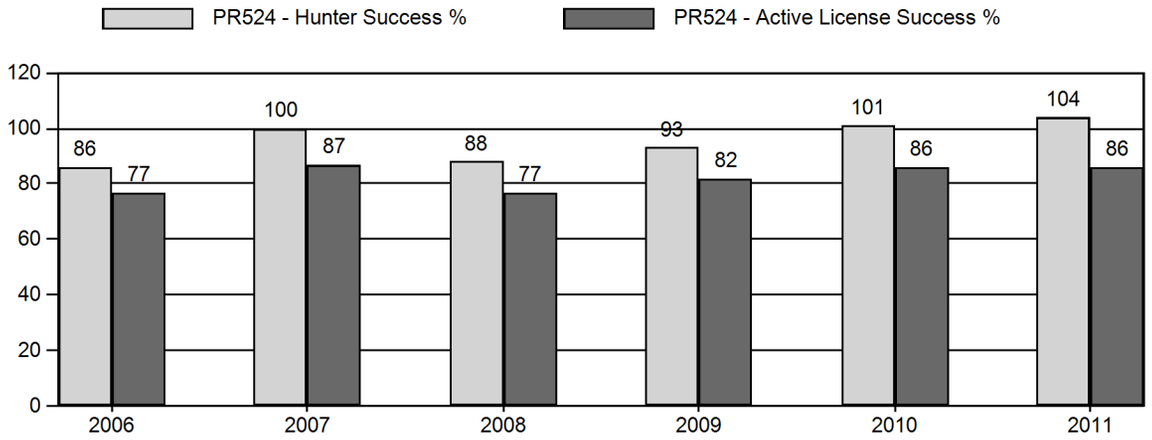
Harvest



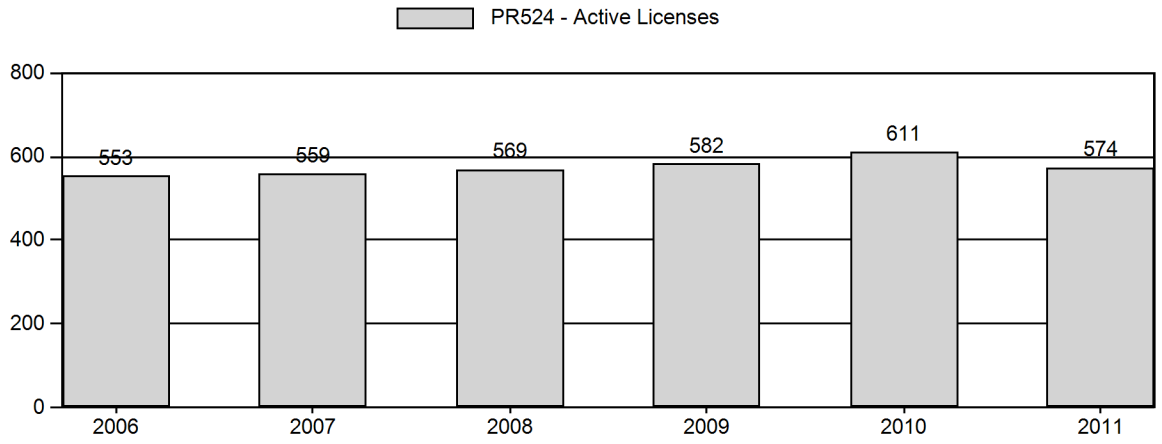
Number of Hunters



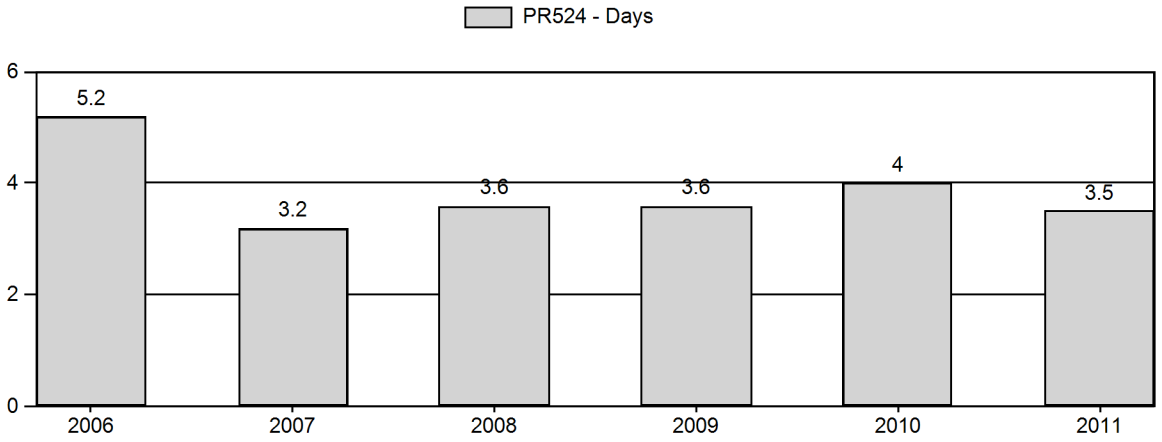
Harvest Success



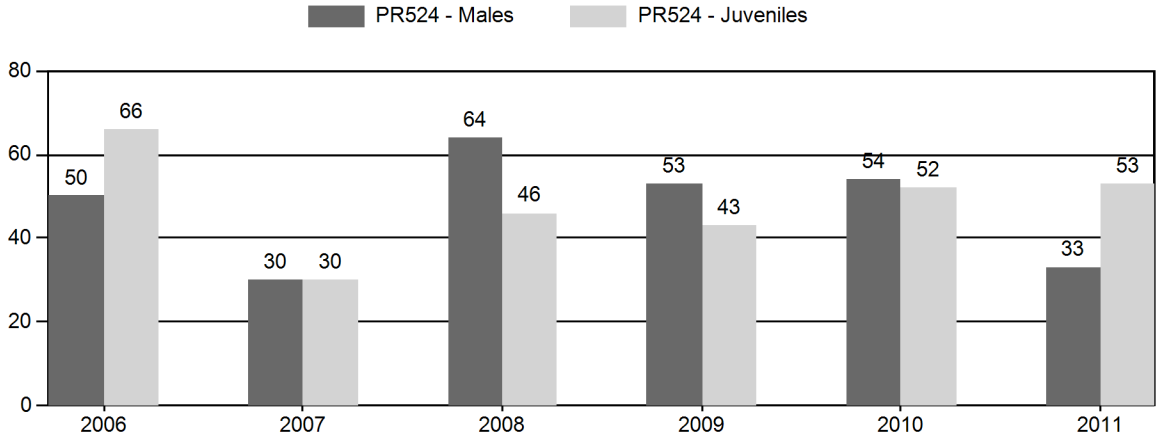
Active Licenses



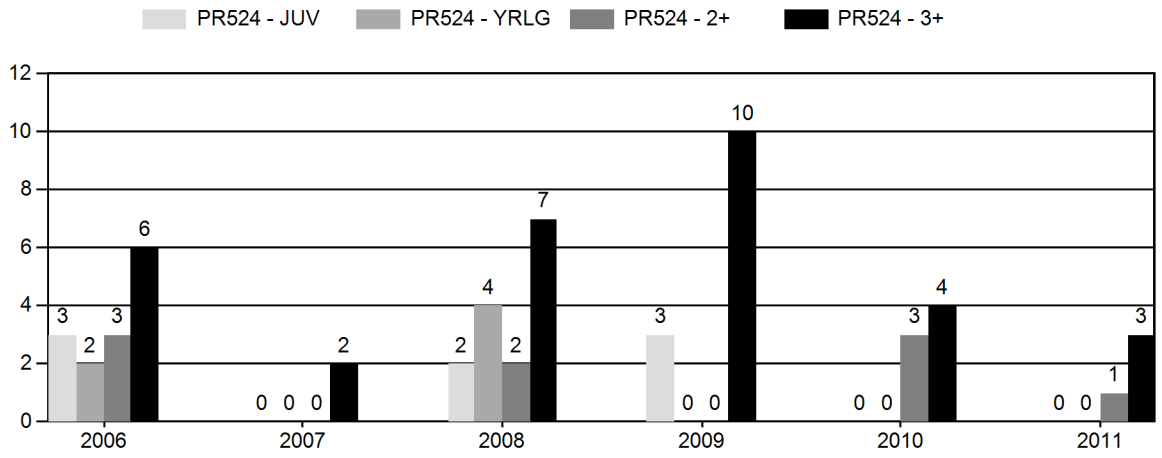
Days Per Animal Harvested



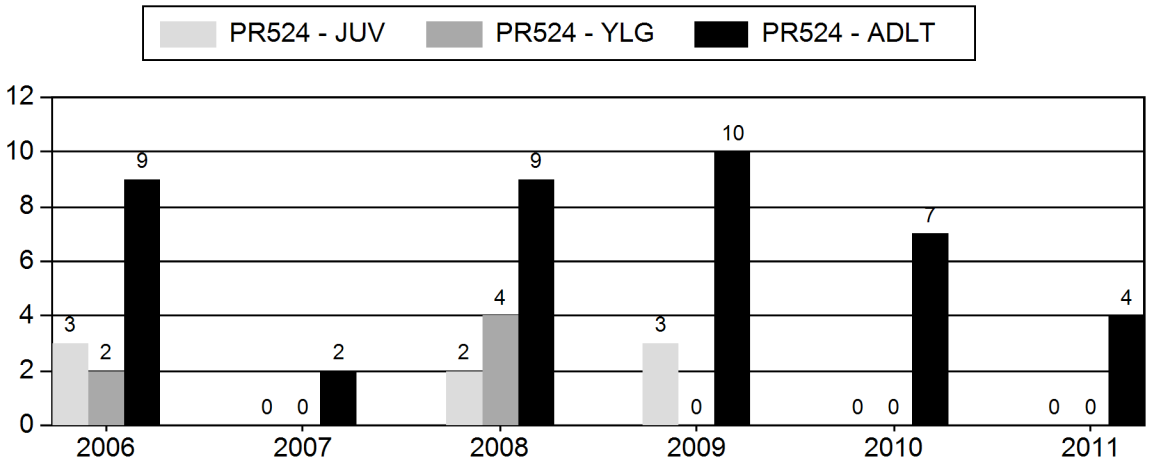
Preseason Animals per 100 Females



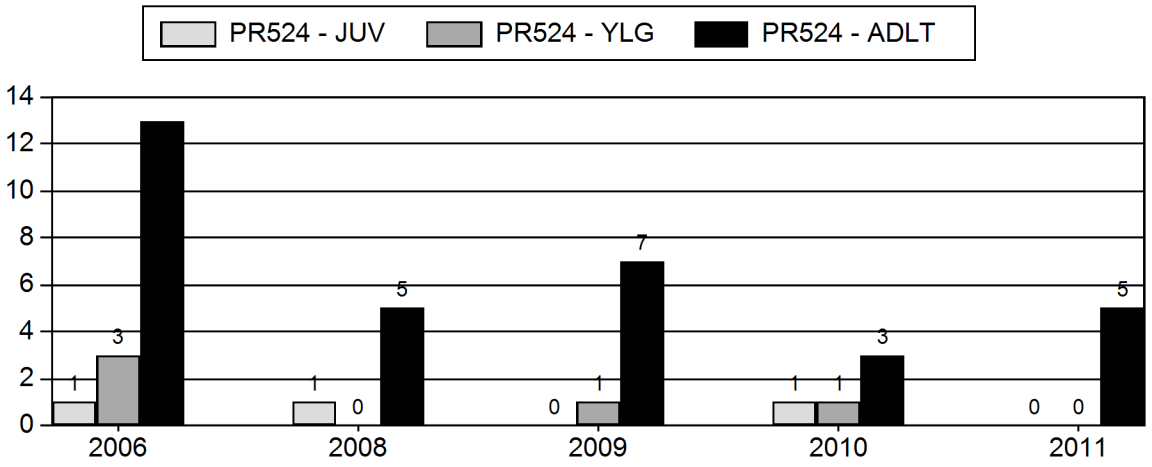
Age Structure of Field Checked Males



Age Structure Data (Field and Laboratory) - Male



Age Structure Data (Field and Laboratory) - Female



2006 - 2011 Preseason Classification Summary

for Pronghorn Herd PR524 - DWYER

		MALES				FEMALES		JUVENILES				Males to 100 Females				Young to		
Year	Pre Pop	Ylg	Adult	Total	%	Total	%	Total	%	Tot Cls	Cls Obj	Ylng	Adult	Total	Conf Int	100 Fem	Conf Int	100 Adult
2006	5,000	63	111	174	23%	345	46%	226	30%	745	650	18	32	50	± 0	66	± 0	44
2007	5,000	32	51	83	19%	281	63%	84	19%	448	650	11	18	30	± 0	30	± 0	23
2008	5,000	102	258	360	31%	560	47%	259	22%	1,179	984	18	46	64	± 6	46	± 5	28
2009	5,000	60	123	183	27%	345	51%	147	22%	675	1,036	17	36	53	± 0	43	± 0	28
2010	4,900	78	113	191	26%	356	49%	185	25%	732	807	22	32	54	± 0	52	± 0	34
2011	5,500	56	115	171	18%	512	54%	271	28%	954	1,345	11	22	33	± 4	53	± 6	40

2011 HUNTING SEASONS

PR524 - DWYER

Hunt Area	Add'l Hunt Areas	Type	Quota	Season Dates	Limitations
103		ARCH		08/15 - 10/04	Refer to Section 3 of this Chapter
103		Type 1	375	10/05 - 10/31	Any
103		Type 6	100	10/05 - 10/31	Reduced Price doe/fawn
103		Type 6	100	11/01 - 11/30	Unused Area 103 Type 6 licenses valid in that portion of Area 103 north of the Ridge Road (Converse County Road 6, Platte County Road 135)
103		Type 7	175	10/05 - 10/31	Limited Quota; 175 licenses doe or fawn valid in that portion of Area 103 south of Cottonwood Creek

Table 1. PH524 Harvest Data, 2011.

Area	Type	Active Lic/*	Buck	Doe	Fawn	Total	Success	Days/Harve	Days	Licenses Sold
2011										
103 DWYER										
	Type 1	321	284	0	0	284	88.50%	2.8	800	374
	Type 6	90	0	65	8	73	81.10%	3.4	245	100
	Type 7	163	0	121	15	136	83.40%	4.9	670	175
Pooled Total		475	284	186	23	493	103.80%	3.5	1715	
Pooled Resident		300	210	95	5	310	103.30%	3.1	958	
Pooled Nonresident		175	74	91	18	183	104.60%	4.1	757	
2011 Hunt Area Total		475	284	186	23	493	103.80%	3.5	1715	649
2011 Herd Total		475	284	186	23	493	103.80%	3.5	1715	649

*Active Licenses

2006 - 2011 Harvest Age Structure

for Pronghorn Herd PR524 - DWYER

	Males										Females										Herd
Year	Juv	1	% 1 *	2	3 ^	% 3 **	Total Aged ++	Not Aged +++	Unk	Total Chkd	Juv	1	% 1 *	2	3 ^	% 3 **	Total Aged ++	Not Aged +++	Unk	Total Chkd	Total
2006	3	2	18%	3	6	55%	14	0	0	14	1	3	19%	1	12	75%	17	0	6	23	37
2007	0	0	0%	0	2	100%	2	0	0	2	0	0	0%	0	0	0%	0	0	0	0	2
2008	2	4	31%	2	7	54%	15	0	0	15	1	0	0%	2	3	60%	6	0	0	6	21
2009	3	0	0%	0	8	100%	11	2	4	17	0	1	12%	2	0	0%	3	5	1	9	26
2010	0	0	0%	3	2	40%	5	2	0	7	1	1	25%	1	0	0%	3	2	2	7	14
2011	0	0	0%	1	0	0%	1	3	0	4	0	0	0%	1	1	50%	2	3	0	5	9

* Percent of aged animals (including unaged adults but excluding juveniles) 1 1/2 years old

^ Number of animals three years old and older. Animals aged older than three (excluding unaged adults) are lumped into this three plus category

** Percent of aged animals (not including juveniles or unaged adults) three years old or older

++ includes juveniles

+++ Unaged adults - unaged animals older than yearlings

DWYER PRONGHORN (A524)
HUNT AREA 103
2012 HUNTING SEASONS

HUNT AREA	TYPE	OPENS	CLOSES	LIMITATIONS
103	1	OCT. 5	OCT. 31	L.Q.; 375 licenses any antelope
	6	OCT. 5	OCT. 31	L.Q.; ~~100~~ 150 licenses doe or fawn
		NOV. 1	~~NOV. 30~~ DEC. 31	Unused Area 103 Type 6 licenses valid in that portion of Area 103 ~~north of the Ridge Road (Converse County Road 6, Platte County Road 135)~~ north of Horseshoe Creek
	7	OCT. 5	OCT. 31	L.Q.; ~~175~~ 225 licenses doe or fawn valid in that portion of Area 103 south of Cottonwood Creek.
ARCHERY				
103		AUG 15	OCT. 4	Refer to Section 3 of this Chapter

CHANGES FOR 2012

- Increase Hunt Area 103 Type 6 licenses from 100 to 150
- Increase Hunt Area 103 Type 7 licenses from 175 to 225
- Increase the Season Length for the Type 6 licenses by 31 days
- Expand the boundary for the late season Type 6 licenses to include that portion of Hunt Area 103 north of Horseshoe Creek.

Hunt Area	License Type	Proposed Change
103	6	+50
103	7	+50

Management Evaluation

Population: The 2011 post-season population was 5,000 pronghorn, 25% over the objective of 4,000. Seasons have been adjusted to try and bring the population towards the objective with an increase in Type 6 and 7 licenses and season length for the Type 6 licenses.

The population was anchored to adult buck ratios, fawn ratios and the 2004 end-of-the year line transect estimate. Yearling male ratios were not aligned due to lack of confidence in the survey assuming yearling bucks were not separately classified from adult pronghorn or were confused with doe pronghorn.

The population increased as increased buck and fawn ratios outstripped the harvest.

The winter of 2011/12 produced below average snow production and average to above average temperatures, most likely resulting in below average winter mortality.

However, the spring of 2012 produced the lowest amount of precipitation in recent years. Based on the Wyoming Climate Web page (www.wrds.uwyo.edu/sco/data/climate_Summary_2012Mar.html) Southeast Wyoming had 0" of precipitation in March. Also based on the same website the Laramie River Basin was 64% of normal as of March 2012. Data for April, May and June were not available at the time of this report, but based on anecdotal observations there was little precipitation recorded during those months when the vegetative production so crucial to juvenile production and survival. The summer of 2012 has also produced the highest amount of wildfire activity in recent history. At the time of this report there have been 4 wildfires that have burned an estimate of 110,000 acres.

The WGFD will change the way ungulate populations are estimated starting biological year 2012. POP II will be replaced by Spreadsheet Models that were developed by G. White and B. Lubow, of the Colorado Division of Wildlife. Based on input from T. Morrison of the Wyoming Cooperative Fish and Wildlife Research Unit, the Spreadsheet Model provides a more statistically rigorous way to estimate population sizes and to compare different models (Morrison, 2012).

2011 Season: The 2011 season was designed to stabilize the population around the objective of 4,000 pronghorn, while increasing Type 1 licenses to take advantage of increased buck ratios. Type 6 will remain the same at 100 but the season length was increased by moving the closing date from November 15 to November 30. Type 7 licenses were decreased from 200 to 175. Given predicted harvest and buck:100doe:fawn ratios it was assumed this would maintain the population. However, above average fawn ratios in 2010 and 2011 coupled with above average buck ratios from 2008-2010 resulted in an increase in the population. The 2011 season resulted in a harvest of 284 bucks, 186 does and 23 fawns for a total harvest of 493 pronghorn, which was a decrease when compared to the 2010 season of 526 pronghorn.

2012 Season: The 2012 season is designed to decrease the population by increasing the Type 6 licenses by 50 and increasing the season length by 31 days. The Type 7 license increased from 175 to 225. Due to an observed decrease in buck ratios in 2011 the Type 1 licenses will remain the same at 375. Given previous harvest statistics it is predicted the 2012 season will result in a harvest of 280 bucks, 260 does, and 30 fawns for a total harvest of 570 pronghorn, which should decrease the population and move it closer to the objective of 4,000 pronghorn.

Literature Cited:

Guenzel, R.J. 2007. Procedures for Estimating Pronghorn Abundance In Wyoming Using Aerial Line Transect Sampling. Wyoming Game and Fish Department, Cheyenne. ____pp.

Morrison, T. 2012. User Guide: Spreadsheet Model for Ungulate Population Data, Wyoming Cooperative Fish and Wildlife Research Unit, 4.

Dwyer - standard modeling parameters
Data from 1990 to 2012 Simulation from 2002 to 2012

Age Class	Init Pop. Male	Prop. Female	Presn Male	Mort% Female	Postsn Mort% Male	Female	Effort Set 1 Male	Female	Effort Set 2 Male	Female
0	56.5	56.5	50.0	50.0	30.0	30.0	1.00	1.00	1.00	1.00
1	9.9	21.2	2.0	2.0	6.0	3.0	0.10	1.00	1.45	1.00
2	7.9	16.9	2.0	2.0	6.0	3.0	1.00	1.00	1.00	1.00
3	6.3	13.5	2.0	2.0	6.0	3.0	1.00	1.00	1.00	1.00
4	5.1	10.8	2.0	2.0	6.0	3.0	1.00	1.00	1.00	1.00
5	4.1	8.7	2.0	2.0	7.0	3.0	1.00	1.00	1.00	1.00
6	3.2	6.9	2.0	2.0	9.0	5.0	1.00	1.00	1.00	1.00
7	2.6	5.5	2.0	2.0	25.0	10.0	1.00	1.00	1.00	1.00
8	2.1	4.4	2.0	2.0	50.0	20.0	1.00	1.00	1.00	1.00
9	1.7	3.6	2.0	2.0	100.0	30.0	1.00	1.00	1.00	1.00
10	1.3	2.8	2.0	2.0	100.0	40.0	1.00	1.00	1.00	1.00
11	1.1	2.3	2.0	2.0	100.0	50.0	1.00	1.00	1.00	1.00
12	0.8	1.8	2.0	2.0	100.0	75.0	1.00	1.00	1.00	1.00
13	0.7	1.5	2.0	2.0	100.0	100.0	1.00	1.00	1.00	1.00

Sum = 259.7 Estimated Sum = 9500 Subadults: Ages 0 to 0

Data Set: A5242012 ten year new.GN1 02/29/2012 12:32 pm Page 2

MSI Function is Linear

Bio-Year	Preseason MSI	Harvest // Des. Pop Size in NA Subadults#	Males#	Females#	Postseason MSI	Effort & Wound Set Used
1990	1.00	6	132	45	1.10	1
1991	1.26	8	149	88	1.00	1
1992	1.37	11	142	128	1.00	1
1993	1.70	0	118	23	1.00	1
1994	1.40	6	290	80	1.00	1
1995	1.59	6	288	116	1.00	1
1996	1.42	10	281	137	1.00	1
1997	1.51	0	271	200	1.00	1
1998	1.50	16	276	143	1.10	2
1999	1.49	39	276	173	1.00	1
2000	1.15	20	272	170	0.70	1
2001	1.19	13	262	152	0.70	1
2002	1.40	14	310	140	0.70	2
2003	1.53	25	284	177	0.70	1
2004	1.52	17	313	175	1.10	2
2005	1.53	23	281	166	1.00	1
2006	1.19	46	229	154	1.20	2
2007	1.61	21	284	183	0.60	1
2008	1.45	33	249	156	0.95	1
2009	1.46	15	267	197	0.80	1
2010	1.33	25	289	212	2.00	1
2011	1.35	23	284	186	2.00	2
2012	1.40	30	280	260	2.00	2

Set 1	Wounding Loss	10.%	10.%	10.%	Yearling Male 10.%
Set 2	Wounding Loss	10.%	10.%	10.%	Yearling Male 10.%

Bio-Year	Young/100 Fems Age 1 - 1	Young/100 Fems Age 2 - 13	Young/100 Fems Disabled	Sex Ratio: 50 : 50
1991	0.0	180.0	0.0	
1992	0.0	180.0	0.0	
1993	0.0	180.0	0.0	
1994	0.0	180.0	0.0	
1995	0.0	180.0	0.0	
1996	0.0	180.0	0.0	
1997	0.0	180.0	0.0	
1998	0.0	180.0	0.0	
1999	0.0	180.0	0.0	
2000	0.0	180.0	0.0	
2001	0.0	180.0	0.0	
2002	0.0	180.0	0.0	
2003	0.0	180.0	0.0	
2004	0.0	180.0	0.0	
2005	0.0	180.0	0.0	
2006	0.0	180.0	0.0	
2007	0.0	180.0	0.0	
2008	0.0	180.0	0.0	
2009	0.0	180.0	0.0	
2010	0.0	180.0	0.0	
2011	0.0	180.0	0.0	
2012	0.0	180.0	0.0	
2013	0.0	0.0	0.0	

Table 1. Population Size During Bio-Year for A5242012 ten year new.GN1 02/29/2012 12:32 pm

Bio-Year	Start	Pre-Season	Post Season	End	%Growth
2002	9500	6456	5946	5233	14.6
2003	10889	6402	5867	5261	-0.4
2004	10845	6441	5885	4981	-4.3
2005	10373	6096	5579	4841	-3.1
2006	10048	6834	6363	5177	1.0
2007	10149	5980	5443	5048	2.1
2008	10358	6362	5880	5066	-2.9
2009	10057	6266	5739	5074	-0.9
2010	9965	6577	5999	4186	-16.5
2011	8321	5417	4874	3535	-14.7
2012	7101	4505	3878	2836	-60.1

Table 2. Preseason Natural Mortality for A5242012 ten year new.GN1 02/29/2012 12:32 pm

Bio-Year	Sub-Adults	Adult Males	Adult Females	Total	% of Pop
2002	2894	48	102	3044	32.0
2003	4327	49	111	4487	41.2
2004	4244	50	110	4404	40.6
2005	4125	47	105	4277	41.2
2006	3098	36	79	3213	32.0
2007	4002	57	110	4169	41.1
2008	3850	50	97	3996	38.6
2009	3643	52	96	3791	37.7
2010	3253	49	86	3388	34.0
2011	2791	42	71	2904	34.9
2012	2496	36	63	2595	36.5

Table 3. Harvest Mortality for A5242012 ten year new.GN1 02/29/2012 12:32 pm

Bio-Year	Sub-Adults	Adult Males	Adult Females	Total	% of Pop
2002	14	310	140	464	7.2
2003	25	284	177	486	7.6
2004	17	313	175	505	7.8
2005	23	281	166	470	7.7
2006	46	229	154	429	6.3
2007	21	284	183	488	8.2
2008	33	249	156	438	6.9
2009	15	267	197	479	7.6
2010	25	289	212	526	8.0
2011	23	284	186	493	9.1
2012	30	280	260	570	12.7

Table 4. Harvest Percentages for A5242012 ten year new.GN1 02/29/2012 12:32 pm

Bio-Year	Sub-Adults	Adult Males	Adult Females	Total	Yearling Males
2002	1.1	18.6	3.9	7.19	28.0
2003	1.9	18.2	5.0	7.59	4.1
2004	1.3	19.6	5.0	7.84	39.7
2005	1.8	18.8	5.0	7.71	3.9
2006	2.2	15.5	4.7	6.28	36.9
2007	2.2	16.7	5.5	8.16	5.7
2008	2.3	15.0	4.8	6.88	2.9
2009	1.1	15.4	6.2	7.64	3.8
2010	1.5	16.0	6.8	8.00	3.6
2011	1.7	18.6	7.3	9.10	27.3
2012	2.8	22.3	11.9	12.65	27.1

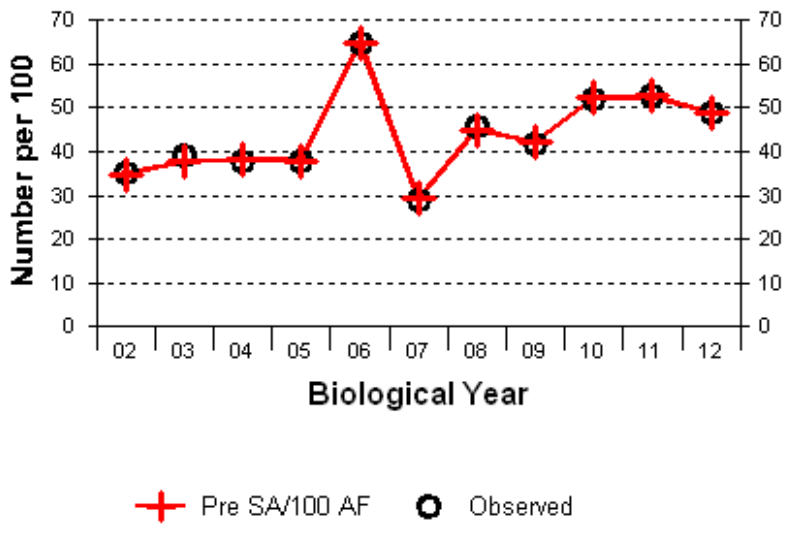
Table 5. Postseason Natural Mortality for A5242012 ten year new.GN1 02/29/2012 12:32 pm

Bio-Year	Sub-Adults	Adult Males	Adult Females	Total	% of Pop
2002	257	200	256	713	12.0
2003	273	116	218	607	10.3
2004	436	150	318	904	15.4
2005	373	107	258	738	13.2
2006	741	128	316	1186	18.6
2007	170	66	159	395	7.3
2008	406	111	297	814	13.8
2009	319	94	252	665	11.6
2010	967	239	607	1813	30.2
2011	791	186	363	1340	27.5
2012	622	151	269	1042	26.9

Table 6. Preseason Ratios for A5242012 ten year new.GN1 02/29/2012 12:32 pm

Bio-Year	Subadults /100 1+F	2+ Males /100 1+F	Yr. Males /100 1+F	Ad Males /100 1+F
2002	34.9	36.9	9.9	46.8
2003	37.8	31.0	13.3	44.3
2004	38.2	31.2	14.2	45.5
2005	38.0	32.0	12.9	44.9
2006	64.9	32.4	13.1	45.5
2007	29.3	32.1	19.3	51.3
2008	45.1	39.6	11.6	51.2
2009	42.3	38.9	15.5	54.4
2010	52.2	41.7	15.7	57.4
2011	52.7	47.5	12.3	59.8
2012	49.0	45.7	11.7	57.5

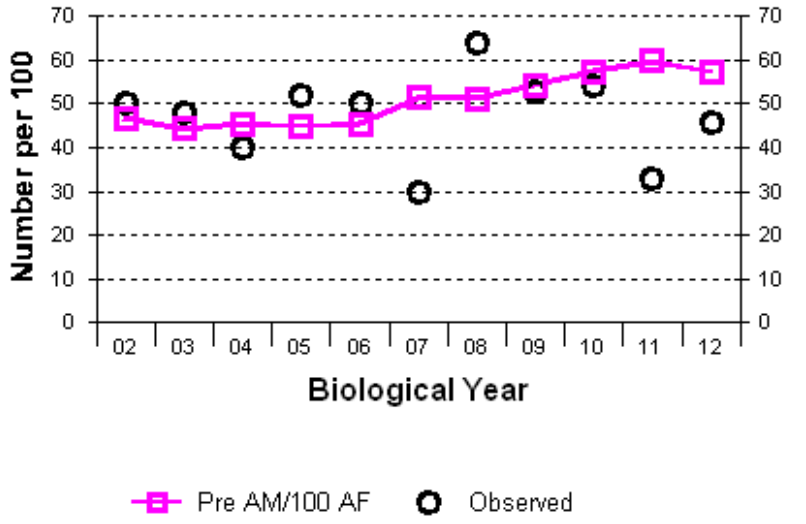
POP-II (V1.2.9) Graph 6. Preseason Ratios



ten year new.GN1, 02/29/2012 12:32 pm, Correlation (R) = 0.999, GOF = 0.989

YR	SIM	OBS
02	35	35
03	38	39
04	38	38
05	38	38
06	65	65
07	29	29
08	45	46
09	42	42
10	52	52
11	53	53
12	49	49
	AVERAGES	
of Col.	44	
of Pair	44	44

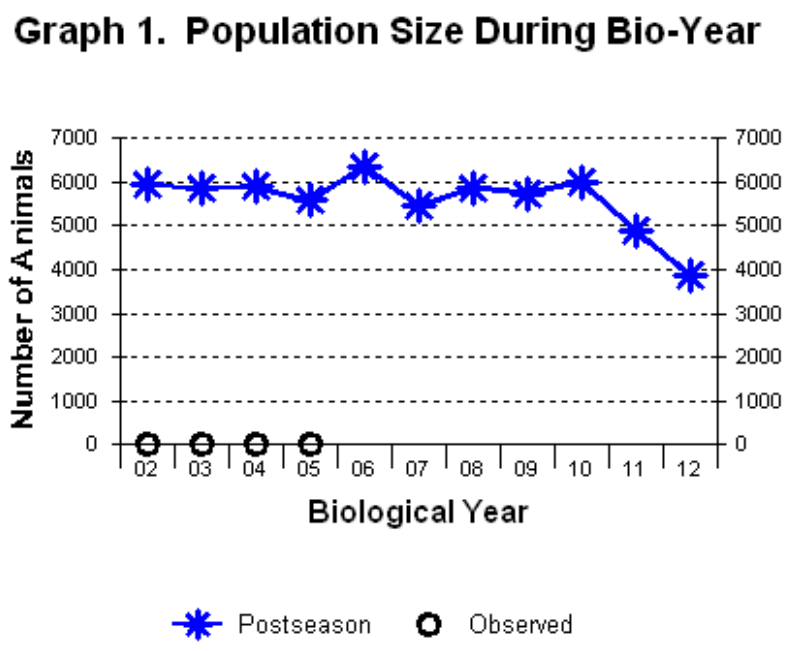
POP-II (V1.2.9) Graph 6. Preseason Ratios



ten year new.GN1, 02/29/2012 12:32 pm, Correlation (R) = -0.167, GOF = 0.744

YR	SIM	OBS
02	47	50
03	44	48
04	45	40
05	45	52
06	46	50
07	51	30
08	51	64
09	54	53
10	57	54
11	60	33
12	57	46
	AVERAGES	
of Col.	51	
of Pair	51	47

POP-II (V1.2.9) Graph 1. Population Size During Bio-Year

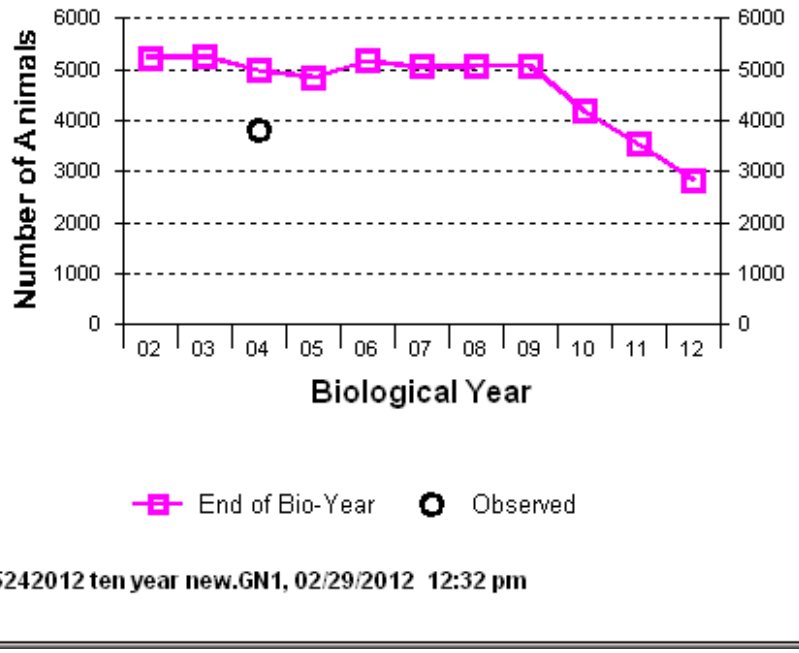


YR	SIM	OBS
02	5946	0
03	5867	0
04	5885	0
05	5579	0
06	6363	-----
07	5443	-----
08	5880	-----
09	5739	-----
10	5999	-----
11	4874	-----
12	3878	-----

AVERAGES

of Col.	5587	
of Pair	5819	0

POP-II (V1.2.9) Graph 1. Population Size During Bio-Year

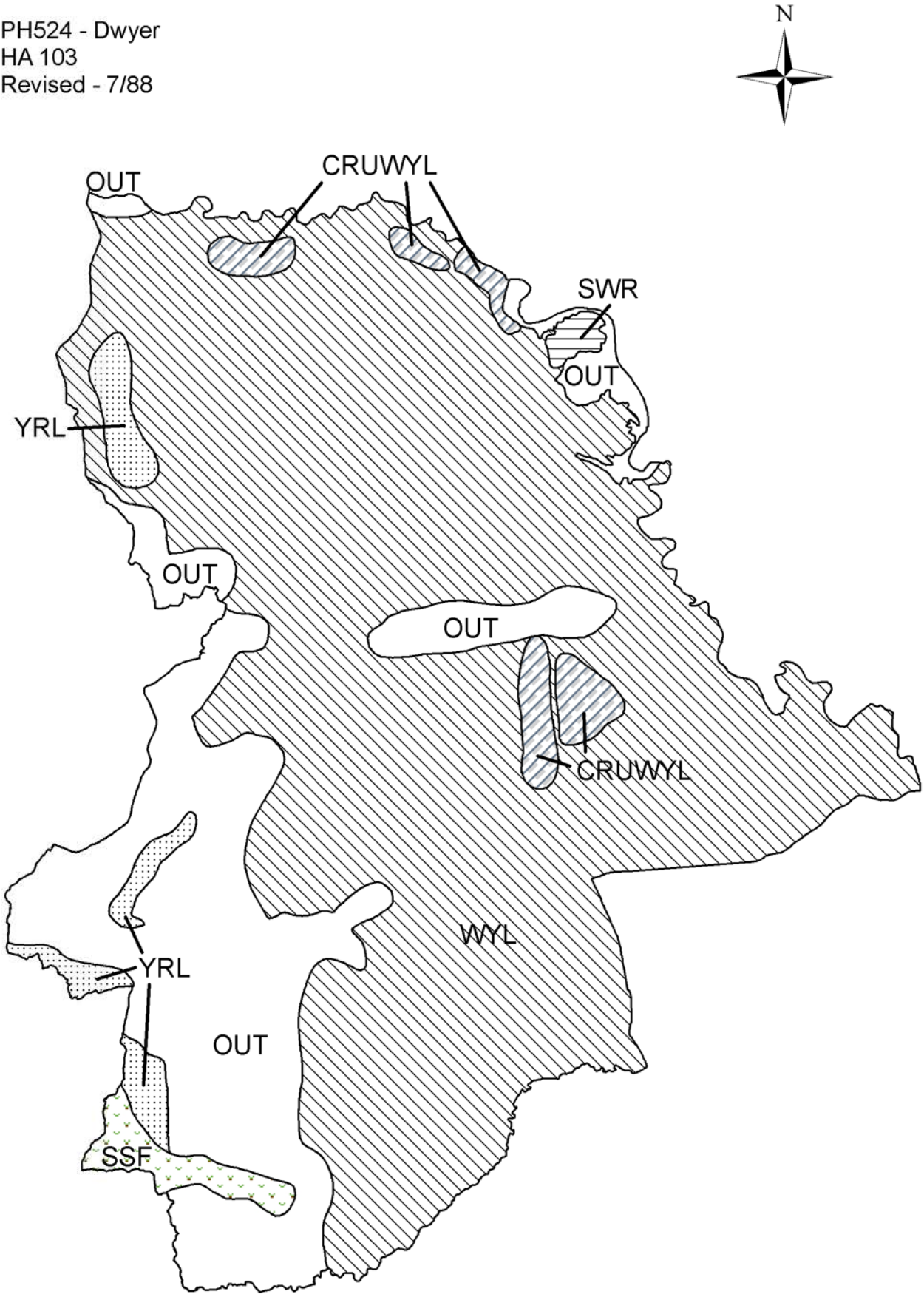


YR	SIM	OBS
02	5233	-----
03	5261	-----
04	4981	3812
05	4841	-----
06	5177	-----
07	5048	-----
08	5066	-----
09	5074	-----
10	4186	-----
11	3535	-----
12	2836	-----

AVERAGES

of Col.	4658

PH524 - Dwyer
HA 103
Revised - 7/88



2011 - JCR Evaluation Form

SPECIES: Pronghorn | PERIOD: 6/1/2011 - 5/31/2012

HERD: PR525 - MEDICINE BOW

HUNT AREAS: 30-32, 41-42, 46-48 | PREPARED BY: LEE KNOX

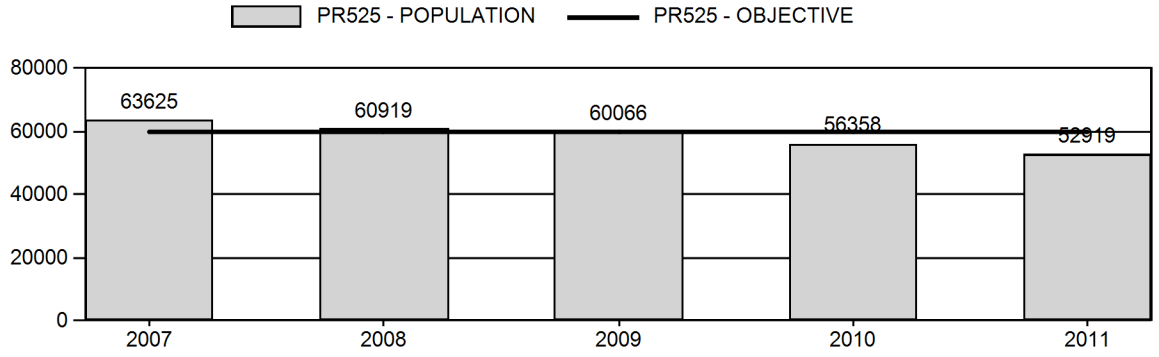
	2006 - 2010 Average	2011	2012 Proposed
Population:	60,942	52,919	52,597
Harvest:	7,214	7,239	7,000
Hunters:	7,688	8,034	7,500
Hunter Success:	94%	90%	93%
Active Licenses:	8,490	8,833	7,800
Active License Percent:	85%	82%	90 %
Recreation Days:	23,701	26,698	26,000
Days Per Animal:	3.3	3.7	3.7
Males per 100 Females	47	58	
Juveniles per 100 Females	64	59	

Population Objective:	60,000
Management Strategy:	Recreational
Percent population is above (+) or below (-) objective:	-11.8%
Number of years population has been + or - objective in recent trend:	3
Model Date:	3/1/2012

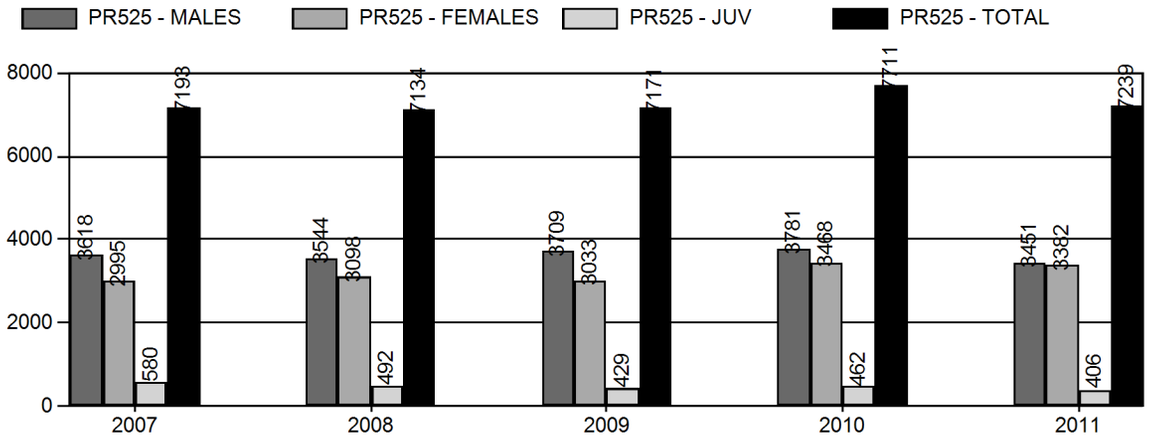
Proposed harvest rates (percent of pre-season estimate for each sex/age group):

	JCR Year	Proposed
Females ≥ 1 year old:	11.3%	11.8%
Males ≥ 1 year old:	23.4%	20.9%
Juveniles (< 1 year old):	2.4%	2.0%
Total:	11.87%	10.51%
Proposed change in post-season population:	-4.0%	-1.4%

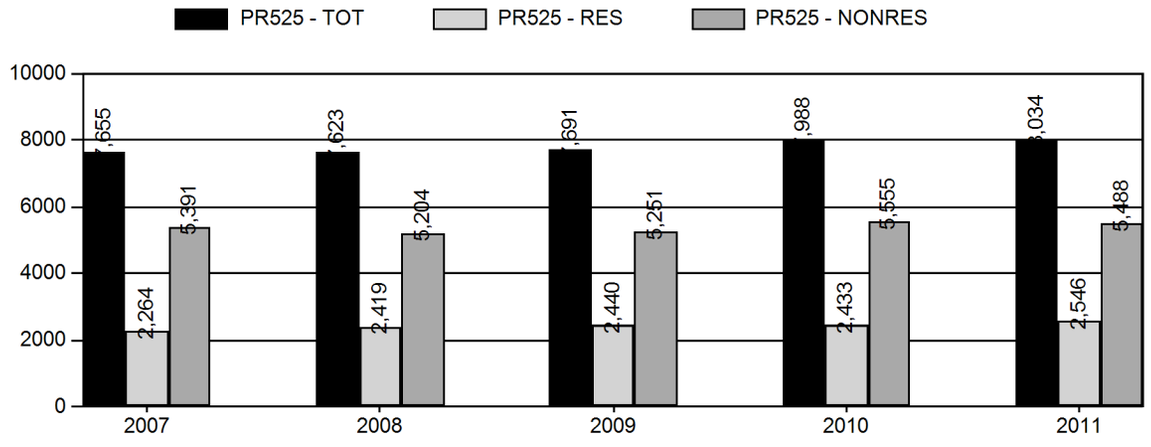
Population Size - Postseason



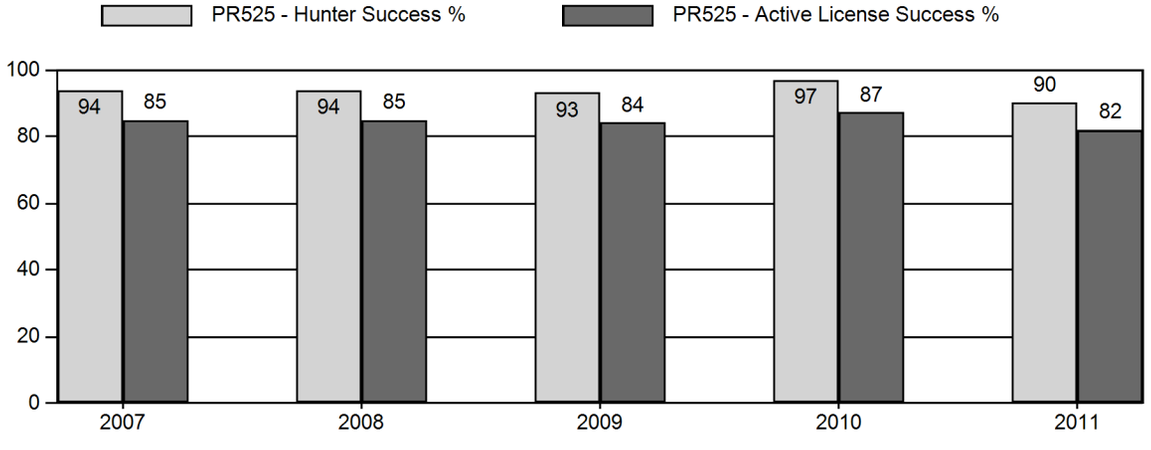
Harvest



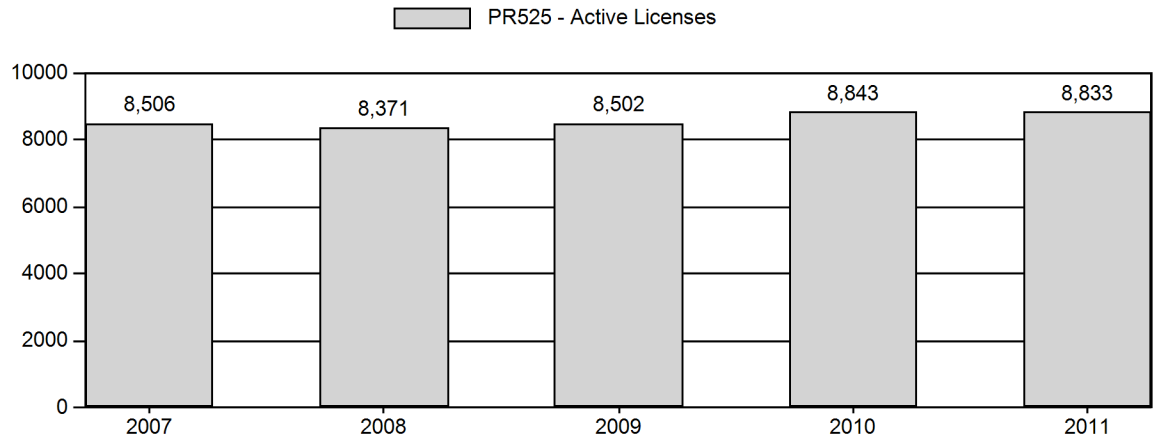
Number of Hunters



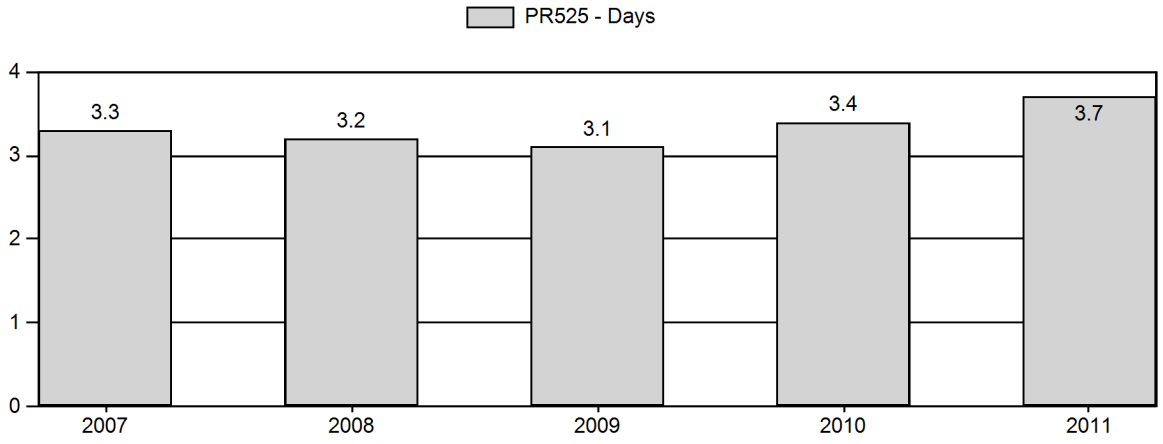
Harvest Success



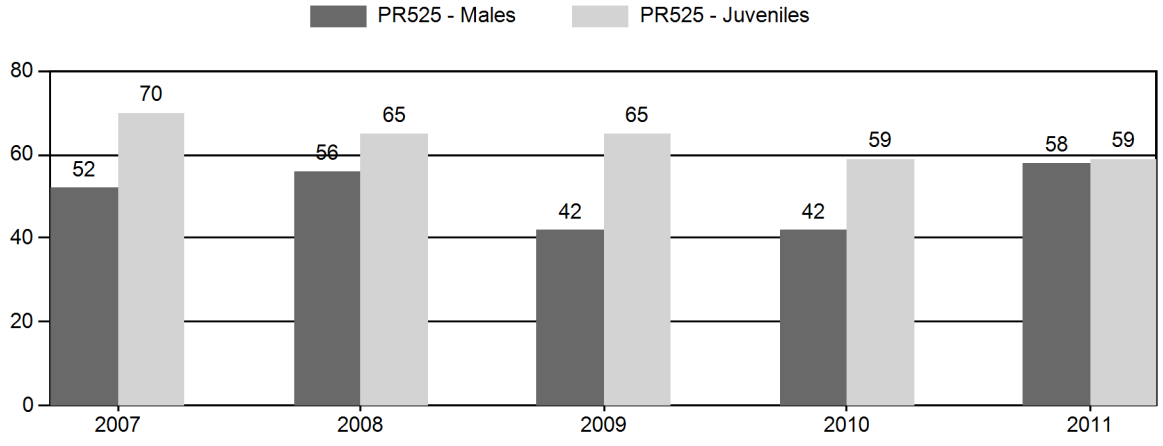
Active Licenses



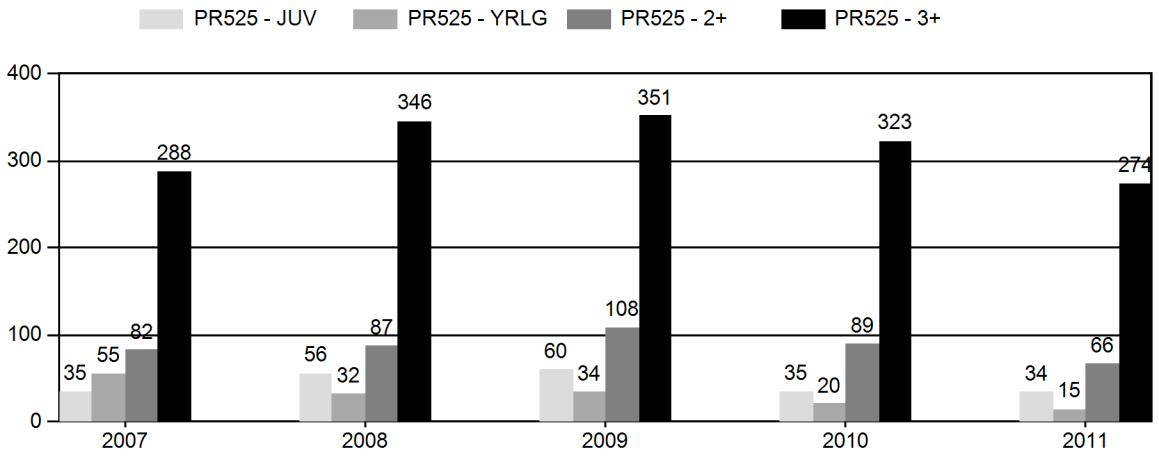
Days Per Animal Harvested



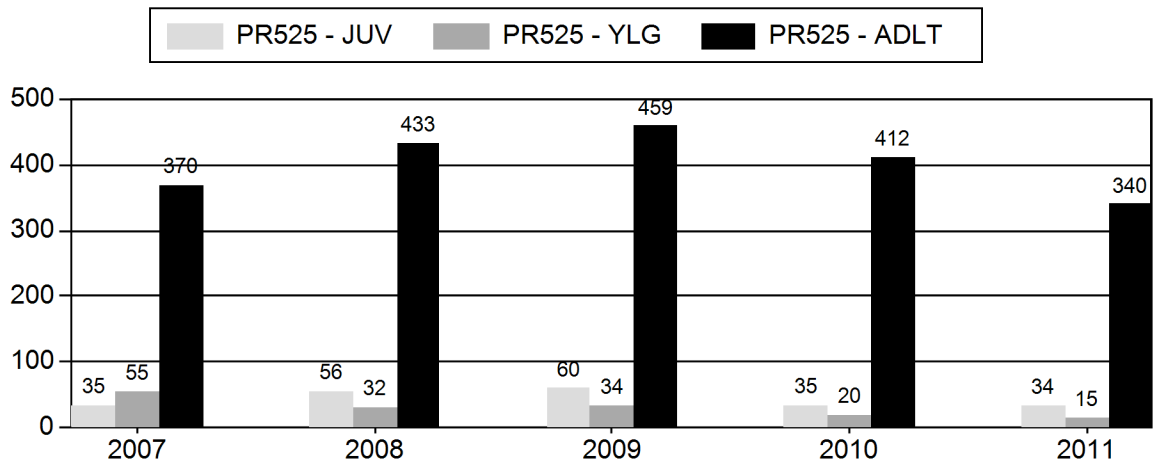
Preseason Animals per 100 Females



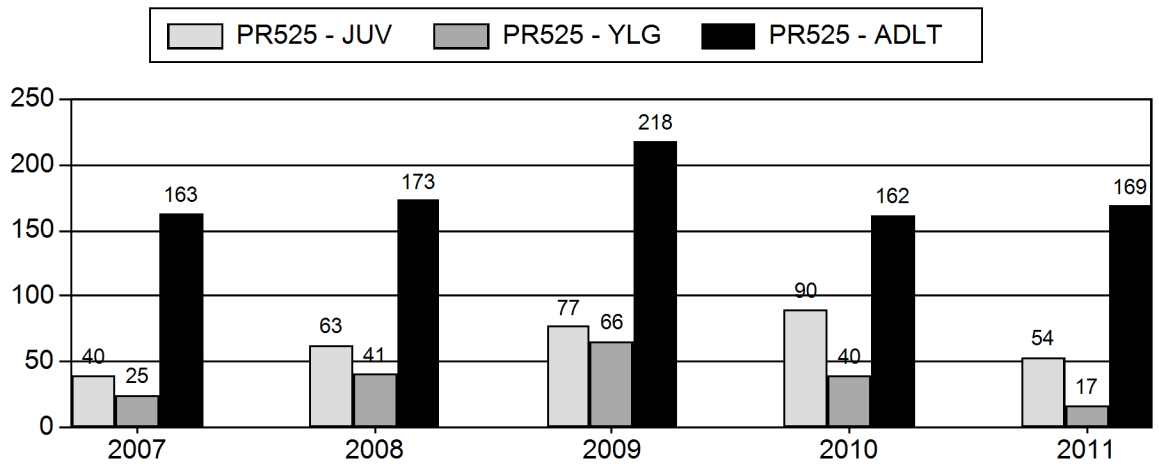
Age Structure of Field Checked Males



Age Structure Data (Field and Laboratory) - Male



Age Structure Data (Field and Laboratory) - Female



2007 - 2011 Preseason Classification Summary

for Pronghorn Herd PR525 - MEDICINE BOW

		MALES				FEMALES		JUVENILES				Males to 100 Females				Young to		
Year	Pre Pop	Ylg	Adult	Total	%	Total	%	Total	%	Tot Cls	Cls Obj	Ylng	Adult	Total	Conf Int	100 Fem	Conf Int	100 Adult
2007	71,539	579	805	1,384	24%	2,643	45%	1,849	31%	5,876	2,752	22	30	52	± 3	70	± 3	46
2008	68,748	427	906	1,333	25%	2,383	45%	1,547	29%	5,263	2,469	18	38	56	± 3	65	± 3	42
2009	67,963	451	940	1,391	20%	3,290	48%	2,149	31%	6,830	2,289	14	29	42	± 0	65	± 0	46
2010	64,840	446	840	1,286	21%	3,072	50%	1,809	29%	6,167	1,978	15	27	42	± 0	59	± 0	42
2011	60,868	299	994	1,293	27%	2,222	46%	1,306	27%	4,821	2,104	13	45	58	± 3	59	± 3	

2011 HUNTING SEASONS

PR525 - MEDICINE BOW

Hunt Area	Add'l Hunt Areas	Type	Quota	Season Dates	Limitations
30		ARCH		08/15 - 10/09	Refer to Section 3 of this Chapter
30		Type 1	1000	10/10 - 10/31	Any
30		Type 6	1100	10/10 - 10/31	Reduced Price doe/fawn
31	32,41,42,46,47,48,	ARCH		08/15 - 09/25	Refer to Section 3 of this Chapter
31		Type 1	450	09/25 - 10/31	Any
31		Type 6	400	09/25 - 10/31	Reduced Price doe/fawn
32		Type 1	500	09/25 - 10/31	Any
32		Type 6	400	09/25 - 10/31	Reduced Price doe/fawn
41		Type 1	50	09/25 - 10/31	Any
41		Type 6	50	09/25 - 10/31	Reduced Price doe/fawn
42		Type 1	650	09/25 - 10/31	Any
42		Type 6	300	09/25 - 10/31	Reduced Price doe/fawn
42		Type 7	200	10/05 - 10/31	Reduced Price doe/fawn
46		Type 1	225	09/25 - 10/31	Any
46		Type 2	225	10/05 - 10/31	Any
46		Type 6	300	09/25 - 10/31	Reduced Price doe/fawn
46		Type 7	250	10/05 - 10/31	Reduced Price doe/fawn
47		Type 1	1000	09/25 - 10/31	Any
47		Type 2	350	10/05 - 10/31	Any
47		Type 6	700	09/25 - 10/31	Reduced Price doe/fawn
47		Type 7	400	10/05 - 10/31	Reduced Price doe/fawn
48		Type 1	300	09/25 - 10/31	Any
48		Type 2	200	10/05 - 10/31	Any
48		Type 6	375	09/25 - 10/31	Reduced Price doe/fawn
48		Type 7	375	10/05 - 10/31	Reduced Price doe/fawn

Area	Type	Active Lic/ Htrs	Buck	Doe	Fawn	Total	Success	Days/ Harvest	Days	Licenses Sold
2011										
30 LA PRELE										
	Type 1	902	610	35	17	662	73.40%	4.4	2896	997
	Type 6	945	0	675	99	774	81.90%	4.2	3260	1080
Pooled Total		1768 (1847)*	610	710	116	1436	81.20% (77.7%)*	4.3	6156	
Pooled Resident		410	172	52	52	276	67.30%	4.8	1316	
Pooled Nonresident		1358	438	658	64	1160	85.40%	4.2	4840	
31 HAT SIX										
	Type 1	423	270	35	0	305	72.10%	5.6	1700	448
	Type 6	364	0	304	21	325	89.30%	4.4	1428	396
Pooled Total		708 (787)*	270	339	21	630	89.00% (80.1%)*	5	3128	
Pooled Resident		166	70	17	7	94	56.60%	11.3	1063	
Pooled Nonresident		542	200	322	14	536	98.90%	3.9	2065	
32 BATES CREEK										
	Type 1	460	337	9	0	346	75.20%	6	2088	501
	Type 6	355	0	246	61	307	86.50%	3.6	1115	400
Pooled Total		778 (815)*	337	255	61	653	83.90% (80.1%)*	4.9	3203	
Pooled Resident		229	116	17	8	141	61.60%	10	1406	
Pooled Nonresident		549	221	238	53	512	93.30%	3.5	1797	
41 LARAMIE PEAK										
	Type 1	40	29	0	0	29	72.50%	3.3	97	51
	Type 6	42	0	20	3	23	54.80%	4.6	106	50
Pooled Total		66 (82)*	29	20	3	52	78.80% (63.4%)*	3.9	203	
Pooled Resident		31	19	0	0	19	61.30%	4.7	90	
Pooled Nonresident		35	10	20	3	33	94.30%	3.4	113	
42 LARAMIE PLAINS										
	Type 1	609	510	9	0	519	85.20%	3	1567	651
	Type 6	268	0	180	26	206	76.90%	3.8	785	299
	Type 7	137	0	112	7	119	86.90%	3.6	427	196
Pooled Total		873 (1014)*	510	301	33	844	96.70% (83.2%)*	3.3	2779	
Pooled Resident		144	48	25	0	73	50.70%	3	216	
Pooled Nonresident		729	462	276	33	771	105.80%	3.3	2563	
46 KYLE										
	Type 1	210	152	5	0	157	74.80%	3.1	491	228
	Type 2	209	187	6	0	193	92.30%	3.3	633	226
	Type 6	257	0	166	37	203	79.00%	2.6	535	299
	Type 7	232	0	186	23	209	90.10%	3.3	700	250
Pooled Total		776 (908)*	339	363	60	762	98.20% (83.9%)*	3.1	2359	

Pooled Resident		201	121	44	6	171	85.10%		3.1	530	
Pooled Nonresident		575	218	319	54	591	102.80%		3.1	1829	
47 SHIRLEY BASIN											
	Type 1	926	709	43	0	752	81.20%		2.8	2085	1004
	Type 2	338	246	37	0	283	83.70%		3.6	1013	350
	Type 6	629	0	488	45	533	84.70%		2.9	1521	698
	Type 7	356	0	267	38	305	85.70%		3.1	942	400
Pooled Total		2150 (2249)*	955	835	83	1873	87.10%	(83.3%)*	3	5561	
Pooled Resident		1101	633	263	0	896	81.40%		3.1	2740	
Pooled Nonresident		1049	322	572	83	977	93.10%		2.9	2821	
48 LEO-HANNA											
	Type 1	270	224	15	0	239	88.50%		2.8	680	302
	Type 2	195	177	7	0	184	94.40%		3.2	596	203
	Type 6	333	0	294	11	305	91.60%		2.3	697	376
	Type 7	333	0	243	18	261	78.40%		5.1	1336	375
Pooled Total		985 (1131)*	401	559	29	989	100.40%	(87.4%)*	3.3	3309	
Pooled Resident		272	191	71	0	262	96.30%		2.9	771	
Pooled Nonresident		713	210	488	29	727	102.00%		3.5	2538	
2011 Hunt Area Total		8104 (8833)*	3451	3382	406	7239	89.30%	(82.0%)*	3.7	26698	9780
2011 Herd Total		8034 (8833)*	3451	3382	406	7239	90.10%	(82.0%)*	3.7	26698	9780

*Active Licenses

2007 - 2011 Harvest Age Structure

for Pronghorn Herd PR525 - MEDICINE BOW

	Males										Females										Herd
Year	Juv	1	% 1 *	2	3 ^	% 3 **	Total Aged ++	Not Aged +++	Unk	Total Chkd	Juv	1	% 1 *	2	3 ^	% 3 **	Total Aged ++	Not Aged +++	Unk	Total Chkd	Total
2007	35	55	13%	82	267	66%	439	21	1	461	40	25	13%	22	106	69%	193	35	0	228	689
2008	56	32	7%	87	328	73%	503	18	19	540	63	41	19%	34	131	64%	269	8	110	387	927
2009	60	34	7%	108	162	53%	364	189	22	575	77	66	23%	45	88	44%	276	85	132	493	1,068
2010	35	20	5%	89	127	54%	271	196	34	501	90	40	20%	42	66	45%	238	54	109	401	902
2011	34	15	4%	66	209	72%	324	65	23	412	54	17	9%	38	93	63%	202	38	73	313	725

* Percent of aged animals (including unaged adults but excluding juveniles) 1 1/2 years old

^ Number of animals three years old and older. Animals aged older than three (excluding unaged adults) are lumped into this three plus category

** Percent of aged animals (not including juveniles or unaged adults) three years old or older

++ includes juveniles

+++ Unaged adults - unaged animals older than yearlings

MEDICINE BOW PRONGHORN
(PR525)
Hunt Areas 30, 31, 32, 41, 42, 46, 47, 48
2012 Hunting Seasons

Hunt Area	Type	Dates of Opens	Season Closes	Limitations
30	1	Oct. 10	Oct. 31	Limited quota; **800** licenses any antelope
	6	Oct. 10	Oct. 31	Limited quota; **800** licenses doe or fawn
31	1	Sept. 25	Oct. 31	Limited quota; ~~450~~ **350** licenses any antelope
	6	Sept. 25	Oct. 31	Limited quota; 400 licenses doe or fawn
32	1	Sept. 25	Oct. 31	Limited quota; ~~500~~ **400** licenses any antelope
	6	Sept. 25	Oct. 31	Limited quota; 400 licenses doe or fawn
41	1	Sept. 25	Oct. 31	Limited quota; 50 licenses any antelope
	6	Sept. 25	Oct. 31	Limited quota; 50 licenses doe or fawn
42	1	Sept. 25	Oct. 31	Limited quota; 650 licenses any antelope
	6	Sept. 25	Oct. 31	Limited quota; ~~300~~ **250** licenses doe or fawn
	7	Oct. 5	Oct. 31	Limited quota; ~~200~~ **150** licenses doe or fawn
46	1	Sept. 25	Oct. 31	Limited quota; 225 licenses any antelope
	2	Oct. 5	Oct. 31	Limited quota; 225 licenses any antelope
	6	Sept. 25	Oct. 31	Limited quota; 300 licenses doe or fawn
	7	Oct. 5	Oct. 31	Limited quota; 250 licenses doe or fawn
47	1	Sept. 25	Oct. 31	Limited quota; ~~1,000~~ **900** licenses any antelope
	2	Oct. 5	Oct. 31	Limited quota; ~~350~~ **300** licenses any
	6	Sept. 25	Oct. 31	Limited quota; ~~700~~ **650** licenses doe or fawn
	7	Oct. 5	Oct. 31	Limited quota; ~~400~~ **350** licenses doe or fawn
48	1	Sept. 25	Oct. 31	Limited quota; 300 licenses any antelope
	2	Oct. 5	Oct. 31	Limited quota; 200 licenses any antelope
	6	Sept. 25	Oct. 31	Limited quota; 375 licenses doe or fawn
	7	Oct. 5	Oct. 31	Limited quota; 375 licenses doe or
Archery				
30,31,32,41, 42,46,47,48		Aug. 15		Refer to Section 3 of this Chapter

SUMMARY OF CHANGES BY LICENSE NUMBER

Area	Type	Change from 2010
30	1	-200
	6	-300
31	1	-100
	6	0
32	1	-100
	6	0
41	1	0
	6	0
42	1	0
	6	-50
	7	-50
46	1	0
	2	0
	6	0
	7	0
47	1	-100
	2	-50
	6	-50
	7	-50
48	1	0
	2	0
	6	0
	7	0
Herd Totals	**1 & 2**	**-550**
	6 & 7	**-500**

Changes for 2012

- decrease Area 30 Type 1s by 200 and Type 6's by 300
- decrease Area 31 Type 1s by 100
- decrease Area 32 Type 1s by 100
- decrease Area 42 Type 6s and Type 7s by 50 each
- decrease Area 47 Type 1s by 100 and Type 2s, Type 6s and Type 7s by 50 each

Management Evaluation*:*

The Medicine Bow Herd Unit is under recreational management. Habitat conditions in the Medicine Bow Herd have warranted a reduction in population size below objective level. Our

harvest strategy has been to stabilize and then reduce the herd. It appears we started driving the population below the objective of 60,000 in 2010 and have continued to do so with the 2011 post season population estimate at 52,919. If we continue this harvest pressure we may drive the population near 10,000 below objective. There is also concern that we have impacted buck availability and quality. We are losing a HMA and we already lost some access in other areas because of wind farm restrictions. Therefore we are decreasing harvest throughout the herd unit. Hunt Area 47 has seen a decrease in buck quality but over all hunter success and harvest has been good. Hunt Area 47 is the largest hunt area in the herd unit and we will slowly decrease Hunt Area 47 license Types until the population levels out. We will be losing significant hunter access in Hunt Area 30 and therefore decreasing both type 1s and 6s. We propose decreasing Type 1s by 100 each in Area 32 and 31 due to hunter success declining from 88% to 75% and 95% to 72% respectively.

Population: The goal of population management for the Medicine Bow Pronghorn Herd is to reduce pronghorn numbers in order to address habitat concerns. The Medicine Bow Pronghorn Herd had been above or at the objective of 60,000 from 2004 through 2009. We brought the population below objective in 2010 and have continued to bring it down with the 2011 post season population estimate at 52,919. Herd unit buck:doe ratios are at 58:100 and at a 5 year low. The observed fawn:doe ratio has remained low the last 2 years at 59:100. Fawn:doe ratios were 65:100 in 2008 and 2009.

Harvest: Since 1998, harvests have more than tripled from 2,176 to over 7,700. Some 8,000 hunters participated in the 2011 hunt which is an increase of just over 300 from 2010. Success decreased from 87% in 2010 to 82% in 2011. Total harvest decreased from 7700 in 2010 to 7200 in 2011. With the decreases in quotas we hope to bring harvest success near the 5 year average of 94% and stabilize the population near 53,000.

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MEDICINE BOW PRONGHORN - 2011 Seasons Model
Data from 1989 to 2012 Simulation from 1989 to 2012

Age Class	Init Pop. Male	Init Pop. Female	Presn Male	Mort% Female	Postsn Mort% Male	Postsn Mort% Female	Effort Set 1 Male	Effort Set 1 Female	Effort Set 2 Male	Effort Set 2 Female
0	7800.0	7800.0	50.0	50.0	45.0	35.0	1.00	1.00	1.00	1.00
1	2200.0	2984.0	2.0	2.0	5.0	5.0	1.00	1.00	0.20	1.00
2	1800.0	2611.0	2.0	2.0	5.0	5.0	1.00	1.00	1.00	1.00
3	1543.0	1803.0	2.0	2.0	5.0	5.0	1.00	1.00	1.00	1.00
4	1000.0	1472.0	2.0	2.0	5.0	5.0	1.00	1.00	1.00	1.00
5	300.0	500.0	2.0	2.0	5.0	5.0	1.00	1.00	1.00	1.00
6	300.0	1200.0	2.0	2.0	15.0	5.0	1.00	1.00	1.00	1.00
7	70.0	951.0	2.0	2.0	25.0	10.0	1.00	1.00	1.00	1.00
8	20.0	648.0	2.0	2.0	35.0	15.0	1.00	1.00	1.00	1.00
9	5.0	493.0	2.0	2.0	50.0	20.0	1.00	1.00	1.00	1.00
10	3.0	311.0	2.0	2.0	70.0	25.0	1.00	1.00	1.00	1.00
11	1.0	249.0	2.0	2.0	80.0	50.0	1.00	1.00	1.00	1.00
12	0.0	163.0	2.0	2.0	98.0	75.0	1.00	1.00	1.00	1.00
13	0.0	78.0	2.0	2.0	100.0	100.0	1.00	1.00	1.00	1.00

Sum = 36305.0 Estimated Sum = 84000 Subadults: Ages 0 to 0

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MSI Function is Linear

Bio-Year	Preseason MSI	Harvest // Des. Pop Size in NA Subadults#	Males#	Females#	Postseason MSI	Effort & Wound Set Used
1989	0.80	475	2837	2695	1.00	1
1990	0.62	520	2970	2697	1.00	1
1991	0.75	737	4232	3964	1.00	1
1992	0.95	901	5188	6032	2.00	1
1993	1.30	512	3679	3959	1.00	1
1994	1.07	281	2315	1847	1.00	2
1995	1.13	134	1755	960	1.00	2
1996	0.85	73	1574	489	0.80	1
1997	1.05	104	1869	782	1.00	2
1998	0.96	37	1703	436	1.75	2
1999	1.07	95	2005	658	1.20	2
2000	0.93	112	2595	849	1.30	2
2001	1.02	158	2304	889	1.20	1
2002	1.00	145	2600	1100	0.55	2
2003	0.87	296	3119	1930	0.60	2
2004	0.90	434	3358	2045	1.00	2
2005	0.90	422	3320	2397	1.30	1
2006	0.98	374	3088	2615	1.20	1
2007	0.85	584	3643	2967	1.20	1
2008	0.91	478	3553	3086	1.10	1
2009	0.91	435	3729	3015	1.10	1
2010	1.02	462	3781	3468	1.15	1
2011	1.03	410	3450	3366	1.00	1
2012	0.98	350	3000	2900	1.00	1

Set 1	Wounding Loss	10.%	10.%	10.%	Yearling Male 10.%
Set 2	Wounding Loss	10.%	10.%	10.%	Yearling Male 10.%

Bio-Year	Young/100 Fems Age 1 - 1	Young/100 Fems Age 2 - 13	Young/100 Fems Disabled	Sex Ratio: 50 : 50
1990	0.0	145.0	0.0	
1991	0.0	145.0	0.0	
1992	0.0	145.0	0.0	
1993	0.0	145.0	0.0	
1994	0.0	145.0	0.0	
1995	0.0	145.0	0.0	
1996	0.0	145.0	0.0	
1997	0.0	145.0	0.0	
1998	0.0	145.0	0.0	
1999	0.0	145.0	0.0	
2000	0.0	145.0	0.0	
2001	0.0	145.0	0.0	
2002	0.0	145.0	0.0	
2003	0.0	145.0	0.0	
2004	0.0	145.0	0.0	
2005	0.0	145.0	0.0	
2006	0.0	145.0	0.0	
2007	0.0	145.0	0.0	
2008	0.0	145.0	0.0	
2009	0.0	145.0	0.0	
2010	0.0	145.0	0.0	
2011	0.0	145.0	0.0	
2012	0.0	145.0	0.0	
2013	0.0	145.0	0.0	

POP-II (V1.2.9) Simulation Output Tables for PR525_11.gn1, 03/03/2012 09:37 am

Table 1. Population Size During Bio-Year for PR525_11.gn1 03/03/2012 09:37 am

Bio-Year	Start	Pre-Season	Post Season	End	%Growth
1989	84000	68796	62188	50452	3.5
1990	86954	75013	68207	55042	7.1
1991	93119	78015	68188	55592	1.8
1992	94774	75106	61773	39793	-22.8
1993	73200	50451	41486	34811	-13.9
1994	63010	47178	42291	34808	-1.2
1995	62228	45949	42815	35553	3.1
1996	64169	51403	49053	41548	12.3
1997	72074	55175	52145	43022	6.3
1998	76623	59669	57275	38924	-6.8
1999	71445	53213	50179	39504	-0.1
2000	71353	55808	51897	39235	-0.3
2001	71121	54059	50372	39406	1.1
2002	71896	54863	50634	45441	11.4
2003	80078	64220	58341	51550	11.6
2004	89353	71414	64993	52910	4.4
2005	93250	74144	67391	51128	-2.5
2006	90932	70426	63742	50064	-2.2
2007	88892	71539	63625	49264	-2.5
2008	86659	68748	60919	48654	-1.1
2009	85708	67963	60066	47845	-1.4
2010	84521	64840	56358	44657	-5.4
2011	79979	60868	52919	43212	-4.0
2012	76755	59472	52597	42863	-1.4

Table 2. Preseason Natural Mortality for PR525_11.gn1 03/03/2012 09:37 am

Bio-Year	Sub-Adults	Adult Males	Adult Females	Total	% of Pop
1989	14438	268	498	15204	18.1
1990	11316	228	397	11941	13.7
1991	14279	312	514	15105	16.2
1992	18611	401	655	19667	20.8
1993	21714	359	675	22749	31.1
1994	15087	251	494	15832	25.1
1995	15492	265	521	16279	26.2
1996	12162	204	401	12766	19.9
1997	16026	307	566	16899	23.4
1998	16129	291	535	16955	22.1
1999	17399	281	552	18232	25.5
2000	14810	245	490	15544	21.8
2001	16262	258	543	17062	24.0
2002	16245	250	538	17033	23.7
2003	15067	262	529	15857	19.8
2004	17011	322	606	17939	20.1
2005	18153	333	620	19105	20.5
2006	19504	348	654	20506	22.6
2007	16502	298	553	17353	19.5
2008	17015	313	584	17911	20.7
2009	16859	309	576	17745	20.7
2010	18705	336	640	19681	23.3
2011	18191	311	609	19111	23.9
2012	16436	287	560	17283	22.5

Table 3. Harvest Mortality for PR525_11.gn1 03/03/2012 09:37 am

Bio-Year	Sub-Adults	Adult Males	Adult Females	Total	% of Pop
1989	475	2837	2695	6007	8.7
1990	520	2970	2697	6187	8.2
1991	737	4232	3964	8933	11.5
1992	901	5188	6032	12121	16.1
1993	512	3679	3959	8150	16.2
1994	281	2315	1847	4443	9.4
1995	134	1755	960	2849	6.2
1996	73	1574	489	2136	4.2
1997	104	1869	782	2755	5.0
1998	37	1703	436	2176	3.6
1999	95	2005	658	2758	5.2
2000	112	2595	849	3556	6.4
2001	158	2304	889	3351	6.2
2002	145	2600	1100	3845	7.0
2003	296	3119	1930	5345	8.3
2004	434	3358	2045	5837	8.2
2005	422	3320	2397	6139	8.3
2006	374	3088	2615	6077	8.6
2007	584	3643	2967	7194	10.1
2008	478	3553	3086	7117	10.4
2009	435	3729	3015	7179	10.6
2010	462	3781	3468	7711	11.9
2011	410	3450	3366	7226	11.9
2012	350	3000	2900	6250	10.5

Table 4. Harvest Percentages for PR525_11.gn1 03/03/2012 09:37 am

Bio-Year	Sub-Adults	Adult Males	Adult Females	Total	Yearling Males
1989	2.2	17.2	8.8	8.73	30.4
1990	2.1	16.3	8.5	8.25	31.6
1991	3.1	20.7	11.7	11.45	32.6
1992	4.4	25.1	17.8	16.14	30.0
1993	4.4	27.3	15.6	16.15	7.1
1994	2.1	20.1	8.2	9.42	6.6
1995	1.1	15.3	4.3	6.20	7.9
1996	0.4	13.4	2.1	4.16	27.0
1997	0.7	13.1	3.0	4.99	10.1
1998	0.2	11.4	1.6	3.65	6.6
1999	0.6	15.6	2.6	5.18	3.2
2000	0.7	20.1	3.3	6.37	6.6
2001	1.0	18.6	3.4	6.20	27.8
2002	0.9	21.2	4.2	7.01	7.3
2003	1.5	21.1	6.5	8.32	11.8
2004	2.1	19.1	6.2	8.17	11.5
2005	1.9	18.3	7.1	8.28	30.2
2006	1.8	17.7	8.0	8.63	25.4
2007	2.6	21.2	9.3	10.06	26.1
2008	2.3	21.1	9.8	10.35	29.0
2009	2.2	22.3	9.7	10.56	29.5
2010	2.6	23.4	11.3	11.89	30.2
2011	2.4	23.4	11.6	11.87	27.9
2012	2.0	20.9	10.4	10.51	31.3

Table 5. Postseason Natural Mortality for PR525_11.gn1 03/03/2012 09:37 am

Bio-Year	Sub-Adults	Adult Males	Adult Females	Total	% of Pop
1989	8454	770	2513	11736	18.9
1990	9846	901	2418	13165	19.3

1991	9195	1037	2364	12596	18.5
1992	15663	2154	4163	21980	35.6
1993	4452	726	1498	6675	16.1
1994	5121	733	1629	7484	17.7
1995	4712	790	1759	7262	17.0
1996	5240	693	1573	7505	15.3
1997	5754	1021	2348	9122	17.5
1998	12202	1744	4405	18352	32.0
1999	7209	901	2566	10675	21.3
2000	8796	959	2906	12662	24.4
2001	7416	878	2672	10966	21.8
2002	3539	401	1253	5192	10.3
2003	4619	514	1659	6791	11.6
2004	8126	961	2996	12083	18.6
2005	11296	1252	3716	16263	24.1
2006	9547	1068	3062	13677	21.5
2007	10408	1015	2938	14362	22.6
2008	8736	984	2545	12265	20.1
2009	8675	1073	2473	12221	20.3
2010	8033	1127	2541	11701	20.8
2011	6672	903	2132	9707	18.3
2012	6689	894	2151	9734	18.5

Table 6. Preseason Ratios for PR525_11.gn1 03/03/2012 09:37 am

Bio-Year	Subadults /100 1+F	2+ Males /100 1+F	Yr. Males /100 1+F	Ad Males /100 1+F
1989	70.7	37.5	16.3	53.8
1990	79.6	39.3	18.1	57.5
1991	70.5	40.9	19.8	60.7
1992	60.8	42.8	18.3	61.2
1993	46.2	49.4	3.8	53.2
1994	58.1	37.7	13.3	50.9
1995	52.9	35.6	15.3	50.9
1996	71.0	37.1	13.7	50.9
1997	55.0	34.7	19.4	54.2
1998	64.0	40.3	14.2	54.5
1999	59.9	43.7	7.2	50.8
2000	66.0	37.0	13.1	50.1
2001	60.0	34.3	13.2	47.5
2002	61.7	33.3	13.2	46.6
2003	65.6	29.6	19.9	49.6
2004	62.9	32.2	20.9	53.1
2005	65.6	37.5	16.2	53.7
2006	62.0	39.7	13.5	53.2
2007	69.8	39.8	14.1	53.8
2008	64.7	38.0	15.5	53.6
2009	65.0	37.8	15.8	53.7
2010	58.5	36.7	15.9	52.6
2011	59.1	36.7	14.2	51.0
2012	61.1	35.3	16.1	51.3

Table 7. Postseason Ratios for PR525_11.gn1 03/03/2012 09:37 am

Bio-Year	Subadults /100 1+F	2+ Males /100 1+F	Yr. Males /100 1+F	Ad Males /100 1+F
1989	76.3	33.6	14.7	48.3
1990	85.8	35.6	16.4	52.0
1991	78.2	36.3	17.5	53.8
1992	72.0	38.6	16.5	55.1
1993	53.1	41.7	3.2	44.9
1994	62.3	29.8	13.8	43.6
1995	54.8	29.1	15.3	44.4

1996	72.4	32.4	12.0	44.4
1997	56.4	28.7	19.3	48.0
1998	65.0	34.5	14.0	48.5
1999	61.2	36.2	7.1	43.3
2000	67.9	27.6	12.9	40.5
2001	61.6	28.3	10.9	39.2
2002	64.0	24.4	13.0	37.4
2003	69.4	21.0	20.0	41.0
2004	65.9	24.0	21.0	45.0
2005	69.7	32.5	14.1	46.5
2006	66.7	35.0	11.9	47.0
2007	75.5	34.0	12.0	46.0
2008	70.7	32.7	13.4	46.1
2009	71.0	31.9	13.4	45.3
2010	64.9	31.1	13.5	44.6
2011	66.0	31.3	12.1	43.4
2012	67.4	30.7	14.0	44.6

Table 8. End of Year Ratios for PR525_11.gn1 03/03/2012 09:37 am

Bio-Year	Subadults /100 Adlts	Subadults /100 1+F	Yr. Males /100 1+F	Ad Males /100 1+F
1989	33.6	50.4	15.3	50.0
1990	36.7	56.2	17.0	53.4
1991	33.0	51.0	18.1	54.7
1992	10.9	17.0	17.5	55.7
1993	23.7	34.3	3.3	44.7
1994	28.3	40.6	14.2	43.4
1995	24.8	35.8	15.8	44.3
1996	36.6	52.9	12.4	44.5
1997	25.1	37.2	20.2	48.4
1998	15.5	23.3	15.3	50.2
1999	24.6	35.6	7.5	44.3
2000	26.1	36.9	13.6	41.5
2001	25.6	35.9	11.5	40.0
2002	38.1	52.5	13.3	37.7
2003	39.6	56.1	20.6	41.6
2004	29.9	43.8	22.1	46.4
2005	25.6	38.0	14.9	48.3
2006	26.0	38.6	12.5	48.3
2007	29.7	43.7	12.6	47.3
2008	29.6	43.5	13.9	46.9
2009	30.0	43.7	13.9	45.5
2010	26.8	38.7	14.0	44.6
2011	30.1	43.3	12.6	43.5
2012	30.6	44.3	14.5	44.9

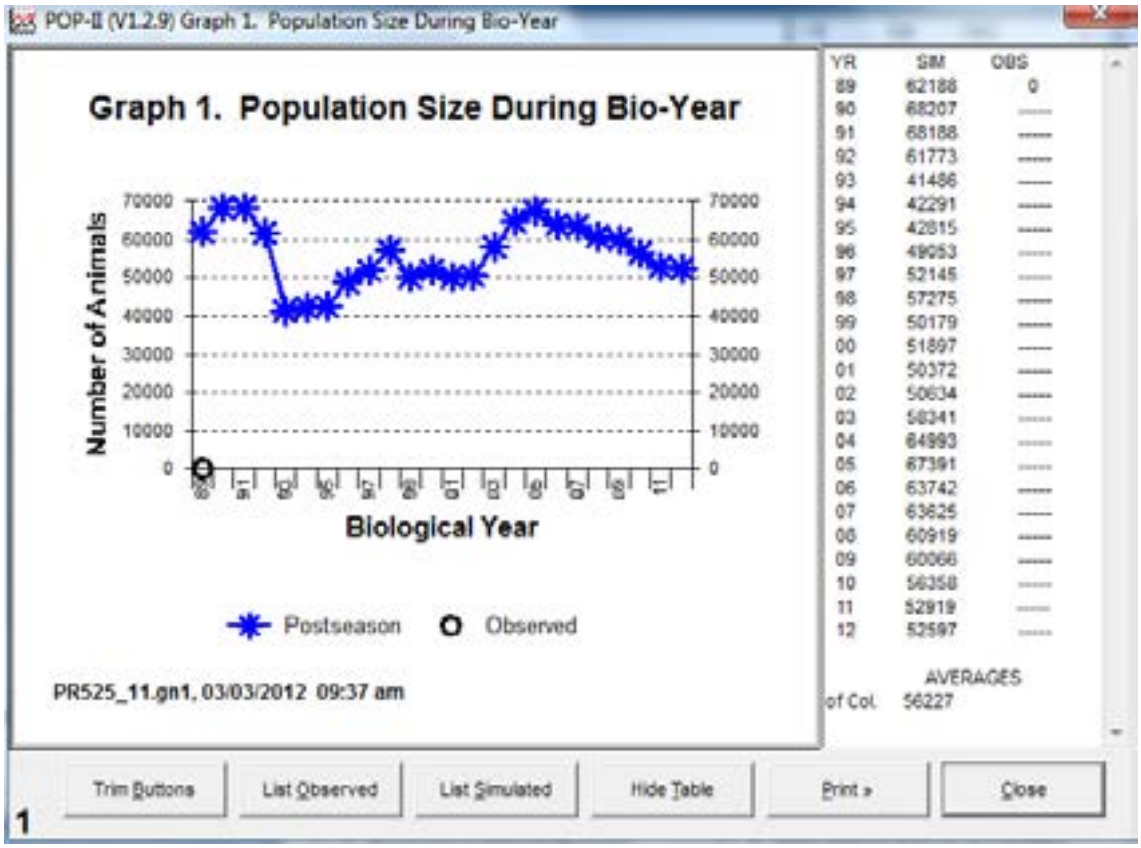
Table 9. Reproduction at Start of Bio-Year for PR525_11.gn1 03/03/2012 09:37 am

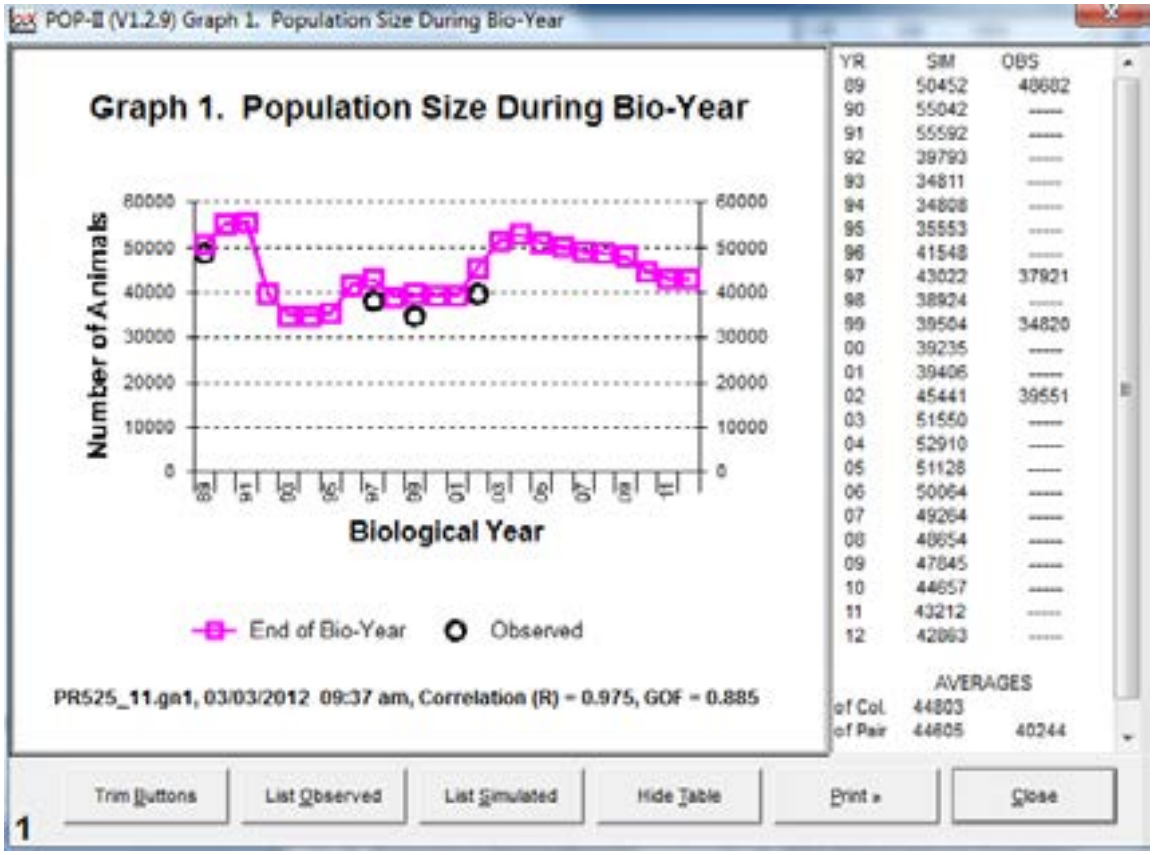
Bio-Year	Young / 100 AF 1 +	Sub-Ad. / 100 AF 1 +	Total Young	Total Sub-Adult	Total Females 1 +
1989	116	116	36094	36094	31150
1990	114	114	36502	36502	32043
1991	111	111	38077	38077	34260
1992	114	114	39181	39181	34492
1993	129	129	33407	33407	25976
1994	122	122	28199	28199	23065
1995	119	119	27420	27420	23072
1996	121	121	28616	28616	23564
1997	113	113	30526	30526	26947
1998	121	121	33601	33601	27848
1999	126	126	32522	32522	25806

2000	121	121	31849	31849	26320
2001	120	120	31886	31886	26600
2002	121	121	32490	32490	26887
2003	114	114	34636	34636	30382
2004	112	112	37803	37803	33673
2005	117	117	40340	40340	34423
2006	119	119	39804	39804	33370
2007	119	119	38827	38827	32545
2008	117	117	37395	37395	32078
2009	117	117	37054	37054	31660
2010	117	117	36676	36676	31356
2011	119	119	35323	35323	29577
2012	117	117	33543	33543	28554

Table A. Intra-Annual Natural Survival(%) for PR525_11.gn1 03/03/2012 09:37 am

Bio-Years	Sub Adults	Adult Males	Adult Females	Overall Survival
1989-1990	59.26	93.07	89.80	80.12
1990-1991	59.10	92.55	90.19	79.49
1991-1992	58.86	91.67	90.21	79.98
1992-1993	19.48	83.41	82.49	62.74
1993-1994	58.72	90.31	90.86	82.11
1994-1995	58.64	89.73	89.99	80.44
1995-1996	58.98	90.16	90.25	81.63
1996-1997	66.57	91.15	91.10	82.92
1997-1998	58.85	89.90	89.06	80.92
1998-1999	29.36	84.74	81.79	66.50
1999-2000	51.03	89.82	87.88	77.26
2000-2001	47.02	88.64	86.52	74.06
2001-2002	50.96	89.26	87.56	76.67
2002-2003	76.64	94.07	93.36	88.18
2003-2004	74.63	93.76	92.33	86.77
2004-2005	58.92	91.39	88.65	79.94
2005-2006	47.06	89.58	86.35	74.38
2006-2007	51.12	90.80	88.21	77.21
2007-2008	51.05	90.64	88.14	76.02
2008-2009	54.98	90.73	89.29	78.41
2009-2010	54.86	89.61	89.23	78.03
2010-2011	52.89	88.74	88.69	77.61
2011-2012	58.82	89.97	89.77	80.06


POP-II (V1.2.9) Graph 1. Population Size During Bio-Year
Graph 1. Population Size During Bio-Year
Number of Animals
Biological Year
Postseason
Observed
PR525_11.gn1, 03/03/2012 09:37 am
YR SIM OBS
89 62188 0
90 68207 -----
91 68188 -----
92 61773 -----
93 41486 -----
94 42291 -----
95 42815 -----
96 49053 -----
97 52145 -----
98 57275 -----
99 50179 -----
00 51897 -----
01 50372 -----
02 50634 -----
03 58341 -----
04 64993 -----
05 67391 -----
06 63742 -----
07 63625 -----
08 60919 -----
09 60066 -----
10 56358 -----
11 52919 -----
12 52597 -----
AVERAGES
of Col. 56227
Trim Buttons
List Observed
List Simulated
Hide Table
Print »
Close
1


POP-II (V1.2.9) Graph 1. Population Size During Bio-Year
Graph 1. Population Size During Bio-Year
Number of Animals
Biological Year
End of Bio-Year
Observed
PR525_11.gn1, 03/03/2012 09:37 am, Correlation (R) = 0.975, GOF = 0.885
YR SIM OBS
89 50452 48682
90 55042 -----
91 55592 -----
92 39793 -----
93 34811 -----
94 34808 -----
95 35553 -----
96 41548 -----
97 43022 37921
98 38924 -----
99 39504 34820
00 39235 -----
01 39406 -----
02 45441 39651
03 51550 -----
04 52910 -----
05 51128 -----
06 50064 -----
07 49264 -----
08 48654 -----
09 47845 -----
10 44657 -----
11 43212 -----
12 42863 -----
AVERAGES
of Col. 44803
of Pair 44605 40244
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List Observed
List Simulated
Hide Table
Print »
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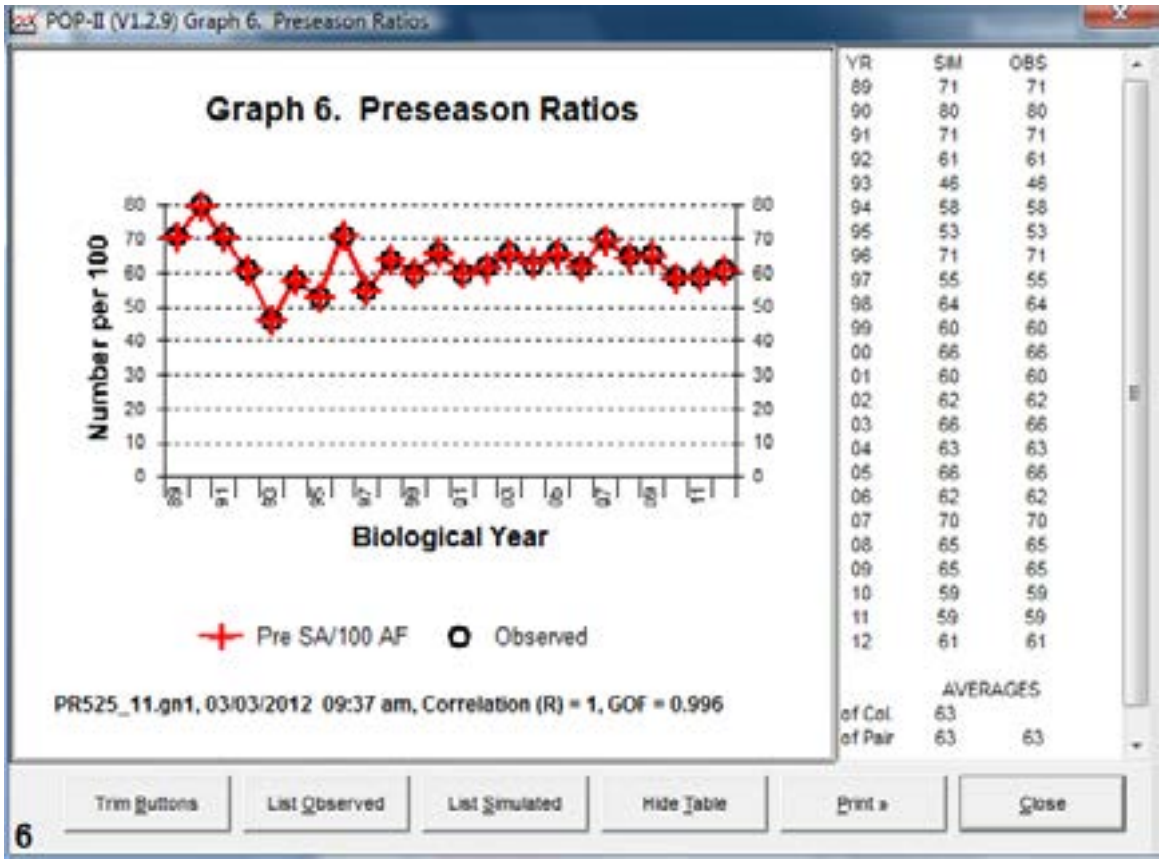
POP-II (V1.2.9) Graph 6. Preseason Ratios
Graph 6. Preseason Ratios
Number per 100
Biological Year
Pre SA/100 AF
Observed
PR525_11.gn1, 03/03/2012 09:37 am, Correlation (R) = 1, GOF = 0.996
YR SIM OBS
89 71 71
90 80 80
91 71 71
92 61 61
93 46 46
94 58 58
95 53 53
96 71 71
97 55 55
98 64 64
99 60 60
00 66 66
01 60 60
02 62 62
03 66 66
04 63 63
05 66 66
06 62 62
07 70 70
08 65 65
09 65 65
10 59 59
11 59 59
12 61 61
AVERAGES
of Col. 63
of Pair 63 63
Trim Buttons
List Observed
List Simulated
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Close
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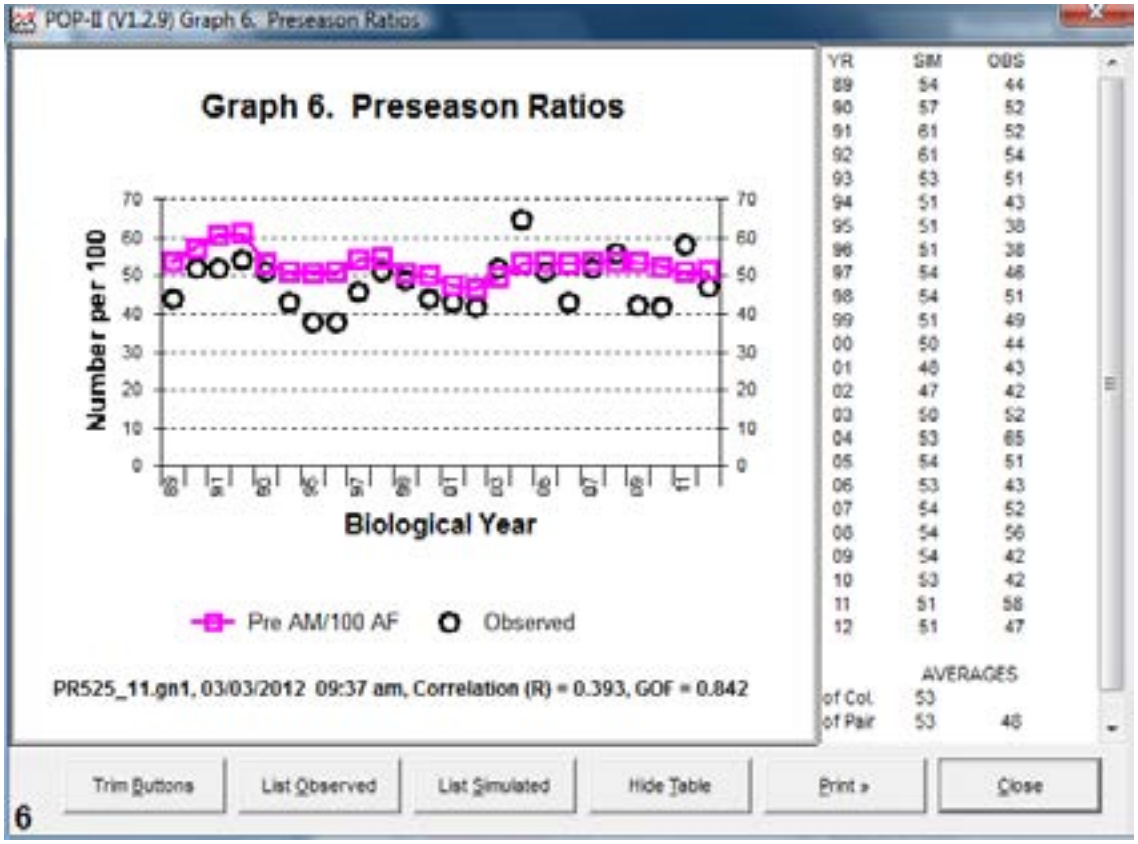
POP-II (V1.2.9) Graph 6. Preseason Ratios
Graph 6. Preseason Ratios
Number per 100
Biological Year
Pre AM/100 AF
Observed
PR525_11.gn1, 03/03/2012 09:37 am, Correlation (R) = 0.393, GOF = 0.842
YR SIM OBS
89 54 44
90 57 52
91 61 52
92 61 54
93 53 51
94 51 43
95 51 38
96 51 38
97 54 46
98 54 51
99 51 49
00 50 44
01 48 43
02 47 42
03 50 52
04 53 65
05 54 51
06 53 43
07 54 52
08 54 56
09 54 42
10 53 42
11 51 58
12 51 47
AVERAGES
of Col. 53
of Pair 53 48
Trim Buttons
List Observed
List Simulated
Hide Table
Print »
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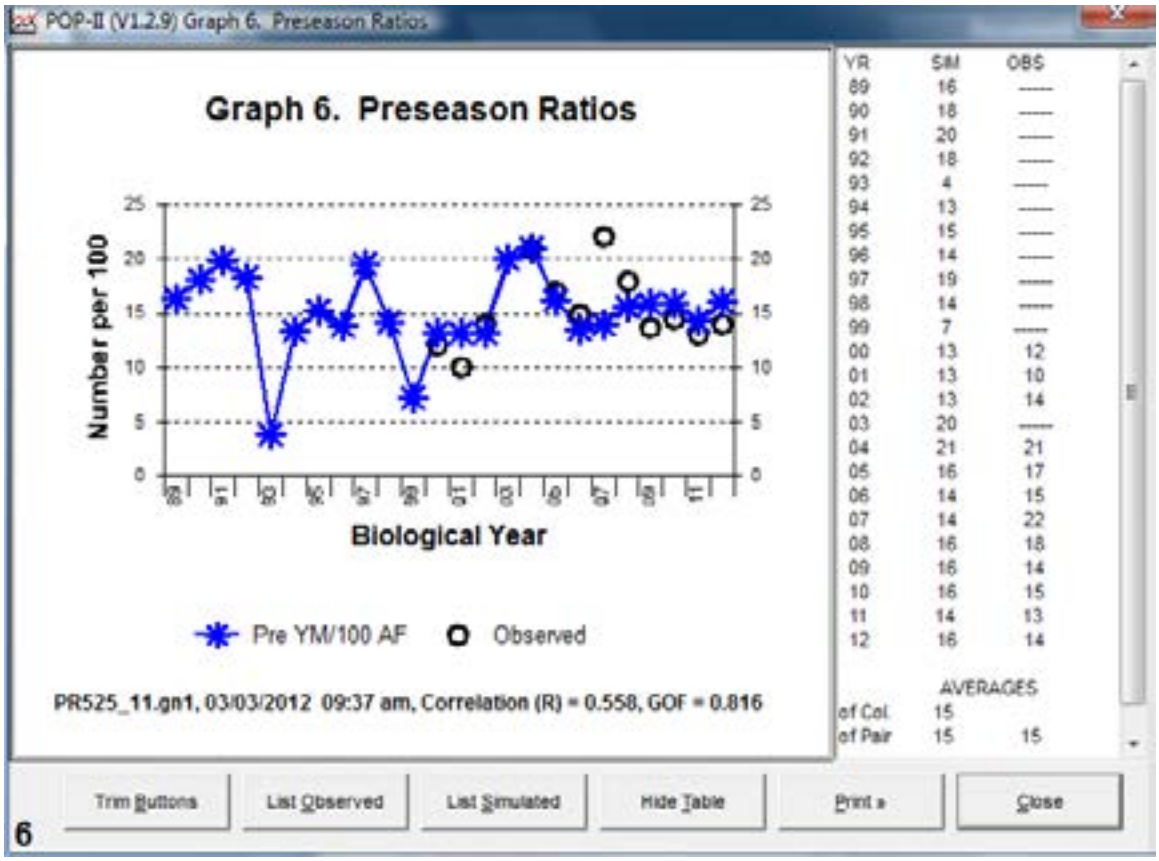
POP-II (V1.2.9) Graph 6. Preseason Ratios
Graph 6. Preseason Ratios
Number per 100
Biological Year
Pre YM/100 AF
Observed
PR525_11.gn1, 03/03/2012 09:37 am, Correlation (R) = 0.558, GOF = 0.816
YR SIM OBS
89 16 ----
90 18 ----
91 20 ----
92 18 ----
93 4 ----
94 13 ----
95 15 ----
96 14 ----
97 19 ----
98 14 ----
99 7 ----
00 13 12
01 13 10
02 13 14
03 20 ----
04 21 21
05 16 17
06 14 15
07 14 22
08 16 18
09 16 14
10 16 15
11 14 13
12 16 14
AVERAGES
of Col. 15
of Pair 15 15
Trim Buttons
List Observed
List Simulated
Hide Table
Print
Close
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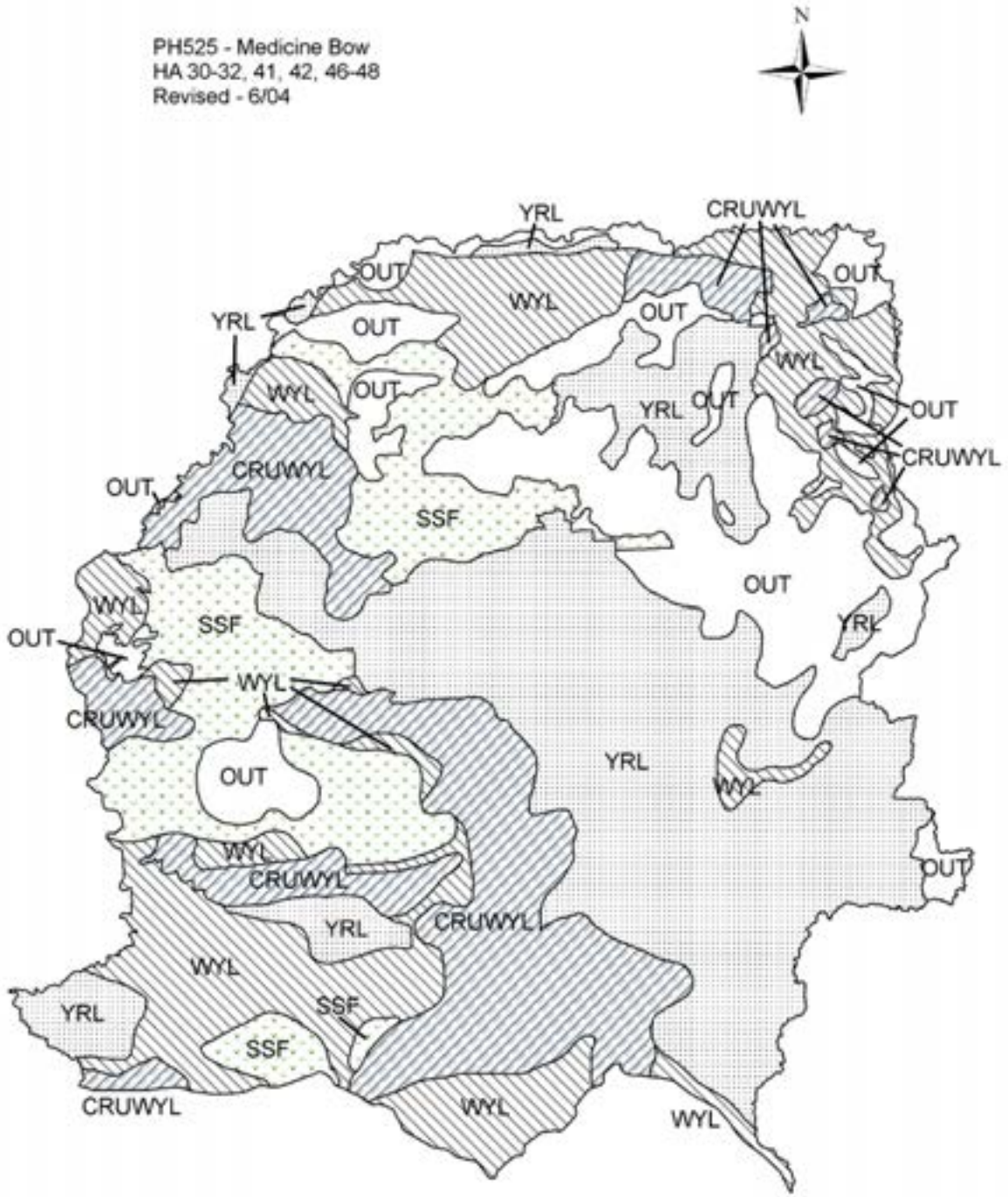

PH525 - Medicine Bow
HA 30-32, 41, 42, 46-48
Revised - 6/04
N
YRL
CRUWYL
OUT
WYL
OUT
OUT
YRL
OUT
WYL
WYL
OUT
YRL
OUT
OUT
CRUWYL
CRUWYL
OUT
SSF
OUT
WYL
SSF
YRL
OUT
WYL
CRUWYL
OUT
YRL
WYL
WYL
CRUWYL
OUT
YRL
CRUWYL
WYL
YRL
SSF
SSF
CRUWYL
WYL
WYL

2011 - JCR Evaluation Form

SPECIES: Pronghorn | PERIOD: 6/1/2011 - 5/31/2012

HERD: PR526 - COOPER LAKE

HUNT AREAS: 43 | PREPARED BY: LEE KNOX

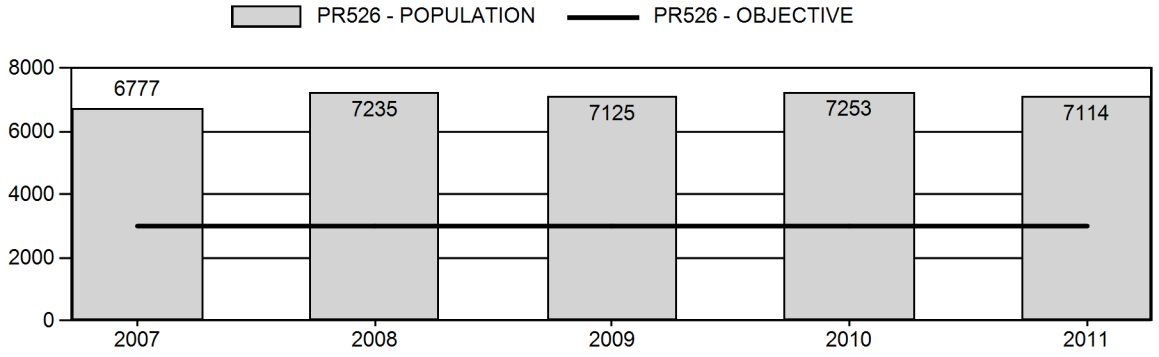
	2006 - 2010 Average	2011	2012 Proposed
Population:	6,937	7,114	7,562
Harvest:	632	654	650
Hunters:	695	746	750
Hunter Success:	91%	88%	87 %
Active Licenses:	746	825	830
Active License Percent:	85%	79%	78 %
Recreation Days:	2,028	2,641	2,300
Days Per Animal:	3.2	4.0	3.5
Males per 100 Females	42	40	
Juveniles per 100 Females	71	75	

Population Objective:	3,000
Management Strategy:	Recreational
Percent population is above (+) or below (-) objective:	137%
Number of years population has been + or - objective in recent trend:	11
Model Date:	2/24/2012

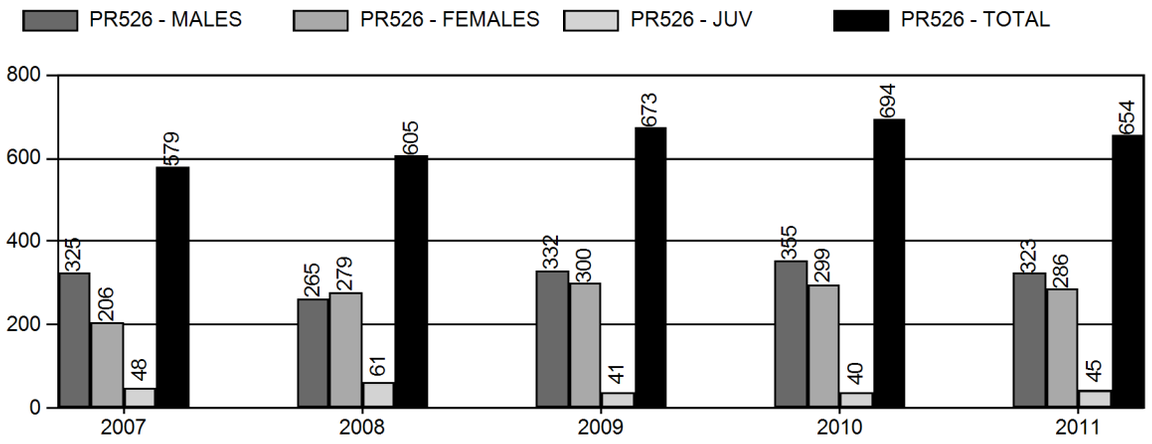
Proposed harvest rates (percent of pre-season estimate for each sex/age group):

	JCR Year	Proposed
Females ≥ 1 year old:	8.7%	8.6%
Males ≥ 1 year old:	15.6%	14.5%
Juveniles (< 1 year old):	1.8%	1.7%
Total:	8.35%	8.00%
Proposed change in post-season population:	4.8%	5.7%

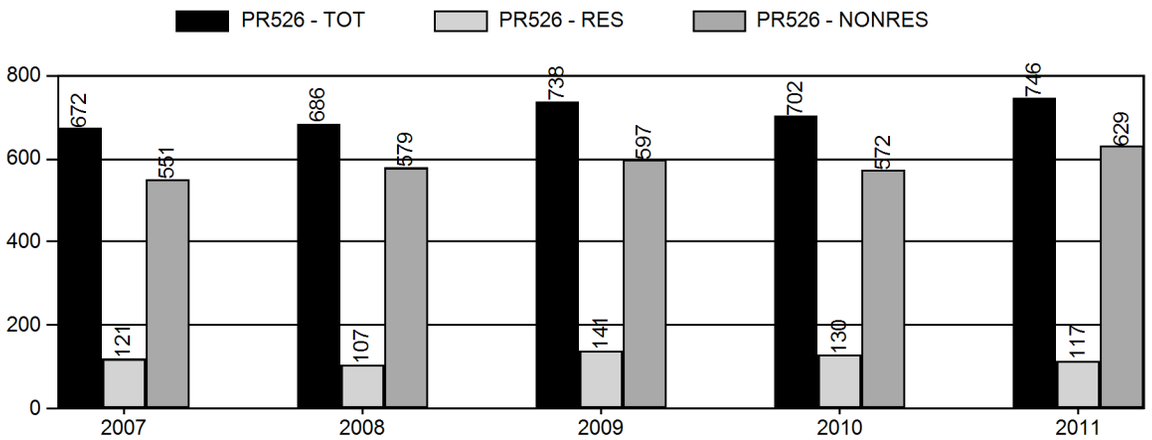
Population Size - Postseason



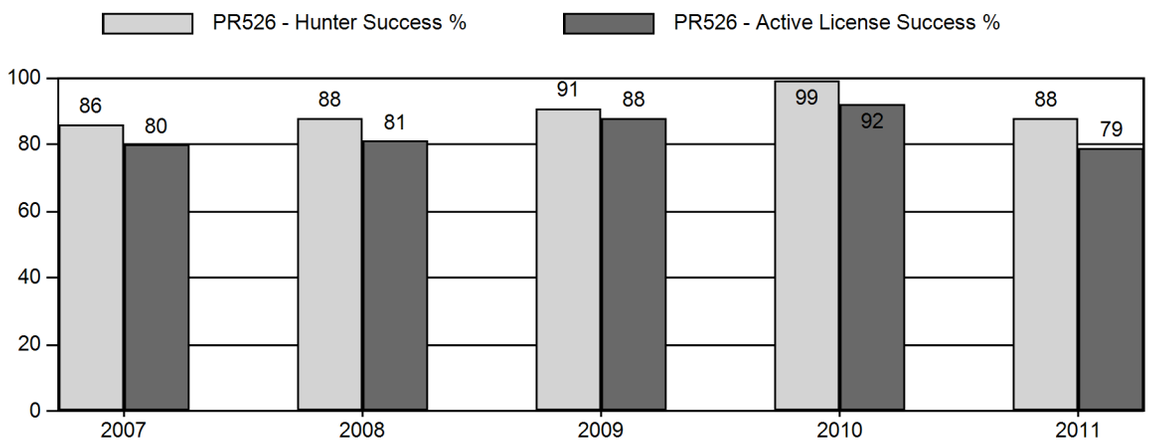
Harvest



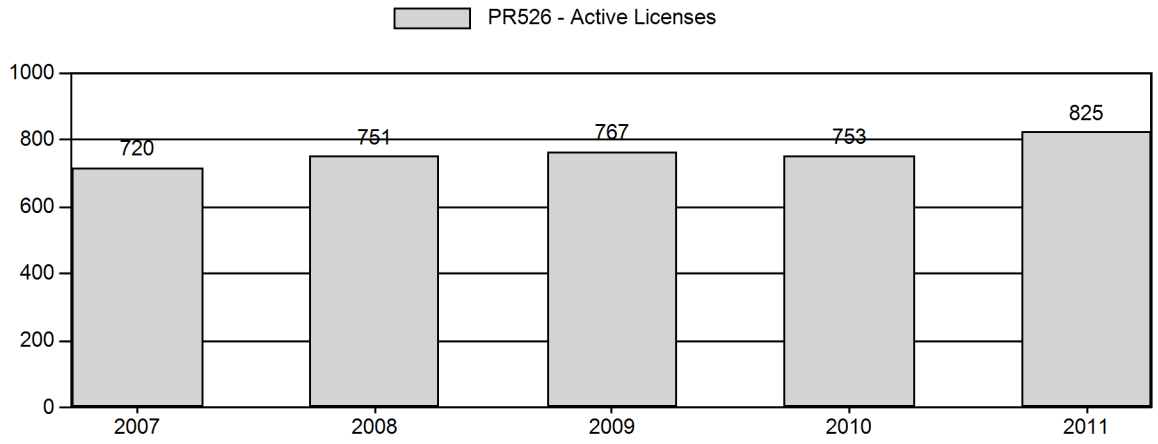
Number of Hunters



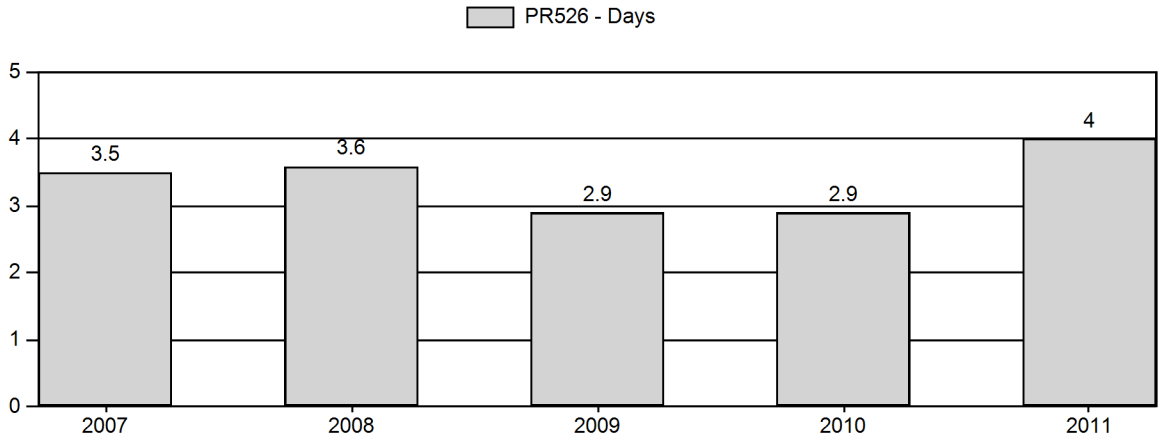
Harvest Success



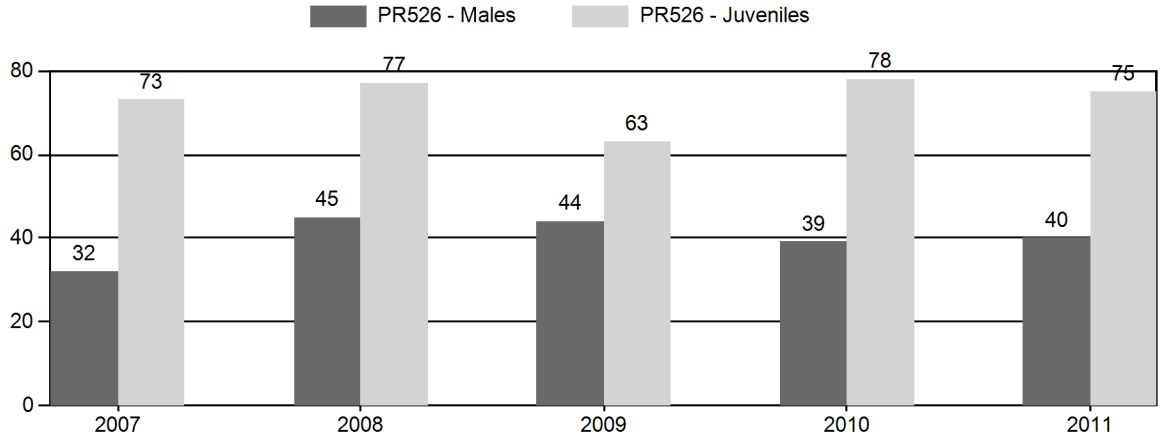
Active Licenses



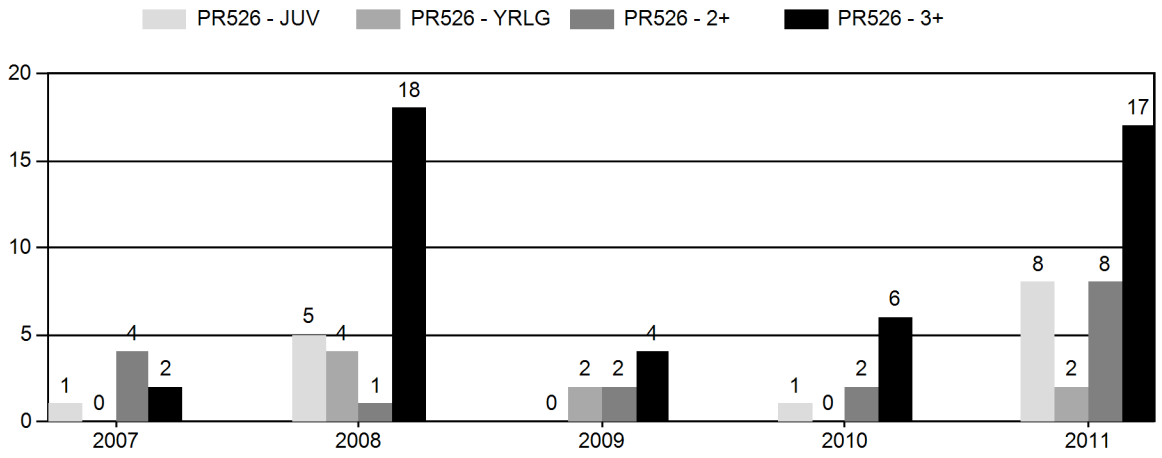
Days Per Animal Harvested



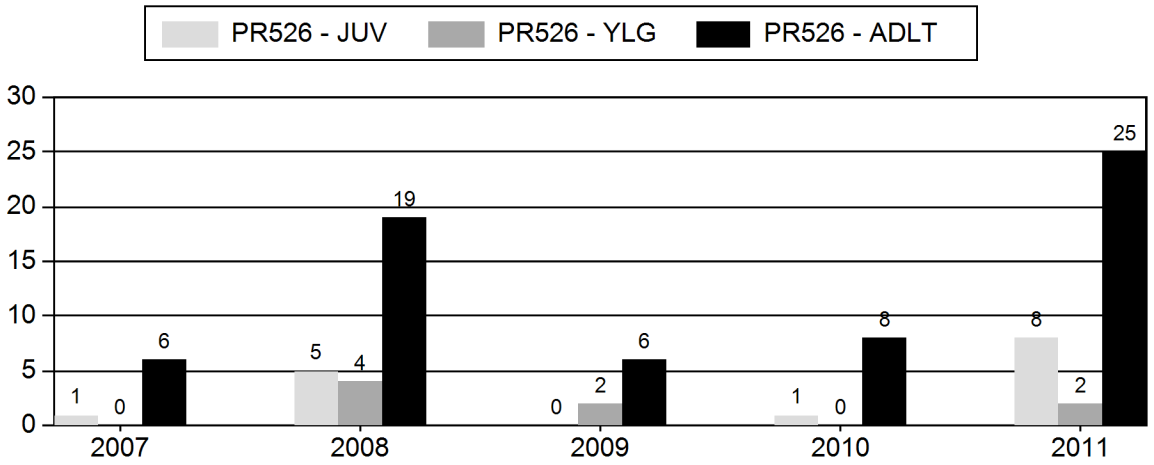
Preseason Animals per 100 Females



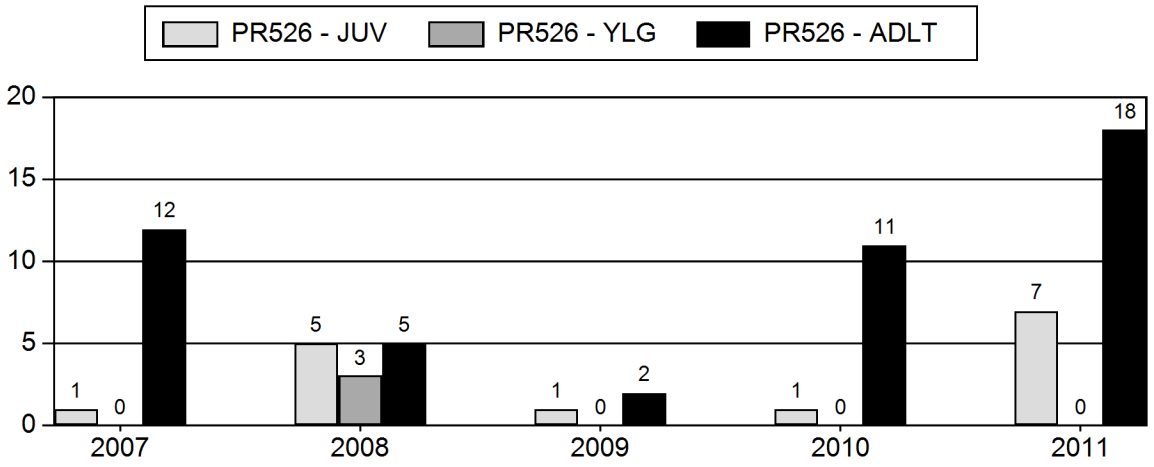
Age Structure of Field Checked Males



Age Structure Data (Field and Laboratory) - Male



Age Structure Data (Field and Laboratory) - Female



2011 HUNTING SEASONS

PR526 - COOPER LAKE

Hunt Area	Add'l Hunt Areas	Type	Quota	Season Dates	Limitations
43		ARCH		08/15 - 09/17	Refer to Section 3 of this Chapter
43		Type 1	450	09/17 - 10/14	Any
43		Type 6	450	09/17 - 10/14	Reduced Price doe/fawn

Area	Type	ActiveLic/ Htrs	Buck	Doe	Fawn	Total	Success	Days/ Harvest	Days	Licenses Sold
2011										
43 COOPER LAKE										
	Type 1	421	323	22	7	352	83.60%	3.9	1373	449
	Type 6	404	0	264	38	302	74.80%	4.2	1268	445
Pooled Total		746 (825)*	323	286	45	654	87.70% (79.3%)*	4	2641	
Pooled Resident		117	73	37	0	110	94.00%	5.4	590	
Pooled Nonresident		629	250	249	45	544	86.50%	3.8	2051	
2011 Hunt Area Total		746 (825)*	323	286	45	654	87.70% (79.3%)*	4	2641	894
2011 Herd Total		746 (825)*	323	286	45	654	87.70% (79.3%)*	4	2641	894

*Active Licenses

2007 - 2011 Harvest Age Structure

for Pronghorn Herd PR526 - COOPER LAKE

	Males										Females										Herd
Year	Juv	1	% 1 *	2	3 ^	% 3 **	Total Aged ++	Not Aged +++	Unk	Total Chkd	Juv	1	% 1 *	2	3 ^	% 3 **	Total Aged ++	Not Aged +++	Unk	Total Chkd	Total
2007	1	0	0%	4	2	33%	7	0	0	7	1	0	0%	2	4	67%	7	6	0	13	20
2008	5	4	17%	1	18	78%	28	0	5	33	5	3	38%	2	3	38%	13	0	3	16	49
2009	0	2	25%	2	3	43%	7	1	0	8	1	0	0%	0	1	100%	2	1	0	3	11
2010	1	0	0%	2	3	60%	6	3	0	9	1	0	0%	3	4	57%	8	4	0	12	21
2011	8	2	7%	8	8	44%	26	9	2	37	7	0	0%	2	5	71%	14	11	5	30	67

* Percent of aged animals (including unaged adults but excluding juveniles) 1 1/2 years old

^ Number of animals three years old and older. Animals aged older than three (excluding unaged adults) are lumped into this three plus category

** Percent of aged animals (not including juveniles or unaged adults) three years old or older

++ includes juveniles

+++ Unaged adults - unaged animals older than yearlings

2007 - 2011 Preseason Classification Summary

for Pronghorn Herd PR526 - COOPER LAKE

		MALES				FEMALES		JUVENILES				Males to 100 Females				Young to		
Year	Pre Pop	Ylg	Adult	Total	%	Total	%	Total	%	Tot Cls	Cls Obj	Ylng	Adult	Total	Conf Int	100 Fem	Conf Int	100 Adult
2007	7,411	84	163	247	16%	768	49%	559	36%	1,574	1,989	11	21	32	± 3	73	± 6	55
2008	7,900	39	71	110	20%	246	45%	189	35%	545	2,300	16	29	45	± 8	77	± 12	53
2009	7,865	87	146	233	21%	525	48%	332	30%	1,090	1,780	17	28	44	± 0	63	± 0	44
2010	8,017	89	147	236	18%	599	46%	468	36%	1,303	2,318	15	25	39	± 0	78	± 0	56
2011	7,833	56	162	218	19%	544	47%	406	35%	1,168	2,231	10	30	40	± 5	75	± 7	53

COOPER LAKE PRONGHORN
(PR526)
Hunt Area 43
2012 Hunting Seasons

Hunt Area	Type	Dates of Opens	Season Closes	Limitations
43	1	~~Sept. 17~~ **Sept. 15**	Oct. 14	Limited Quota; 450 licenses, any antelope
	6	~~Sept. 18~~ **Sept. 15**	Oct. 14	Limited Quota; 450 licenses, doe or fawn
Archery 43		Aug. 15	~~Sept 16~~ **Sept. 14**	Refer to Section 3 of this Chapter

SUMMARY OF CHANGES BY LICENSE NUMBER

Area	Type	Change from 2010
43	1	0
	6	0
Herd Totals	**1**	**0**
	6	**0**

Changes for 2012

- Changed the opening date for the rifle season to the third Saturday of September, on the 15th, and adjust the closing of the archery season

Management Evaluation

The Cooper Lake Pronghorn Herd is under recreational management. The Cooper Lake Herd is estimated to be well above its objective. However, limited public access has hindered efforts to increase harvest rates. Most hunting is limited to the Diamond Lake and Laramie River Hunter Management Areas. Drought and poor habitat conditions impact this herd. Without improved hunter access it remains difficult to address the objective by harvest. In 2011, over all harvest decreased by 5% and hunter success decreased by 11% indicating the current level of hunter

densities on these Hunter Management Areas appears to be at or above the threshold for maximum harvest.

Population: We last estimated the population using aerial line transect sampling at the end of the 2007 biological year (June 19-21, 2008). The projected 2011 postseason population is based on the simulation aligned on the 2007 survey. We estimate the population at 7,114 which compares to the 5 year average of 6,937 pronghorn. That is well above the herd's objective of 3,000. We have not been able to maintain the herd at or below this objective through harvest. Observed herd ratios showed a small decrease in the fawn:doe ratio from 78:100in 2010 to 75:100 in 2011. Buck:doe ratios continue to be lower than the 5 year average with the 2011 estimate at 40:100. We have been concerned that our hunting pressure may be affecting buck availability and quality on the HMAs.

Harvest: We have been selling all our Area 43 Type 1 and Type 6 licenses in recent years due to the availability of access through HMAs. Most hunters are nonresidents. In 2011, a total of 825 hunters harvested 654 pronghorn with a hunter success rate of 88%. Compared to 2010, we had more hunters participate in 2011 but harvest and success decreased. Success for Type 1 hunters decreased from 95% in 2010 to 84% in 2011. Success for Type 6 hunters also decreased from 89% to 75% in 2011. If this trend continues in the 2012 season we will look at reducing licenses in 2013.

Data Set: PR526_11.gn1 02/24/2012 10:46 am Page 1

COOPER LAKE PRONGHORN (A526) - 2011 Seasons Model using 2007 Line Transect
Data from 1984 to 2012 Simulation from 1990 to 2012

Age Class	Init Pop. Male	Init Pop. Female	Presn Male	Mort% Female	Postsn Mort% Male	Postsn Mort% Female	Effort Set 1 Male	Effort Set 1 Female	Effort Set 2 Male	Effort Set 2 Female
0	78.0	78.0	50.0	50.0	45.0	35.0	1.00	1.00	1.00	1.00
1	12.0	13.1	2.0	2.0	5.0	5.0	0.70	1.00	1.00	1.00
2	10.0	11.8	2.0	2.0	5.0	5.0	1.00	1.00	1.00	1.00
3	9.0	10.6	2.0	2.0	5.0	5.0	1.00	1.00	1.00	1.00
4	7.0	9.6	2.0	2.0	5.0	5.0	1.00	1.00	1.00	1.00
5	5.0	8.6	2.0	2.0	5.0	5.0	1.00	1.00	1.00	1.00
6	4.0	7.7	2.0	2.0	10.0	5.0	1.00	1.00	1.00	1.00
7	2.3	7.0	2.0	2.0	20.0	5.0	1.00	1.00	1.00	1.00
8	2.0	6.3	2.0	2.0	35.0	10.0	1.00	1.00	1.00	1.00
9	1.7	5.6	2.0	2.0	50.0	25.0	1.00	1.00	1.00	1.00
10	1.4	5.1	2.0	2.0	75.0	50.0	1.00	1.00	1.00	1.00
11	0.0	3.0	2.0	2.0	85.0	75.0	1.00	1.00	1.00	1.00
12	0.0	1.0	2.0	2.0	95.0	95.0	1.00	1.00	1.00	1.00
13	0.0	1.0	2.0	2.0	100.0	100.0	1.00	1.00	1.00	1.00

Sum = 300.8 Estimated Sum = 11000 Subadults: Ages 0 to 0

Data Set: PR526_11.gn1 02/24/2012 10:46 am Page 2

MSI Function is Linear

Bio-Year	Preseason MSI	Harvest // Des. Pop Size in NA Subadults#	Males#	Females#	Postseason MSI	Effort & Wound Set Used
1984	1.00	7	203	80	1.00	1
1985	1.00	9	226	85	1.00	1
1986	1.00	8	184	154	0.90	1
1987	1.00	54	219	241	2.00	1
1988	1.00	50	262	237	1.00	1
1989	1.00	66	248	278	1.00	1
1990	1.00	66	293	285	1.00	1
1991	1.00	87	372	273	1.00	1
1992	1.28	56	326	377	6.00	1
1993	1.43	40	144	173	0.70	1
1994	1.25	36	144	125	0.60	1
1995	1.14	10	117	28	0.87	1
1996	1.13	10	106	53	1.95	1
1997	0.89	12	130	81	0.50	1
1998	0.93	12	134	110	0.45	1
1999	0.90	34	188	138	0.30	1
2000	1.00	46	228	270	2.10	1
2001	1.10	21	278	132	1.00	1
2002	1.20	52	187	290	1.00	1
2003	1.23	53	305	233	1.00	1
2004	1.30	42	310	261	1.00	1
2005	0.95	75	292	249	0.90	1
2006	1.01	31	326	251	0.90	1
2007	0.98	49	325	202	1.00	1
2008	0.93	63	267	275	1.00	1
2009	1.11	43	332	297	1.25	1
2010	0.96	40	355	299	1.30	1
2011	0.97	45	323	286	1.00	1
2012	0.95	43	320	300	1.00	1

Set 1	Wounding Loss	10.%	10.%	10.%	Yearling Male 10.%
Set 2	Wounding Loss	15.%	15.%	15.%	Yearling Male 15.%

Bio-Year	Young/100 Fems Age 1 - 1	Young/100 Fems Age 2 - 13	Young/100 Fems Disabled	Sex Ratio: 50 : 50
1985	0.0	180.0	0.0	
1986	0.0	180.0	0.0	
1987	0.0	180.0	0.0	
1988	0.0	180.0	0.0	
1989	0.0	180.0	0.0	
1990	0.0	180.0	0.0	
1991	0.0	180.0	0.0	
1992	0.0	180.0	0.0	
1993	0.0	180.0	0.0	
1994	0.0	180.0	0.0	
1995	0.0	180.0	0.0	
1996	0.0	180.0	0.0	
1997	0.0	180.0	0.0	
1998	0.0	180.0	0.0	
1999	0.0	180.0	0.0	
2000	0.0	180.0	0.0	
2001	0.0	180.0	0.0	
2002	0.0	180.0	0.0	
2003	0.0	180.0	0.0	
2004	0.0	180.0	0.0	
2005	0.0	180.0	0.0	
2006	0.0	180.0	0.0	
2007	0.0	180.0	0.0	
2008	0.0	180.0	0.0	
2009	0.0	180.0	0.0	
2010	0.0	180.0	0.0	
2011	0.0	180.0	0.0	
2012	0.0	180.0	0.0	
2013	0.0	180.0	0.0	

POP-II (V1.2.9) Simulation Output Tables for PR526_11.gn1, 02/24/2012 10:46 am

Table 1. Population Size During Bio-Year for PR526_11.gn1 02/24/2012 10:46 am

Bio-Year	Start	Pre-Season	Post Season	End	%Growth
1990	11000	8042	7333	5660	-7.1
1991	10216	7825	7020	5672	3.8
1992	10609	7304	6469	2898	-42.3
1993	6117	3732	3340	2989	-7.6
1994	5654	3914	3578	3229	6.5
1995	6022	4357	4186	3538	9.7
1996	6604	4791	4605	2992	-9.7
1997	5963	4588	4342	3905	16.0
1998	6915	5442	5161	4727	22.9
1999	8497	6715	6319	5946	22.6
2000	10418	8063	7465	4608	-14.3
2001	8930	6451	5977	4937	2.1
2002	9120	6492	5910	4958	1.4
2003	9247	6487	5837	4874	-0.8
2004	9169	6250	5576	4654	-3.4
2005	8860	6774	6096	5019	3.3
2006	9156	6965	6297	5232	6.0
2007	9705	7411	6777	5472	5.1
2008	10201	7900	7235	5825	4.9
2009	10700	7865	7125	5539	-1.8
2010	10508	8017	7253	5469	-2.3
2011	10265	7833	7114	5798	4.8
2012	10757	8291	7562	6154	5.7

Table 2. Preseason Natural Mortality for PR526_11.gn1 02/24/2012 10:46 am

Bio-Year	Sub-Adults	Adult Males	Adult Females	Total	% of Pop
1990	2852	40	66	2958	26.9
1991	2278	45	69	2391	23.4
1992	3160	57	88	3305	31.2
1993	2301	32	51	2384	39.0
1994	1665	29	45	1740	30.8
1995	1592	30	44	1665	27.7
1996	1732	32	48	1812	27.4
1997	1322	20	33	1376	23.1
1998	1400	29	44	1472	21.3
1999	1696	35	50	1781	21.0
2000	2236	51	68	2355	22.6
2001	2377	42	59	2479	27.8
2002	2510	48	71	2628	28.8
2003	2638	50	72	2759	29.8
2004	2792	51	76	2919	31.8
2005	1998	35	53	2086	23.5
2006	2089	40	61	2190	23.9
2007	2192	40	62	2294	23.6
2008	2199	39	62	2301	22.6
2009	2706	51	78	2835	26.5
2010	2385	42	64	2491	23.7
2011	2326	41	65	2432	23.7
2012	2356	43	67	2466	22.9

Table 3. Harvest Mortality for PR526_11.gn1 02/24/2012 10:46 am

Bio-Year	Sub-Adults	Adult Males	Adult Females	Total	% of Pop

1990	66	293	285	644	8.0
1991	87	372	273	732	9.4
1992	56	326	377	759	10.4
1993	40	144	173	357	9.6
1994	36	144	125	305	7.8
1995	10	117	28	155	3.6
1996	10	106	53	169	3.5
1997	12	130	81	223	4.9
1998	12	134	110	256	4.7
1999	34	188	138	360	5.4
2000	46	228	270	544	6.7
2001	21	278	132	431	6.7
2002	52	187	290	529	8.1
2003	53	305	233	591	9.1
2004	42	310	261	613	9.8
2005	75	292	249	616	9.1
2006	31	326	251	608	8.7
2007	49	325	202	576	7.8
2008	63	267	275	605	7.7
2009	43	332	297	672	8.5
2010	40	355	299	694	8.7
2011	45	323	286	654	8.3
2012	43	320	300	663	8.0

Table 4. Harvest Percentages for PR526_11.gn1 02/24/2012 10:46 am

Bio-Year	Sub-Adults	Adult Males	Adult Females	Total	Yearling Males
1990	2.3	15.0	8.8	8.01	16.5
1991	3.8	17.1	8.1	9.35	26.8
1992	3.2	15.1	11.2	10.39	20.6
1993	4.4	13.4	10.0	9.56	0.0
1994	3.6	12.5	7.1	7.79	19.2
1995	0.8	9.2	1.5	3.56	20.5
1996	0.7	7.6	2.6	3.53	19.3
1997	0.7	11.7	4.4	4.86	5.1
1998	0.7	8.8	4.8	4.70	32.5
1999	1.6	9.8	5.1	5.36	25.2
2000	2.1	9.1	8.1	6.75	27.0
2001	1.1	14.8	5.0	6.68	2.2
2002	3.1	9.6	10.1	8.15	20.2
2003	3.2	15.3	8.2	9.11	16.2
2004	2.8	16.2	9.2	9.81	16.7
2005	3.4	16.1	9.0	9.09	16.3
2006	1.5	16.7	8.5	8.73	24.5
2007	2.1	16.1	6.5	7.77	22.3
2008	2.5	12.8	8.4	7.66	22.1
2009	2.0	14.7	8.7	8.54	22.4
2010	1.5	16.6	9.1	8.66	15.9
2011	1.8	15.6	8.7	8.35	18.9
2012	1.7	14.5	8.6	8.00	22.7

Table 5. Postseason Natural Mortality for PR526_11.gn1 02/24/2012 10:46 am

Bio-Year	Sub-Adults	Adult Males	Adult Females	Total	% of Pop
1990	1112	167	395	1673	22.8
1991	873	152	323	1348	19.2
1992	1716	694	1161	3571	55.2
1993	245	39	67	350	10.5
1994	230	43	76	349	9.8
1995	414	82	152	648	15.5

1996	1032	222	360	1614	35.0
1997	327	44	66	438	10.1
1998	287	58	88	434	8.4
1999	244	48	81	373	5.9
2000	1836	392	629	2857	38.3
2001	769	109	163	1040	17.4
2002	646	129	176	952	16.1
2003	637	133	194	963	16.5
2004	583	134	205	922	16.5
2005	765	127	185	1077	17.7
2006	725	136	204	1064	16.9
2007	891	152	262	1306	19.3
2008	984	147	278	1410	19.5
2009	1061	182	343	1586	22.3
2010	1321	164	299	1784	24.6
2011	968	126	222	1316	18.5
2012	1023	141	245	1408	18.6

Table 6. Preseason Ratios for PR526_11.gn1 02/24/2012 10:46 am

Bio-Year	Subadults /100 1+F	2+ Males /100 1+F	Yr. Males /100 1+F	Ad Males /100 1+F
1990	88.0	46.9	13.3	60.2
1991	67.7	42.5	22.3	64.8
1992	52.8	46.9	17.4	64.3
1993	52.8	62.1	0.0	62.1
1994	56.6	48.6	16.5	65.2
1995	63.7	49.1	18.1	67.3
1996	64.5	50.0	17.1	67.1
1997	90.2	56.4	4.4	60.8
1998	69.9	39.4	27.0	66.4
1999	76.3	47.8	23.0	70.8
2000	67.2	49.2	25.9	75.1
2001	73.9	69.0	2.2	71.2
2002	58.1	49.5	17.9	67.4
2003	58.2	55.2	15.3	70.5
2004	53.2	52.7	15.1	67.8
2005	80.1	51.4	14.3	65.6
2006	69.1	45.0	20.9	65.9
2007	73.3	45.9	18.9	64.8
2008	76.9	45.0	18.3	63.3
2009	63.2	46.7	19.3	66.0
2010	78.5	51.2	13.8	65.0
2011	75.0	47.2	15.7	62.9
2012	74.9	44.9	18.8	63.7

Table 7. Postseason Ratios for PR526_11.gn1 02/24/2012 10:46 am

Bio-Year	Subadults /100 1+F	2+ Males /100 1+F	Yr. Males /100 1+F	Ad Males /100 1+F
1990	95.0	42.7	12.9	55.6
1991	71.2	36.9	20.9	57.8
1992	58.2	43.8	17.3	61.2
1993	56.5	59.5	0.0	59.5
1994	59.0	44.9	16.1	60.9
1995	64.1	44.4	17.0	61.5
1996	65.8	46.8	16.5	63.3
1997	94.1	51.5	4.2	55.7
1998	73.2	37.0	26.3	63.3
1999	79.4	44.6	22.3	67.0
2000	72.1	47.9	26.2	74.2
2001	77.3	61.0	2.1	63.1
2002	63.2	49.3	18.5	67.8

2003	61.7	49.8	14.7	64.5
2004	57.3	47.5	14.5	62.1
2005	85.6	46.2	13.7	59.9
2006	74.9	39.5	19.8	59.3
2007	77.1	39.9	17.6	57.4
2008	82.4	41.9	17.9	59.8
2009	68.4	42.5	18.7	61.2
2010	85.7	45.8	13.3	59.0
2011	81.3	42.5	15.1	57.7
2012	81.3	41.0	18.2	59.2

Table 8. End of Year Ratios for PR526_11.gn1 02/24/2012 10:46 am

Bio-Year	Subadults /100 Adlts	Subadults /100 1+F	Yr. Males /100 1+F	Ad Males /100 1+F
1990	41.8	65.9	14.1	57.7
1991	30.0	47.7	22.1	59.0
1992	0.0	0.0	20.0	62.1
1993	26.6	42.5	0.0	59.5
1994	29.2	47.0	16.3	61.1
1995	28.1	45.5	17.7	62.2
1996	10.8	17.6	18.1	63.6
1997	50.4	78.3	4.2	55.2
1998	38.3	62.5	26.8	63.2
1999	43.1	72.1	22.7	67.2
2000	8.2	14.6	29.6	77.3
2001	30.5	49.6	2.1	62.8
2002	24.3	40.7	18.9	67.4
2003	24.4	40.0	15.1	64.2
2004	23.1	37.4	15.0	61.8
2005	37.2	59.2	14.2	59.2
2006	32.7	51.9	20.4	58.7
2007	32.3	50.9	18.3	57.4
2008	34.0	54.5	18.8	60.5
2009	23.7	38.4	19.7	62.2
2010	28.7	45.8	13.8	59.5
2011	33.4	52.7	15.5	57.7
2012	33.2	52.9	18.8	59.3

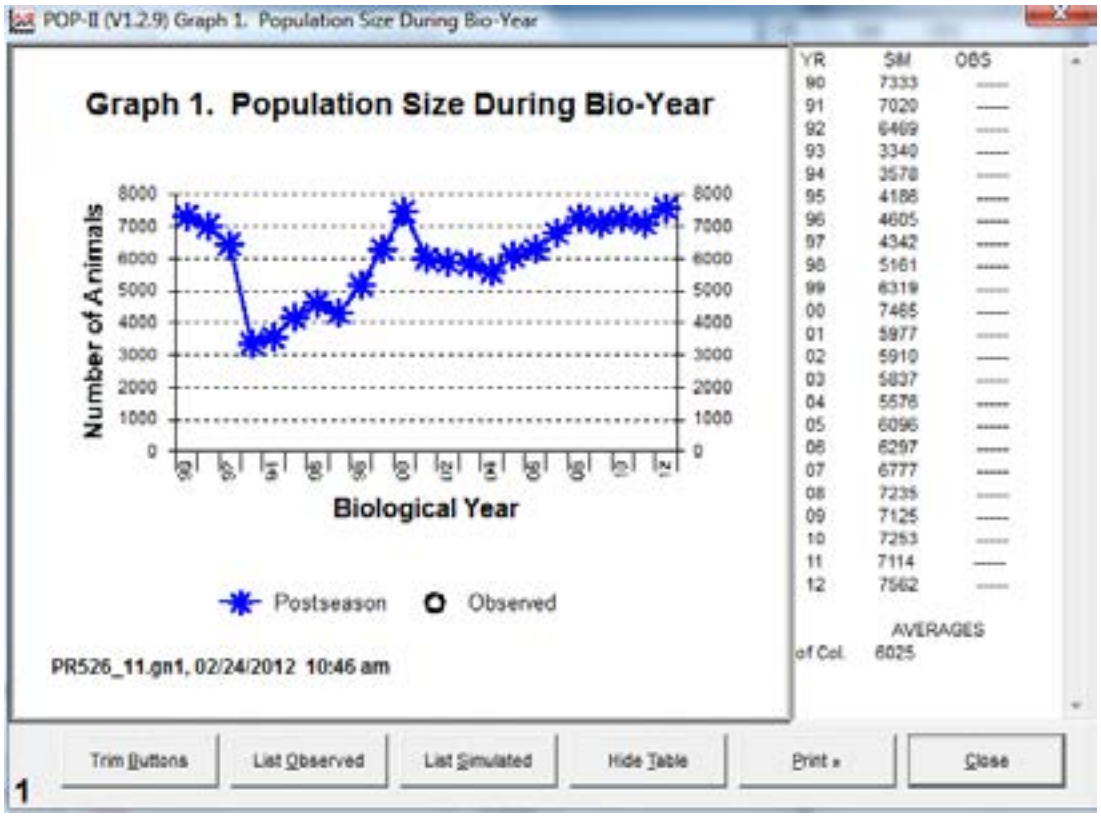
Table 9. Reproduction at Start of Bio-Year for PR526_11.gn1 02/24/2012 10:46 am

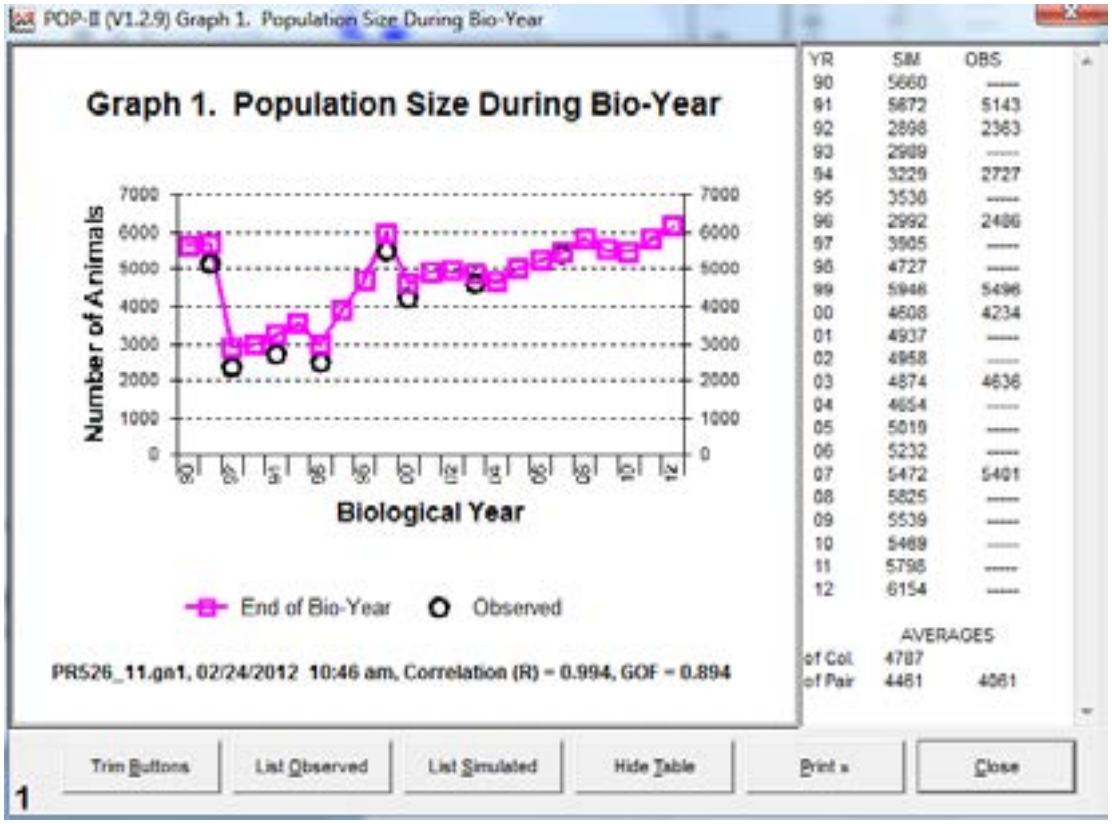
Bio-Year	Young / 100 AF 1 +	Sub-Ad. / 100 AF 1 +	Total Young	Total Sub-Adult	Total Females 1 +
1990	173	173	5705	5705	3306
1991	133	133	4556	4556	3435
1992	143	143	4937	4937	3452
1993	180	180	3219	3219	1788
1994	147	147	2664	2664	1810
1995	145	145	2793	2793	1931
1996	145	145	3066	3066	2117
1997	160	160	2972	2972	1861
1998	128	128	3010	3010	2347
1999	136	136	3769	3769	2767
2000	132	132	4472	4472	3396
2001	161	161	4322	4322	2691
2002	142	142	4183	4183	2948
2003	147	147	4289	4289	2908
2004	148	148	4295	4295	2904
2005	150	150	4206	4206	2810
2006	137	137	4137	4137	3026
2007	141	141	4473	4473	3175
2008	141	141	4730	4730	3352

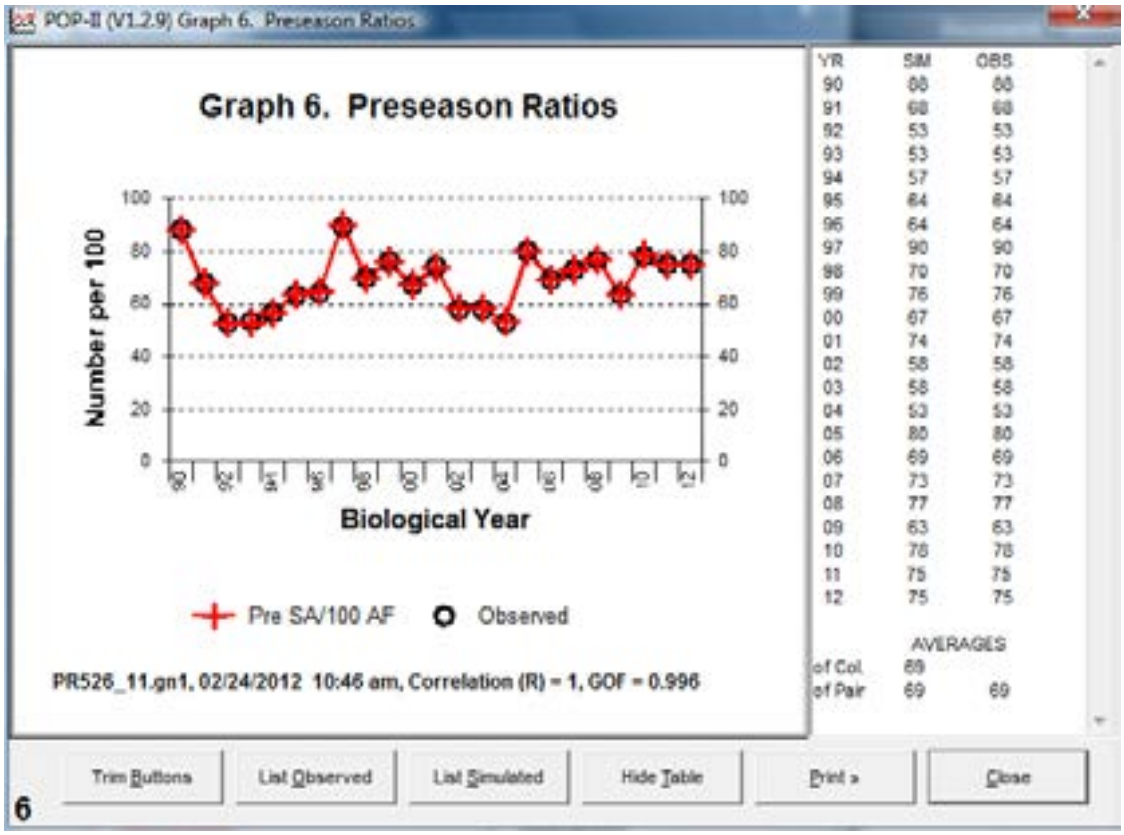
2009	139	139	4875	4875	3508
2010	148	148	4969	4969	3357
2011	143	143	4796	4796	3357
2012	140	140	4959	4959	3542

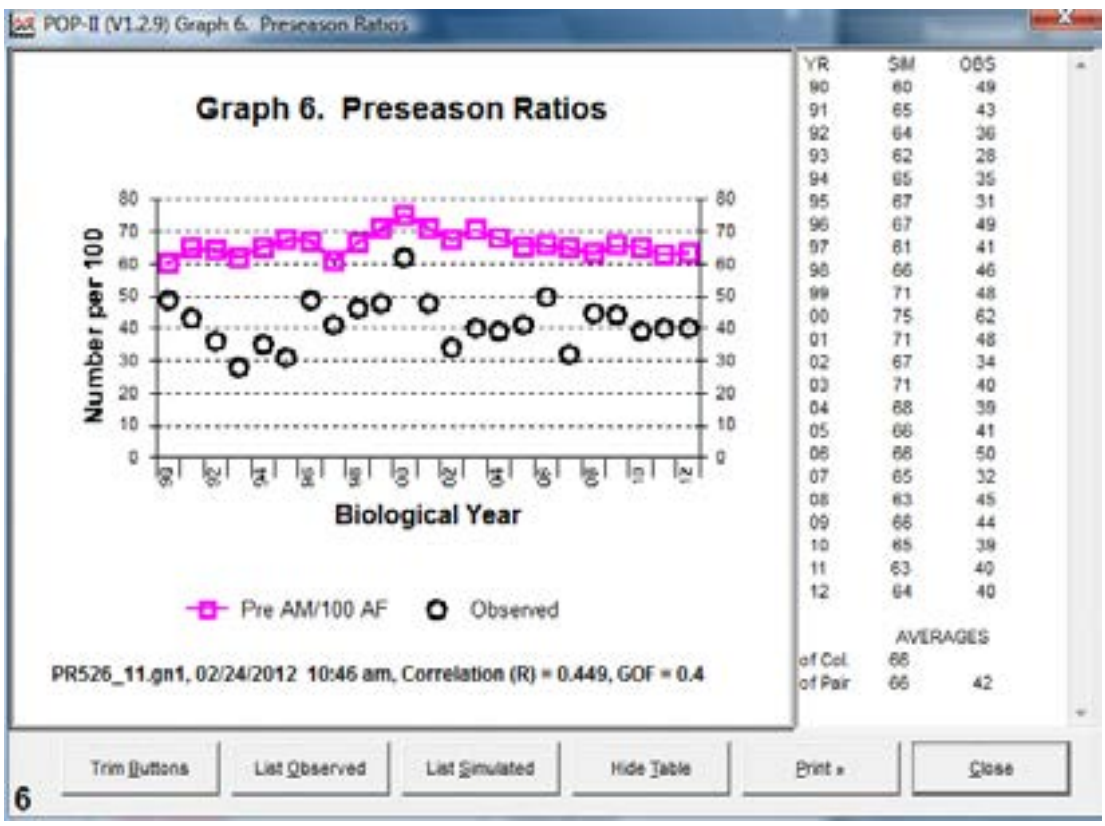
Table A. Intra-Annual Natural Survival(%) for PR526_11.gn1 02/24/2012 10:46 am

Bio-Years	Sub Adults	Adult Males	Adult Females	Overall Survival
1990-1991	58.80	87.97	84.77	75.64
1991-1992	58.46	89.06	87.18	78.73
1992-1993	0.00	59.76	58.90	43.52
1993-1994	70.20	93.34	93.31	87.27
1994-1995	74.27	93.49	93.17	88.19
1995-1996	63.73	90.72	89.71	82.60
1996-1997	21.61	81.06	80.64	63.80
1997-1998	78.51	93.67	94.39	88.25
1998-1999	80.52	94.08	94.23	89.95
1999-2000	86.24	95.24	94.92	92.21
2000-2001	15.65	80.76	77.49	60.37
2001-2002	58.56	90.82	91.22	80.61
2002-2003	58.52	90.28	90.83	81.83
2003-2004	58.44	89.64	90.09	81.33
2004-2005	58.86	89.77	90.19	81.88
2005-2006	62.71	89.60	90.69	80.67
2006-2007	62.75	89.70	90.60	81.47
2007-2008	58.88	89.14	89.23	79.23
2008-2009	58.67	89.72	88.67	78.72
2009-2010	49.04	88.69	87.23	76.25
2010-2011	47.07	88.86	88.16	73.94
2011-2012	58.86	90.91	90.79	79.96


POP-II (V1.2.9) Graph 1. Population Size During Bio-Year
Graph 1. Population Size During Bio-Year
Number of Animals
Biological Year
Postseason
Observed
PR526_11.gn1, 02/24/2012 10:46 am
YR SIM OBS
90 7333 -----
91 7020 -----
92 6469 -----
93 3340 -----
94 3578 -----
95 4188 -----
96 4605 -----
97 4342 -----
98 5161 -----
99 6319 -----
00 7465 -----
01 5977 -----
02 5910 -----
03 5837 -----
04 5576 -----
05 6096 -----
06 6297 -----
07 6777 -----
08 7235 -----
09 7125 -----
10 7253 -----
11 7114 -----
12 7562 -----
AVERAGES
of Col. 6025
Trim Buttons
List Observed
List Simulated
Hide Table
Print »
Close
1


POP-II (V1.2.9) Graph 1. Population Size During Bio-Year
Graph 1. Population Size During Bio-Year
Number of Animals
Biological Year
End of Bio-Year
Observed
PR526_11.gn1, 02/24/2012 10:46 am, Correlation (R) = 0.994, GOF = 0.894
YR SIM OBS
90 5660 -----
91 5872 5143
92 2898 2363
93 2989 -----
94 3229 2727
95 3538 -----
96 2992 2486
97 3905 -----
98 4727 -----
99 5946 5496
00 4608 4234
01 4937 -----
02 4958 -----
03 4874 4636
04 4654 -----
05 5019 -----
06 5232 -----
07 5472 5401
08 5825 -----
09 5539 -----
10 5469 -----
11 5798 -----
12 6154 -----
AVERAGES
of Col. 4787
of Pair 4461 4061
Trim Buttons
List Observed
List Simulated
Hide Table
Print »
Close
1


POP-II (V1.2.9) Graph 6. Preseason Ratios
Graph 6. Preseason Ratios
Number per 100
Biological Year
Pre SA/100 AF
Observed
PR526_11.gn1, 02/24/2012 10:46 am, Correlation (R) = 1, GOF = 0.996
YR SIM OBS
90 68 68
91 68 68
92 53 53
93 53 53
94 57 57
95 64 64
96 64 64
97 90 90
98 70 70
99 76 76
00 67 67
01 74 74
02 58 58
03 58 58
04 53 53
05 80 80
06 69 69
07 73 73
08 77 77
09 63 63
10 78 78
11 75 75
12 75 75
AVERAGES
of Col. 69
of Pair 69 69
Trim Buttons
List Observed
List Simulated
Hide Table
Print »
Close
6


POP-II (V1.2.9) Graph 6. Preseason Ratios
Graph 6. Preseason Ratios
Number per 100
Biological Year
Pre AM/100 AF
Observed
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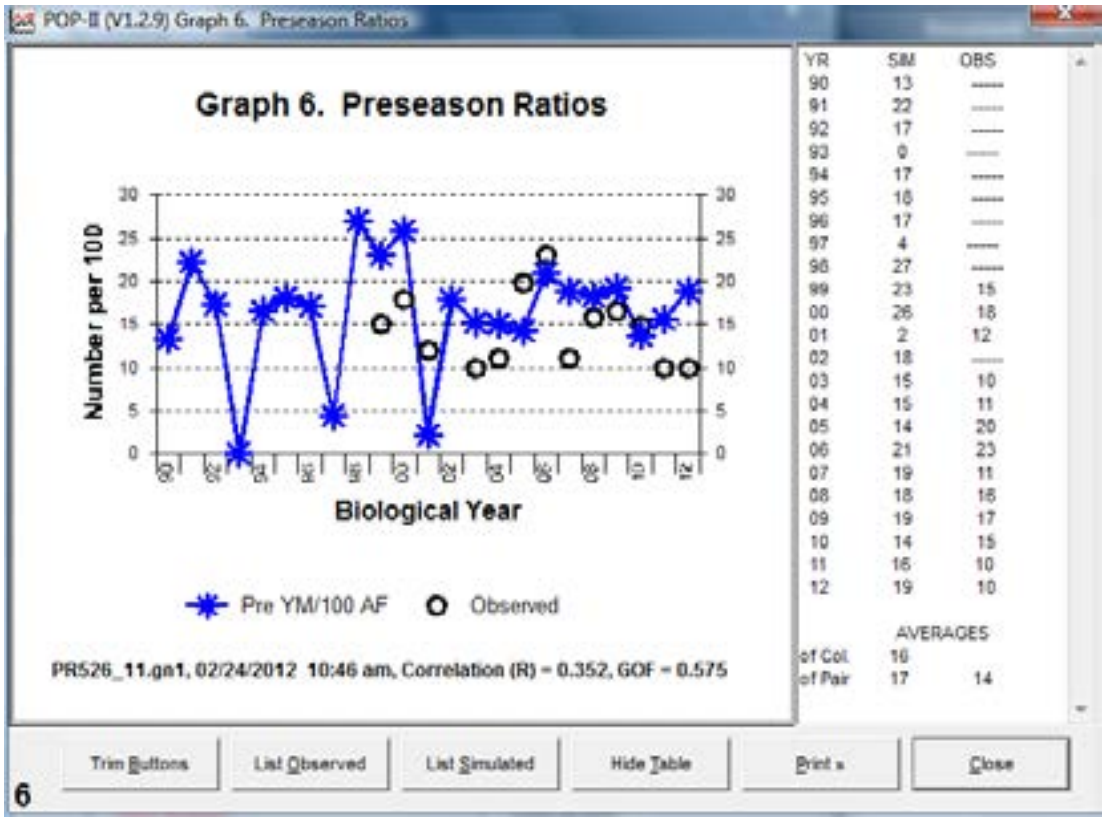
YR SIM OBS
90 60 49
91 65 43
92 64 36
93 62 28
94 65 35
95 67 31
96 67 49
97 61 41
98 66 46
99 71 48
00 75 62
01 71 48
02 67 34
03 71 40
04 68 39
05 66 41
06 66 50
07 65 32
08 63 45
09 66 44
10 65 39
11 63 40
12 64 40
AVERAGES
of Col. 66
of Pair 66 42
Trim Buttons
List Observed
List Simulated
Hide Table
Print »
Close
6


POP-II (V1.2.9) Graph 6. Preseason Ratios
Graph 6. Preseason Ratios
Number per 100
Biological Year
Pre YM/100 AF
Observed
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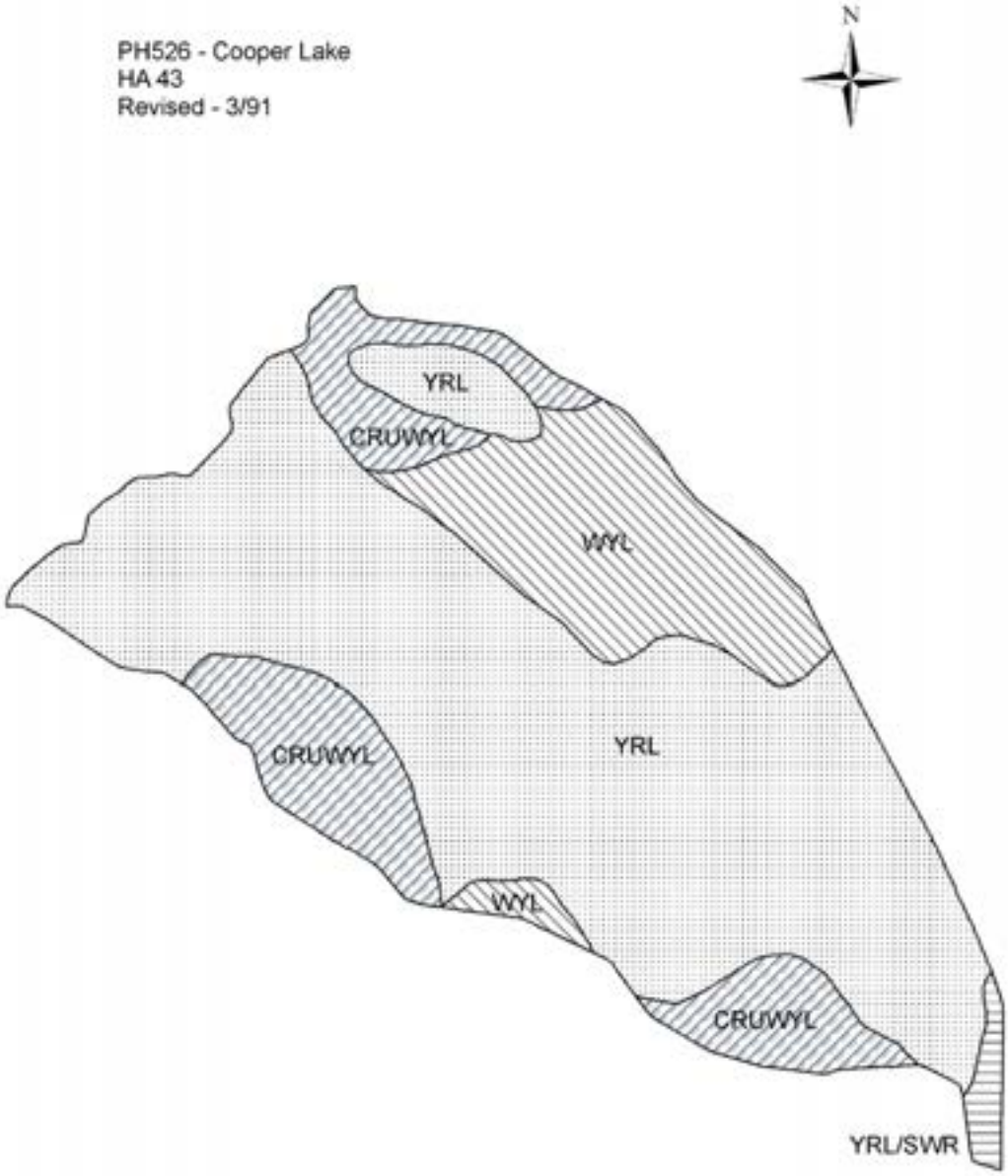
YR SIM OBS
90 13 -----
91 22 -----
92 17 -----
93 0 -----
94 17 -----
95 16 -----
96 17 -----
97 4 -----
98 27 -----
99 23 15
00 26 18
01 2 12
02 18 -----
03 15 10
04 15 11
05 14 20
06 21 23
07 19 11
08 18 16
09 19 17
10 14 15
11 16 10
12 19 10
AVERAGES
of Col. 16
of Pair 17 14
Trim Buttons
List Observed
List Simulated
Hide Table
Print
Close
6

PH526 - Cooper Lake
HA 43
Revised - 3/91



2011 - JCR Evaluation Form

SPECIES: Pronghorn | PERIOD: 6/1/2011 - 5/31/2012

HERD: PR527 - CENTENNIAL

HUNT AREAS: 37, 44-45 | PREPARED BY: LEE KNOX

	2006 - 2010 Average	2011	2012 Proposed
Population:	23,601	26,664	30,000
Harvest:	1,502	1,256	1,280
Hunters:	1,699	1,374	1,350
Hunter Success:	88%	91%	95%
Active Licenses:	1,880	1,627	1,630
Active License Percent:	80%	77%	79%
Recreation Days:	6,110	5,296	5,290
Days Per Animal:	4.1	4.2	4.1
Males per 100 Females	44	37	
Juveniles per 100 Females	70	87	

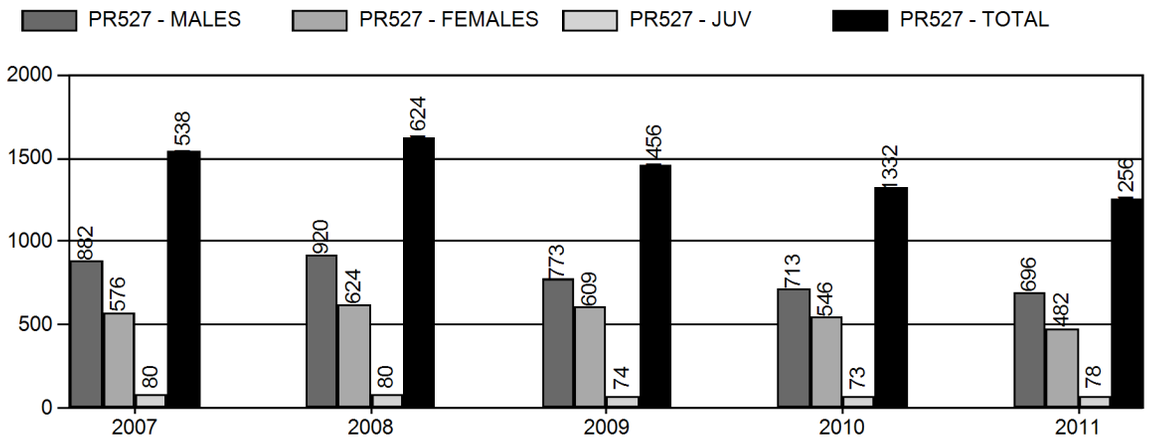
Population Objective:	14,000
Management Strategy:	Recreational
Percent population is above (+) or below (-) objective:	90%
Number of years population has been + or - objective in recent trend:	11
Model Date:	2/24/2012

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

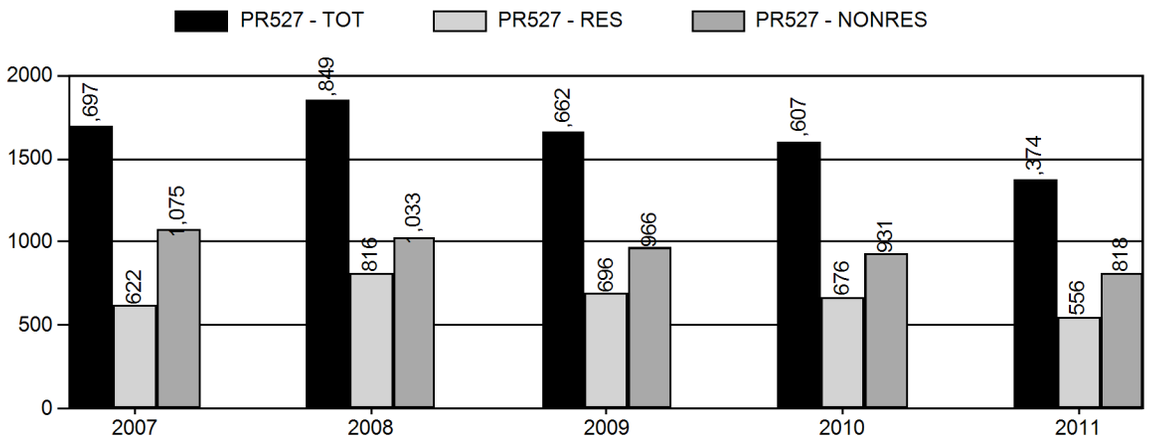
	JCR Year	Proposed
Females ≥ 1 year old:	4.3%	4.3%
Males ≥ 1 year old:	9.6%	8.4%
Juveniles (< 1 year old):	.8%	.8%
Total:	4.48%	6.76%
Proposed change in post-season population:	11.2%	13.6%

Population Size - Postseason

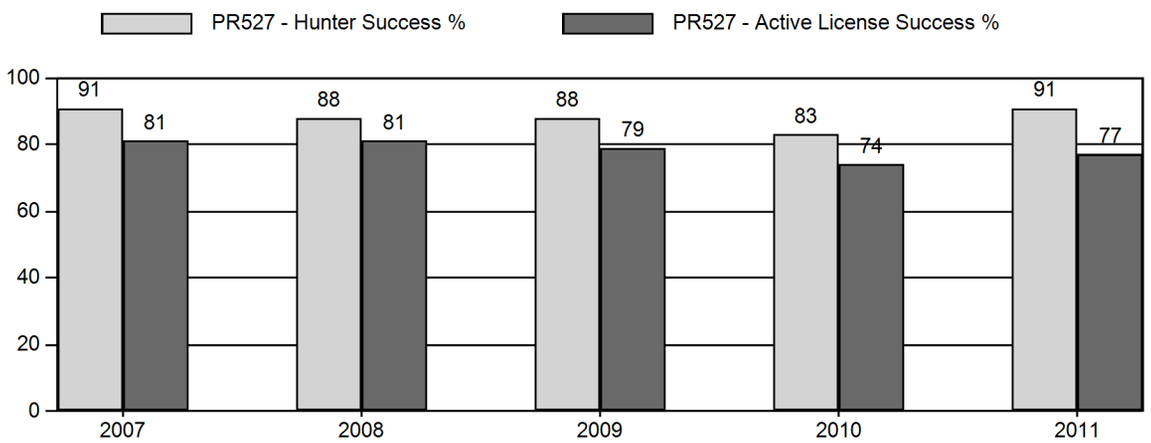
Harvest



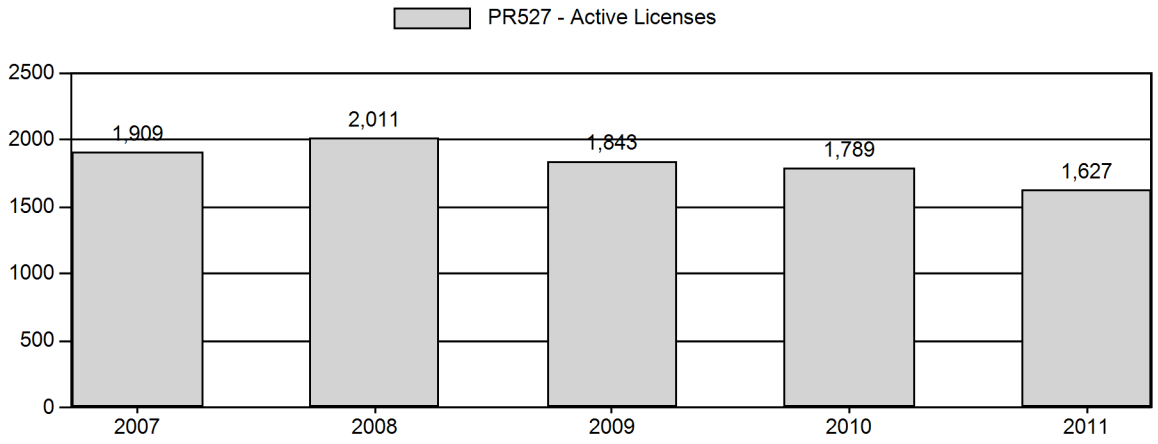
Number of Hunters



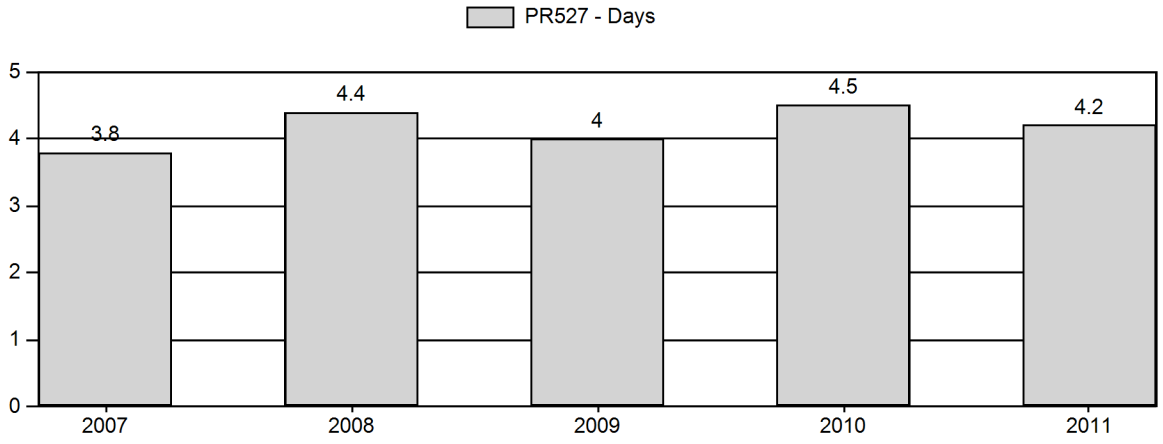
Harvest Success



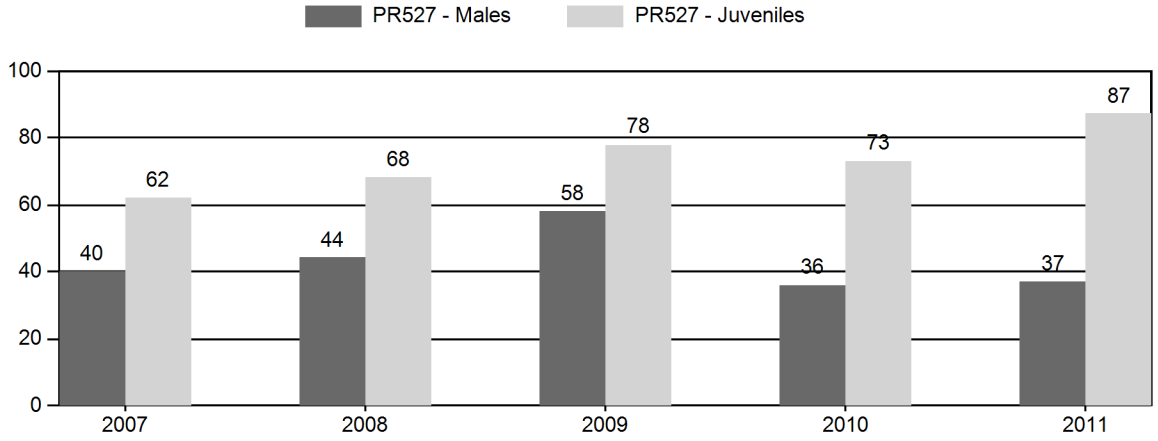
Active Licenses



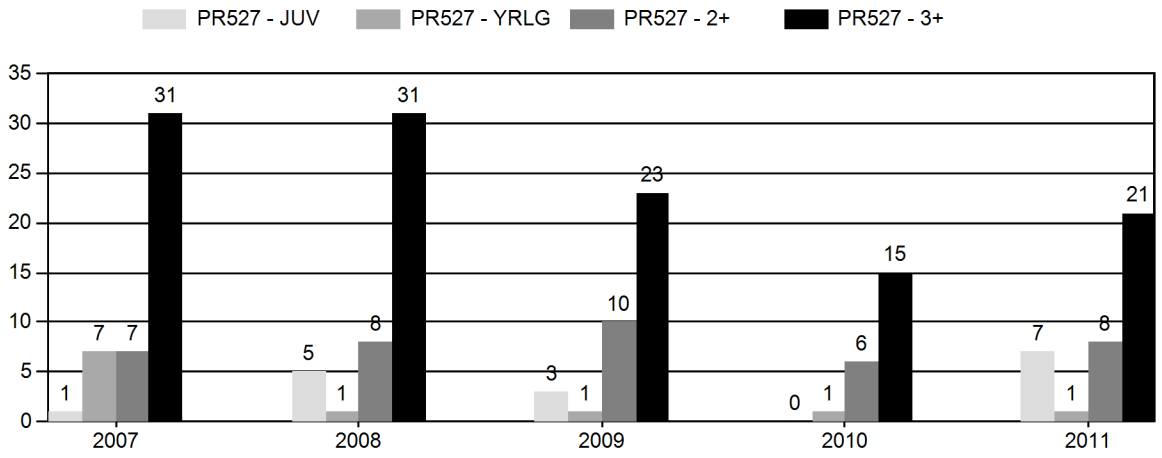
Days Per Animal Harvested



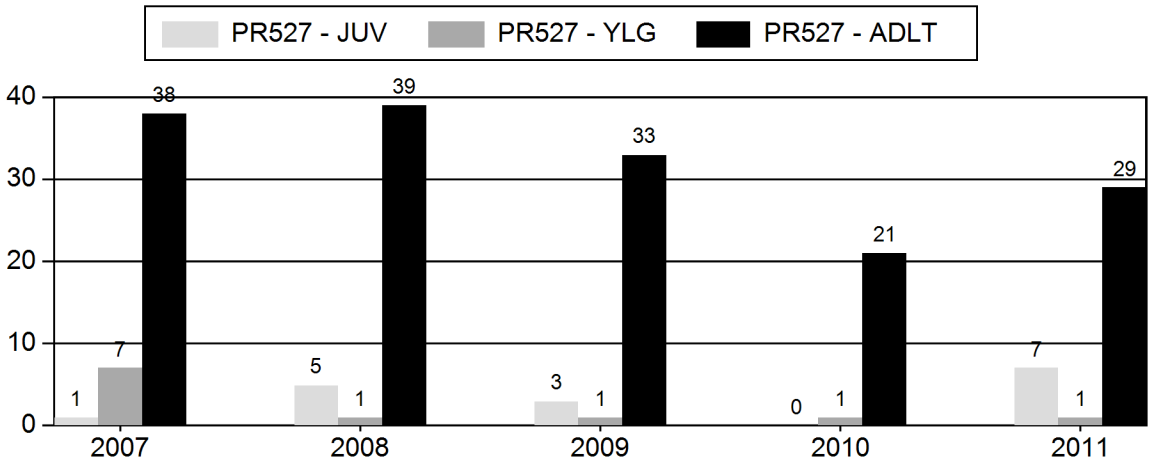
Preseason Animals per 100 Females



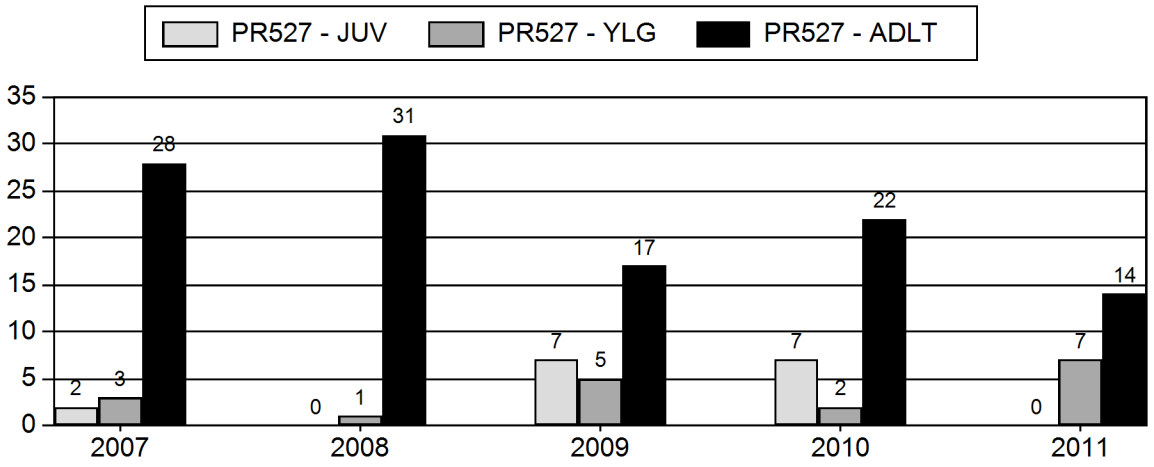
Age Structure of Field Checked Males



Age Structure Data (Field and Laboratory) - Male



Age Structure Data (Field and Laboratory) - Female



2007 - 2011 Preseason Classification Summary

for Pronghorn Herd PR527 - CENTENNIAL

		MALES				FEMALES		JUVENILES				Males to 100 Females				Young to		
Year	Pre Pop	Ylg	Adult	Total	%	Total	%	Total	%	Tot Cls	Cls Obj	Ylng	Adult	Total	Conf Int	100 Fem	Conf Int	100 Adult
2007	23,774	99	362	461	20%	1,147	49%	713	31%	2,321	1,990	9	32	40	± 3	62	± 5	44
2008	25,224	202	386	588	21%	1,343	47%	915	32%	2,846	2,381	15	29	44	± 3	68	± 4	47
2009	27,817	359	405	764	24%	1,326	42%	1,035	33%	3,125	3,122	27	31	58	± 0	78	± 0	50
2010	26,314	131	357	488	17%	1,337	48%	978	35%	2,803	2,589	10	27	36	± 0	73	± 0	54
2011	28,046	59	214	273	16%	741	45%	641	39%	1,655	2,886	8	29	37	± 4	87	± 7	63

2011 HUNTING SEASONS

PR527 - CENTENNIAL

Hunt Area	Add'l Hunt Areas	Type	Quota	Season Dates	Limitations
37		ARCH		08/15 - 09/17	Refer to Section 3 of this Chapter
37		Type 1	275	09/17 - 10/14	Any
37		Type 6	75	09/17 - 10/31	Reduced Price doe/fawn
37		Type 7	25	09/17 - 10/14	Reduced Price doe/fawn
44	45	ARCH		08/15 - 09/10	Refer to Section 3 of this Chapter
44		Type 1	250	09/10 - 09/30	Any
44		Type 6	250	09/10 - 09/30	Reduced Price doe/fawn
45		Type 1	500	09/10 - 09/30	Any
45		Type 6	500	09/10 - 09/30	Reduced Price doe/fawn
45		Type 6	1000	10/01 - 10/14	Reduced Price doe/fawn

Area	Type	Active Lic/ Htrs	Buck	Doe	Fawn	Total	Success	Days/ Harvest	Days	Licenses Sold
2011										
37 HARRIMAN										
	Type 1	233	211	0	0	211	90.60%	3.3	691	273
	Type 6	65	0	55	0	55	84.60%	5.1	282	75
	Type 7	17	0	15	0	15	88.20%	2.9	43	25
Pooled Total		277 (315)*	211	70	0	281	101.40% (89.2%)*	3.6	1016	
Pooled Resident		162	126	34	0	160	98.80%	4.5	727	
Pooled Nonresident		115	85	36	0	121	105.20%	2.4	289	
44 SOUTH LARAMIE										
	Type 1	245	187	13	0	200	81.60%	4.3	851	249
	Type 6	216	0	126	26	152	70.40%	5.7	863	250
Pooled Total		387 (461)*	187	139	26	352	91.00% (76.4%)*	4.9	1714	
Pooled Resident		137	98	17	4	119	86.90%	4.2	498	
Pooled Nonresident		250	89	122	22	233	93.20%	5.2	1216	
45 WEST LARAMIE										
	Type 1	410	298	29	7	334	81.50%	4.5	1493	491
	Type 6	441	0	244	45	289	65.50%	3.7	1073	494
Pooled Total		722 (851)*	298	273	52	623	86.30% (73.2%)*	4.1	2566	
Pooled Resident		262	157	61	7	225	85.90%	4.3	968	
Pooled Nonresident		460	141	212	45	398	86.50%	4	1598	
2011 Hunt Area Total		1386 (1627)*	696	482	78	1256	90.60% (77.2%)*	4.2	5296	1857
2011 Herd Total		1374 (1627)*	696	482	78	1256	91.40% (77.2%)*	4.2	5296	1857

2007 - 2011 Harvest Age Structure

for Pronghorn Herd PR527 - CENTENNIAL

	Males										Females										Herd
Year	Juv	1	% 1 *	2	3 ^	% 3 **	Total Aged ++	Not Aged +++	Unk	Total Chkd	Juv	1	% 1 *	2	3 ^	% 3 **	Total Aged ++	Not Aged +++	Unk	Total Chkd	Total
2007	1	7	16%	7	26	65%	41	5	0	46	2	3	10%	5	14	64%	24	9	0	33	79
2008	5	1	2%	8	26	74%	40	5	0	45	0	1	3%	5	19	76%	25	7	0	32	77
2009	3	1	3%	10	12	52%	26	11	9	46	7	5	23%	4	4	31%	20	9	2	31	77
2010	0	1	5%	6	13	65%	20	2	0	22	7	2	8%	3	4	44%	16	15	6	37	59
2011	7	1	3%	8	7	44%	23	14	0	37	0	7	33%	0	7	50%	14	7	8	29	66

* Percent of aged animals (including unaged adults but excluding juveniles) 1 1/2 years old

^ Number of animals three years old and older. Animals aged older than three (excluding unaged adults) are lumped into this three plus category

** Percent of aged animals (not including juveniles or unaged adults) three years old or older

++ includes juveniles

+++ Unaged adults - unaged animals older than yearlings

CENTENNIAL PRONGHORN
(PR527)
Hunt Areas 37, 44, 45
2012 Hunting Seasons

Hunt Area	Type	Dates of Opens	Season Closes	Limitations
37	1	~~Sept. 17~~ **Sept. 15**	Oct. 14	Limited Quota; 275 licenses, any antelope
	6	~~Sept. 17~~ **Sept. 15**	Oct. 14	Limited Quota; 75 licenses, doe or fawn, valid in that portion of Area 37 east of the Harriman Road (Wyoming Highway 218, Laramie County Road 102)
	7	~~Sept. 17~~ **Sept. 15**	Oct. 14	Limited Quota; 25 licenses, doe or fawn, valid in that portion of Area 37 west of the Harriman Road (Wyoming Highway 218, Laramie County Road 102)
44	1	~~Sept. 10~~ **Sept. 8**	Sept. 30	Limited Quota; 250 licenses, any antelope
	6	~~Sept. 10~~ **Sept. 8**	Sept. 30	Limited Quota; 250 licenses, doe or fawn
45	1	~~Sept. 10~~ **Sept. 8**	Sept. 30	Limited Quota; 500 licenses, any antelope
	6	~~Sept. 10~~ **Sept. 8**	Sept. 30	Limited Quota; 500 licenses, doe or fawn
		Oct. 1	Oct. 14	Unused Area 45 Type 1 and Type 6 licenses valid in that portion of Area 45 south of Wyoming Highway 130
Archery				
37		Aug. 15	~~Sept 16~~ **Sept 14**	Refer to Section 3 of this Chapter
44,45		Aug. 15	~~Sept 16~~ **Sept 7**	Refer to Section 3 of this Chapter

SUMMARY OF CHANGES BY LICENSE NUMBER

Area	Type	Change from 2010
37	1	0
	6	0
	7	0
44	1	0
	6	0

45	1 6	0 -0
Herd Totals	**1** **6 & 7**	**0** **0**

Changes for 2012

- Changed opening dates to coincide with the 2nd Saturday of September in Areas 44 and 45, and the 3rd Saturday in Area 37.

Management Evaluation

The Centennial Pronghorn Herd is under recreational management. The seasons are structured to decrease the population but the lack of access continues to limit harvests and our ability to bring the population anywhere near the objective. We would like to lower the population to bring it in better balance with habitat conditions and to maintain the population at a level that can be controlled by harvest. Current harvest rates are limited by access to private lands. The population has been increasing since 2003. We moved the seasons in Areas 44 and 45 into September in 2009 in order to close them before the opening of deer season on October 1st. Landowners in our Hunter Management Areas were concerned about pronghorn hunters pushing deer off their ranches during the deer season. This change was intended to keep these landowners from withdrawing from the HMA program. In 2008, we enrolled the State of Wyoming's X-Bar Ranch in Area 45 as a Hunter Management Area, but limitations due to safety concerns with nearby dwellings necessitate fairly limited pronghorn hunting. Access to the X-Bar Ranch does not replace access to formerly accessible state lands that were exchanged for this Ranch. Home building adjacent to the X-Bar Ranch and other nearby State Lands may require further limitations. The biggest challenge we face in this herd is trying to increase harvest when hunting pressure on the few accessible areas has decreased the quality and abundance of game. We propose to decrease the Type 6 license in Area 45 by 100, due to crowding on the HMAs and other accessible public lands.

Population: The Centennial Herd is well above its objective of 14,000. The herd's postseason population has been over 20,000 since the 2005 hunting season. Another confounding influence is that some segments of the herd move back and forth between Colorado and Wyoming. The 87 fawns/100 does is the highest ratio observed since 2004. The ratio of 91 fawns/100 does observed in Area 45 brings the fawn proportions for the entire herd up. We observed a marked decrease in the preseason buck:doe ratio from 58:100 in 2009 surveys to 39:100 in 2010 and 37:100 in 2011. Despite the high fawn/doe ratios, pronghorn abundance on accessible lands like the HMAs is lower than adjacent private lands with restricted access. Hunter success on Area 45 Type 6s has decreased the past 3 years indicating we may be at maximum hunter densities on the HMAs and hopefully reducing the 45 Type 6s will help alleviate this. Given the limits on obtaining harvests, we predict that the population will continue to increase after the 2012 season, unless we have a severe winter in 2012/2013.

Harvest: Pronghorn hunting in this herd remains relatively difficult because of limited public access and highly restricted hunting on private lands. During the 2011 hunting season, 1374

hunters harvested 1256 pronghorn at a success rate of 77%. These harvest statistics show a continuing decline in hunters, harvest and success. The limited public access seems to be causing poorer hunting on the HMAs and other accessible areas, although the herd is still growing. Since 1997, days hunted per animal harvest have increased from 1.6 to 4.2 days/animal in 2011. Success rates for each Hunt Area Type 6 licenses have continually decreased with Area 45,44 at or below 70% and Are 38 at 83%. The 2012 season would reduce pressure on Type 6 licenses. We expect to decrease harvest to 1,280 pronghorn. Access will be a big determinant in the actual harvest success.

Data Set: PR527_10.gn1 02/24/2012 10:26 am Page 1

CENTENNIAL PRONGHORN (A527) - 2011 Seasons using EOY 2007 Line Transect
Data from 1984 to 2012 Simulation from 1990 to 2012

Age Class	Init Pop. Male	Init Pop. Female	Prop. Presn Male	Prop. Presn Female	Mort% Postsn Male	Mort% Postsn Female	Effort Set 1 Male	Effort Set 1 Female	Effort Set 2 Male	Effort Set 2 Female
0	90.0	90.0	50.0	50.0	35.0	35.0	1.00	1.00	1.00	1.00
1	30.0	30.0	2.0	2.0	10.0	5.0	0.25	1.00	1.00	1.00
2	10.0	11.8	2.0	2.0	10.0	5.0	1.00	1.00	1.00	1.00
3	8.0	10.6	2.0	2.0	10.0	5.0	1.00	1.00	1.00	1.00
4	6.5	9.6	2.0	2.0	10.0	5.0	1.00	1.00	1.00	1.00
5	4.4	8.6	2.0	2.0	10.0	5.0	1.00	1.00	1.00	1.00
6	3.1	7.7	2.0	2.0	25.0	5.0	1.00	1.00	1.00	1.00
7	2.6	7.0	2.0	2.0	50.0	5.0	1.00	1.00	1.00	1.00
8	2.2	6.3	2.0	2.0	60.0	10.0	1.00	1.00	1.00	1.00
9	1.9	5.6	2.0	2.0	70.0	25.0	1.00	1.00	1.00	1.00
10	1.6	5.1	2.0	2.0	80.0	50.0	1.00	1.00	1.00	1.00
11	1.0	4.0	2.0	2.0	90.0	75.0	1.00	1.00	1.00	1.00
12	0.0	2.0	2.0	2.0	95.0	95.0	1.00	1.00	1.00	1.00
13	0.0	1.0	2.0	2.0	100.0	100.0	1.00	1.00	1.00	1.00

Sum = 360.6 Estimated Sum = 26750 Subadults: Ages 0 to 0

Data Set: PR527_10.gn1 02/24/2012 10:26 am Page 2

Bio-Year	Preseason MSI	MSI Function is Linear: Harvest Subadults#	Des. Pop Size in NA: Males#	Des. Pop Size in NA: Females#	Postseason MSI	Effort & Wound Set Used
1984	1.00	56	927	288	1.00	1
1985	1.00	53	745	497	1.00	1
1986	1.00	129	517	904	0.80	1
1987	1.00	159	487	803	1.20	1
1988	1.00	109	445	689	1.00	1
1989	1.00	81	439	599	1.20	1
1990	1.00	75	509	685	1.00	1
1991	0.93	96	572	799	0.80	1
1992	1.00	229	769	1523	2.20	1
1993	1.40	133	675	760	1.80	2
1994	1.41	100	417	579	0.80	2
1995	1.35	71	317	372	0.80	1
1996	1.11	51	284	236	0.20	2
1997	0.98	15	267	338	0.70	1
1998	1.01	36	401	321	0.70	1
1999	1.14	46	509	397	0.30	1
2000	1.11	73	556	456	0.70	1
2001	1.11	44	591	299	1.60	1
2002	1.12	43	809	298	1.80	1
2003	1.18	70	835	522	1.30	1
2004	0.90	87	989	406	1.00	1
2005	0.97	57	970	542	1.00	1
2006	1.07	63	828	672	1.00	1
2007	1.15	80	885	573	1.10	1
2008	1.09	80	923	617	1.20	1
2009	0.95	110	772	592	1.30	1
2010	1.01	73	713	546	1.40	1
2011	0.84	78	696	482	1.00	1
2012	0.85	80	727	540	1.00	1

Set 1	Wounding Loss	10.%	10.%	10.%	Yearling Male 10.%
Set 2	Wounding Loss	10.%	15.%	10.%	Yearling Male 15.%

Bio-Year	Young/100 Fems Age 1 - 1	Young/100 Fems Age 2 - 13	Young/100 Fems Disabled	Sex Ratio: 50 : 50
1985	0.0	180.0	0.0	
1986	0.0	180.0	0.0	
1987	0.0	180.0	0.0	
1988	0.0	180.0	0.0	
1989	0.0	180.0	0.0	
1990	0.0	180.0	0.0	
1991	0.0	180.0	0.0	
1992	0.0	180.0	0.0	
1993	0.0	180.0	0.0	
1994	0.0	180.0	0.0	
1995	0.0	180.0	0.0	
1996	0.0	180.0	0.0	
1997	0.0	180.0	0.0	
1998	0.0	180.0	0.0	
1999	0.0	180.0	0.0	
2000	0.0	180.0	0.0	
2001	0.0	180.0	0.0	
2002	0.0	180.0	0.0	
2003	0.0	180.0	0.0	
2004	0.0	180.0	0.0	
2005	0.0	180.0	0.0	
2006	0.0	180.0	0.0	
2007	0.0	180.0	0.0	
2008	0.0	180.0	0.0	
2009	0.0	180.0	0.0	
2010	0.0	180.0	0.0	
2011	0.0	180.0	0.0	
2012	0.0	180.0	0.0	
2013	0.0	180.0	0.0	

POP-II (V1.2.9) Simulation Output Tables for PR527_10.gn1, 02/24/2012 10:26 am

Table 1. Population Size During Bio-Year for PR527_10.gn1 02/24/2012 10:26 am

Bio-Year	Start	Pre-Season	Post Season	End	%Growth
1990	26750	19806	18410	14322	-4.6
1991	25522	20048	18434	15650	8.9
1992	27806	21415	18642	11344	-22.0
1993	21697	14133	12374	9009	-19.2
1994	17530	11269	10042	8811	-6.2
1995	16436	11051	10215	8880	0.6
1996	16535	12089	11447	11016	17.3
1997	19403	15077	14395	12372	13.1
1998	21946	16861	16027	13827	12.1
1999	24598	18143	17096	16136	16.2
2000	28577	21314	20121	17434	8.8
2001	31084	23121	22094	15778	-4.7
2002	29612	21511	20246	14136	-6.8
2003	27587	19318	17748	13848	-3.1
2004	26727	20682	19052	15476	8.1
2005	28892	22085	20359	16633	8.8
2006	31427	23156	21437	17559	5.4
2007	33132	23774	22082	17806	2.5
2008	33965	24770	22988	18031	0.6
2009	34152	26152	24531	18656	2.2
2010	34888	26314	24849	18684	1.4
2011	35367	28046	26664	21714	11.2
2012	39344	31482	30000	24559	13.6

Table 2. Preseason Natural Mortality for PR527_10.gn1 02/24/2012 10:26 am

Bio-Year	Sub-Adults	Adult Males	Adult Females	Total	% of Pop
1990	6676	106	162	6944	26.0
1991	5208	111	156	5474	21.4
1992	6078	136	177	6391	23.0
1993	7247	138	180	7565	34.9
1994	6007	105	149	6261	35.7
1995	5147	100	138	5385	32.8
1996	4249	84	114	4446	26.9
1997	4109	94	122	4325	22.3
1998	4835	110	140	5084	23.2
1999	6140	138	177	6455	26.2
2000	6905	159	199	7263	25.4
2001	7576	173	214	7963	25.6
2002	7747	152	202	8100	27.4
2003	7936	131	203	8270	30.0
2004	5796	94	155	6045	22.6
2005	6507	112	189	6807	23.6
2006	7915	132	224	8271	26.3
2007	8954	154	250	9358	28.2
2008	8807	149	239	9195	27.1
2009	7657	132	210	8000	23.4
2010	8197	149	228	8574	24.6
2011	7007	124	190	7321	20.7
2012	7493	150	219	7862	20.0

Table 3. Harvest Mortality for PR527_10.gn1 02/24/2012 10:26 am

Bio-Year	Sub-Adults	Adult Males	Adult Females	Total	% of Pop

1990	75	509	685	1269	6.4
1991	96	572	799	1467	7.3
1992	229	769	1523	2521	11.8
1993	133	675	760	1568	11.1
1994	100	417	579	1096	9.7
1995	71	317	372	760	6.9
1996	51	284	236	571	4.7
1997	15	267	338	620	4.1
1998	36	401	321	758	4.5
1999	46	509	397	952	5.2
2000	73	556	456	1085	5.1
2001	44	591	299	934	4.0
2002	43	809	298	1150	5.3
2003	70	835	522	1427	7.4
2004	87	989	406	1482	7.2
2005	57	970	542	1569	7.1
2006	63	828	672	1563	6.7
2007	80	885	573	1538	6.5
2008	80	923	617	1620	6.5
2009	110	772	592	1474	5.6
2010	73	713	546	1332	5.1
2011	78	696	482	1256	4.5
2012	80	727	540	1347	4.3

Table 4. Harvest Percentages for PR527_10.gn1 02/24/2012 10:26 am

Bio-Year	Sub-Adults	Adult Males	Adult Females	Total	Yearling Males
1990	1.1	9.8	8.6	6.41	15.4
1991	1.6	9.8	9.7	7.32	12.3
1992	3.8	11.6	17.5	11.77	10.2
1993	4.3	14.1	12.2	11.09	13.6
1994	4.0	11.5	11.3	9.73	14.7
1995	2.9	8.8	7.5	6.88	7.1
1996	1.5	7.7	4.7	4.72	23.0
1997	0.4	5.7	5.5	4.11	10.7
1998	0.8	7.5	4.7	4.50	9.5
1999	1.0	8.6	5.2	5.25	9.4
2000	1.3	7.9	5.2	5.09	9.1
2001	0.7	7.8	3.2	4.04	8.2
2002	0.7	12.2	3.4	5.35	5.7
2003	1.3	15.4	6.2	7.39	5.9
2004	1.2	19.3	4.8	7.17	9.0
2005	0.8	17.2	5.7	7.10	14.0
2006	0.9	13.7	6.6	6.75	12.3
2007	1.2	13.5	5.4	6.47	11.0
2008	1.1	13.8	5.7	6.54	9.4
2009	1.3	11.3	5.5	5.64	9.8
2010	0.9	9.9	4.9	5.06	10.0
2011	0.8	9.6	4.3	4.48	8.6
2012	0.8	8.4	4.3	4.28	12.1

Table 5. Postseason Natural Mortality for PR527_10.gn1 02/24/2012 10:26 am

Bio-Year	Sub-Adults	Adult Males	Adult Females	Total	% of Pop
1990	2308	809	970	4087	22.2
1991	1648	558	577	2784	15.1
1992	4486	1544	1268	7298	39.1
1993	1865	829	672	3365	27.2
1994	673	299	260	1231	12.3
1995	672	362	301	1335	13.1

1996	235	112	84	431	3.8
1997	1044	574	405	2023	14.1
1998	1151	600	450	2201	13.7
1999	481	246	233	960	5.6
2000	1337	672	678	2687	13.4
2001	3375	1526	1415	6316	28.6
2002	3805	1296	1009	6110	30.2
2003	2474	768	658	3900	22.0
2004	2446	549	582	3576	18.8
2005	2396	609	720	3726	18.3
2006	2383	665	830	3878	18.1
2007	2514	755	1007	4276	19.4
2008	3051	795	1111	4957	21.6
2009	3796	895	1184	5874	23.9
2010	3898	1073	1194	6165	24.8
2011	3357	812	782	4950	18.6
2012	3517	1005	919	5442	18.1

Table 6. Preseason Ratios for PR527_10.gn1 02/24/2012 10:26 am

Bio-Year	Subadults /100 1+F	2+ Males /100 1+F	Yr. Males /100 1+F	Ad Males /100 1+F
1990	84.0	37.8	27.4	65.2
1991	73.0	45.6	25.6	71.2
1992	69.9	52.5	23.9	76.4
1993	49.8	66.2	10.4	76.7
1994	49.0	60.2	10.4	70.6
1995	49.9	55.8	17.0	72.7
1996	68.1	56.7	16.9	73.5
1997	70.2	52.1	25.1	77.2
1998	69.8	55.4	23.2	78.6
1999	61.1	55.4	22.9	78.2
2000	63.2	57.2	22.9	80.1
2001	64.4	59.4	21.4	80.8
2002	69.1	60.4	14.7	75.1
2003	65.8	51.6	13.0	64.6
2004	83.5	43.2	17.2	60.3
2005	72.5	35.8	23.4	59.1
2006	67.3	38.0	21.3	59.3
2007	62.4	41.2	20.4	61.6
2008	68.4	43.8	18.3	62.1
2009	78.0	43.9	19.0	63.0
2010	72.6	45.1	20.1	65.2
2011	87.1	47.4	18.0	65.4
2012	79.9	44.0	24.1	68.2

Table 7. Postseason Ratios for PR527_10.gn1 02/24/2012 10:26 am

Bio-Year	Subadults /100 1+F	2+ Males /100 1+F	Yr. Males /100 1+F	Ad Males /100 1+F
1990	91.7	35.2	29.1	64.3
1991	80.3	43.5	27.6	71.2
1992	83.0	54.2	28.4	82.6
1993	54.7	64.1	10.1	74.2
1994	53.5	59.6	10.3	69.9
1995	52.7	53.7	17.9	71.6
1996	70.6	54.4	16.2	70.7
1997	74.4	50.9	26.1	77.1
1998	73.0	52.2	23.8	76.1
1999	64.1	51.6	23.5	75.2
2000	66.0	53.9	23.6	77.5
2001	66.2	55.0	21.5	76.6
2002	71.2	52.8	14.7	67.5

2003	69.6	44.3	13.3	57.6
2004	87.0	33.3	16.9	50.1
2005	76.6	27.9	23.2	51.2
2006	71.8	32.5	21.8	54.3
2007	65.4	35.2	20.6	55.8
2008	72.2	37.6	18.6	56.2
2009	81.8	39.2	19.4	58.7
2010	76.0	40.9	20.5	61.5
2011	90.7	43.2	18.2	61.4
2012	83.1	40.4	24.5	64.9

Table 8. End of Year Ratios for PR527_10.gn1 02/24/2012 10:26 am

Bio-Year	Subadults /100 Adlts	Subadults /100 1+F	Yr. Males /100 1+F	Ad Males /100 1+F
1990	42.7	68.9	30.3	61.3
1991	37.1	62.8	27.6	69.0
1992	13.4	23.3	27.0	73.9
1993	13.8	23.1	9.5	67.2
1994	24.4	40.9	10.0	67.1
1995	24.2	40.6	17.7	68.2
1996	39.4	66.9	16.2	69.6
1997	35.1	60.5	26.2	72.1
1998	34.5	59.3	23.8	71.8
1999	34.1	59.3	23.6	74.1
2000	30.9	54.3	23.9	75.6
2001	20.2	34.5	21.4	70.8
2002	18.8	29.9	13.7	59.3
2003	27.2	41.4	12.6	52.1
2004	41.5	60.9	16.4	46.7
2005	36.5	54.1	22.7	48.2
2006	33.7	51.2	21.5	51.8
2007	29.1	44.7	20.4	53.6
2008	30.5	47.0	18.4	54.3
2009	32.2	50.4	19.1	56.5
2010	27.7	43.8	19.9	57.8
2011	40.3	63.6	17.7	58.1
2012	36.2	58.4	23.9	61.3

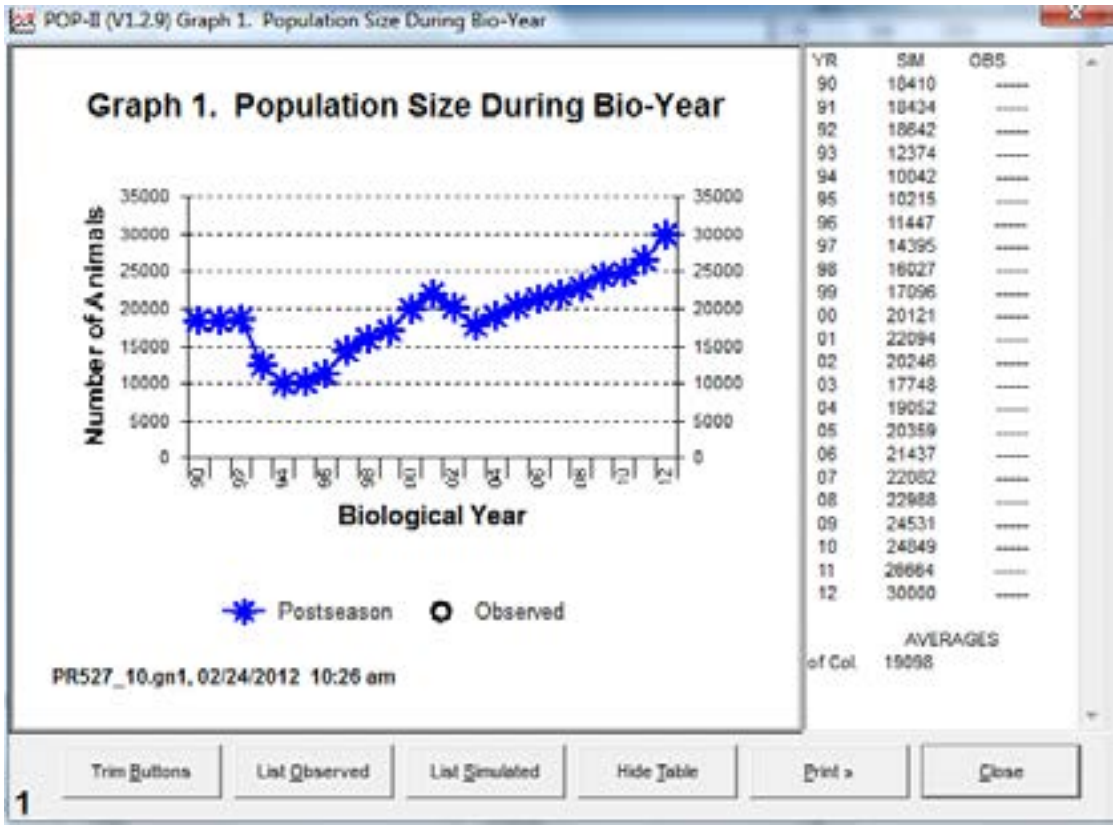
Table 9. Reproduction at Start of Bio-Year for PR527_10.gn1 02/24/2012 10:26 am

Bio-Year	Young / 100 AF 1 +	Sub-Ad. / 100 AF 1 +	Total Young	Total Sub-Adult	Total Females 1 +
1990	165	165	13353	13353	8108
1991	134	134	11200	11200	8365
1992	137	137	12156	12156	8872
1993	161	161	10353	10353	6422
1994	161	161	8521	8521	5281
1995	149	149	7625	7625	5101
1996	150	150	7655	7655	5117
1997	135	135	8387	8387	6217
1998	138	138	9573	9573	6927
1999	139	139	10771	10771	7758
2000	139	139	12441	12441	8962
2001	142	142	13650	13650	9643
2002	154	154	13834	13834	9011
2003	157	157	13451	13451	8590
2004	149	149	12879	12879	8637
2005	138	138	13416	13416	9724
2006	142	142	14794	14794	10444
2007	143	143	15573	15573	10865
2008	147	147	16160	16160	10986

2009	146	146	16121	16121	11063
2010	144	144	16232	16232	11291
2011	148	148	16682	16682	11296
2012	137	137	17630	17630	12911

Table A. Intra-Annual Natural Survival(%) for PR527_10.gn1 02/24/2012 10:26 am

Bio-Years	Sub Adults	Adult Males	Adult Females	Overall Survival
1990-1991	63.79	80.96	84.90	76.35
1991-1992	70.56	87.51	90.28	83.20
1992-1993	22.36	71.32	79.64	59.15
1993-1994	35.96	77.09	85.10	70.75
1994-1995	70.06	88.06	91.68	85.37
1995-1996	70.40	86.92	91.31	85.00
1996-1997	91.18	94.78	96.29	94.35
1997-1998	73.97	85.22	91.05	84.21
1998-1999	73.78	85.75	90.89	84.30
1999-2000	87.51	93.30	94.60	92.29
2000-2001	73.82	87.52	89.76	84.72
2001-2002	43.01	76.34	82.56	69.81
2002-2003	36.13	75.53	86.03	68.17
2003-2004	53.52	81.43	89.93	76.62
2004-2005	63.74	84.71	90.96	79.65
2005-2006	63.61	84.82	89.97	79.95
2006-2007	63.50	85.08	89.15	80.03
2007-2008	60.16	84.55	87.95	78.88
2008-2009	56.90	84.32	87.27	76.95
2009-2010	53.40	83.34	86.61	74.52
2010-2011	50.14	81.92	87.10	73.93
2011-2012	63.90	86.02	91.03	80.05


POP-II (V1.2.9) Graph 1. Population Size During Bio-Year
Graph 1. Population Size During Bio-Year
Number of Animals
Biological Year
Postseason
Observed
PR527_10.gn1, 02/24/2012 10:26 am
YR SIM OBS
90 18410 -----
91 18424 -----
92 18642 -----
93 12374 -----
94 10042 -----
95 10215 -----
96 11447 -----
97 14395 -----
98 16027 -----
99 17096 -----
00 20121 -----
01 22094 -----
02 20246 -----
03 17748 -----
04 19052 -----
05 20359 -----
06 21437 -----
07 22082 -----
08 22988 -----
09 24531 -----
10 24849 -----
11 26664 -----
12 30000 -----
AVERAGES
of Col 19098
Trim Buttons
List Observed
List Simulated
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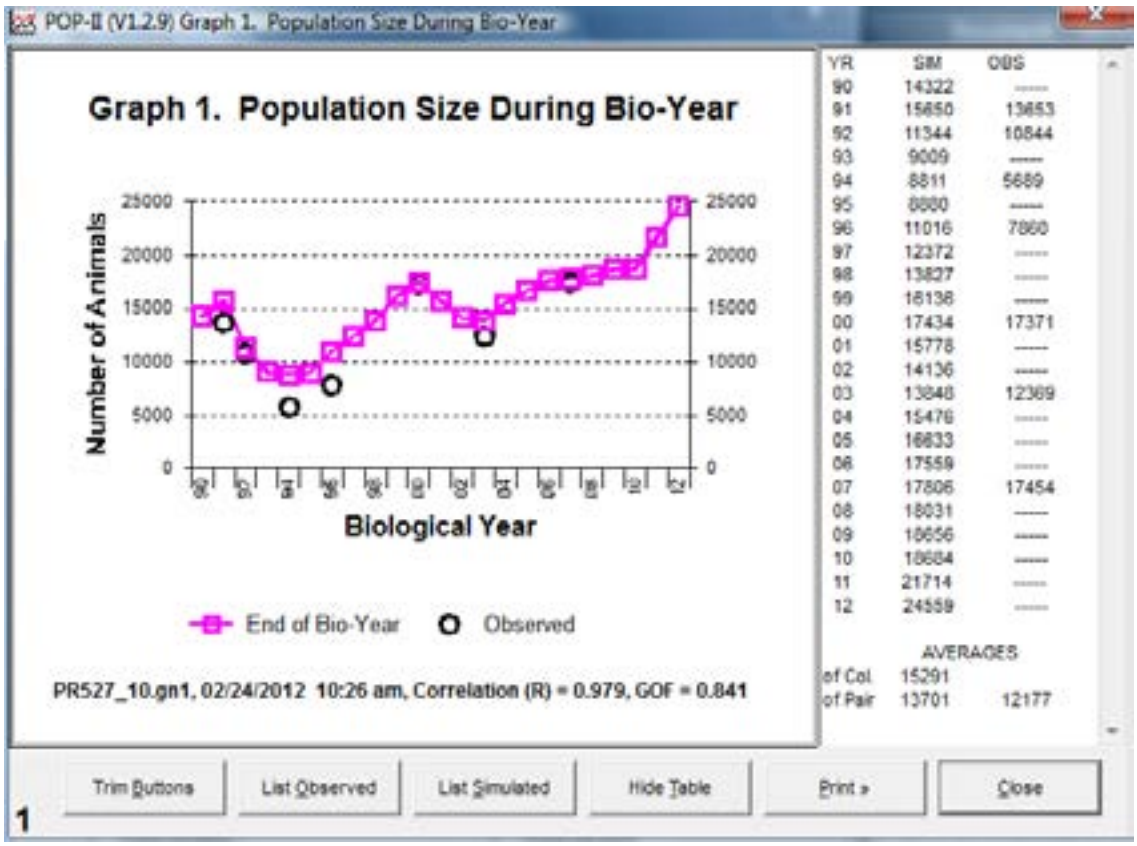
POP-II (V1.2.9) Graph 1. Population Size During Bio-Year
Graph 1. Population Size During Bio-Year
Number of Animals
Biological Year
End of Bio-Year
Observed
PR527_10.gn1, 02/24/2012 10:26 am, Correlation (R) = 0.979, GOF = 0.841
YR SIM OBS
90 14322 -----
91 15650 13653
92 11344 10844
93 9009 -----
94 8811 5689
95 8880 -----
96 11016 7860
97 12372 -----
98 13827 -----
99 16136 -----
00 17434 17371
01 15778 -----
02 14136 -----
03 13848 12369
04 15476 -----
05 16833 -----
06 17559 -----
07 17806 17454
08 18031 -----
09 18656 -----
10 18684 -----
11 21714 -----
12 24559 -----
AVERAGES
of Col 15291
of Pair 13701 12177
Trim Buttons
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List Simulated
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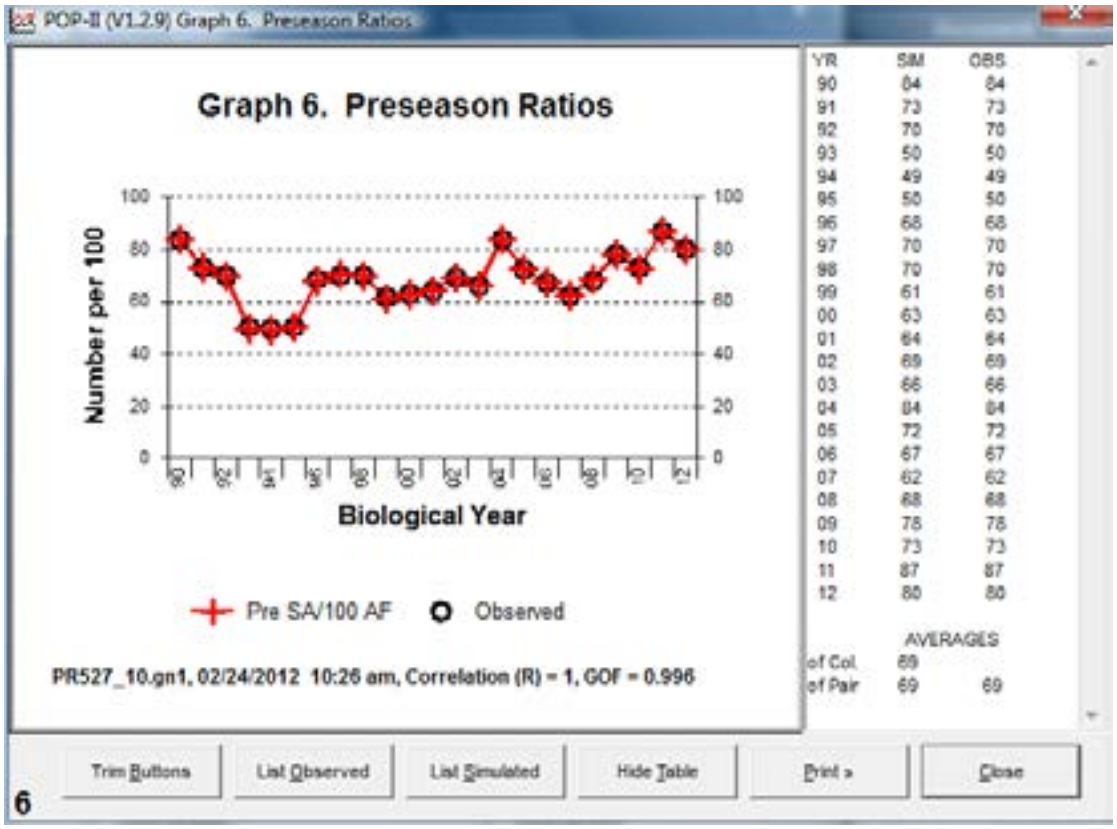
POP-II (V1.2.9) Graph 6. Preseason Ratios
Graph 6. Preseason Ratios
Number per 100
Biological Year
Pre SA/100 AF
Observed
PR527_10.gn1, 02/24/2012 10:26 am, Correlation (R) = 1, GOF = 0.996
YR SIM OBS
90 84 84
91 73 73
92 70 70
93 50 50
94 49 49
95 50 50
96 68 68
97 70 70
98 70 70
99 61 61
00 63 63
01 64 64
02 69 69
03 66 66
04 84 84
05 72 72
06 67 67
07 62 62
08 68 68
09 78 78
10 73 73
11 87 87
12 80 80
AVERAGES
of Col. 69
of Pair 69 69
Trim Buttons
List Observed
List Simulated
Hide Table
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Close
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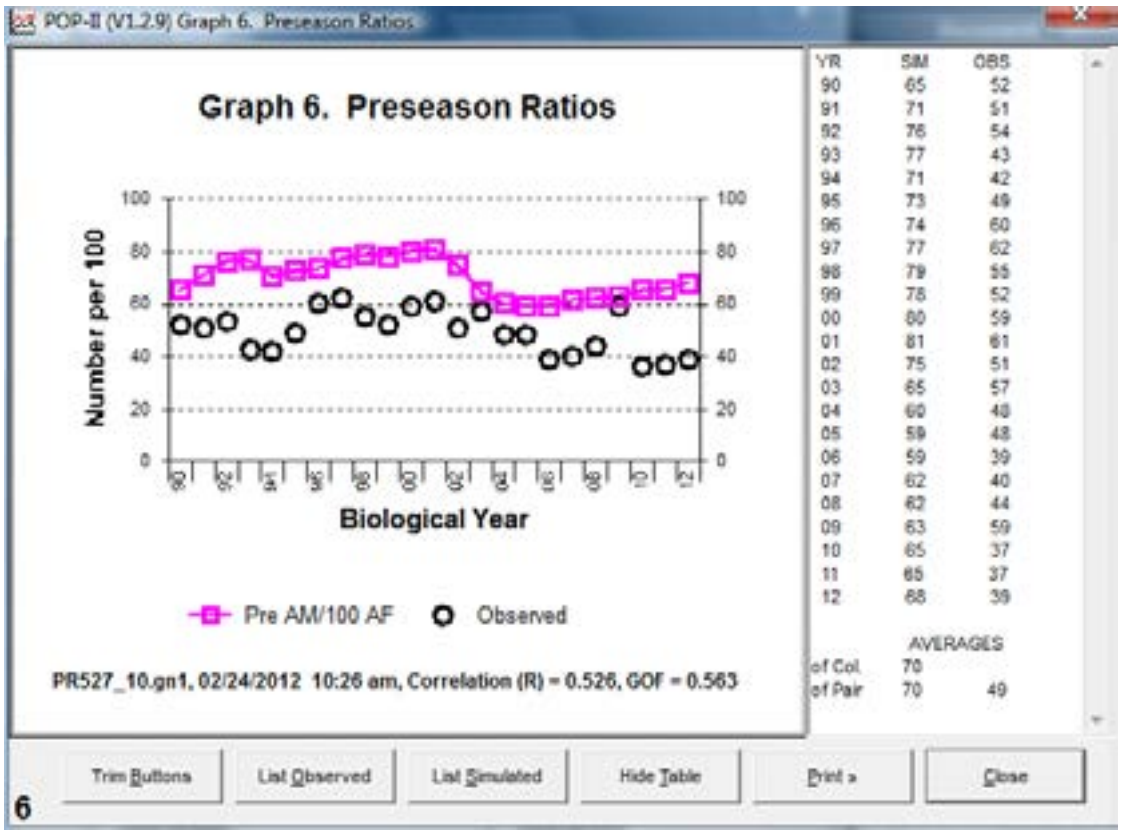
POP-II (V1.2.9) Graph 6. Preseason Ratios
Graph 6. Preseason Ratios
Number per 100
Biological Year
Pre AM/100 AF
Observed
PR527_10.gn1, 02/24/2012 10:26 am, Correlation (R) = 0.526, GOF = 0.563
YR SIM OBS
90 65 52
91 71 51
92 76 54
93 77 43
94 71 42
95 73 49
96 74 60
97 77 62
98 79 55
99 78 52
00 80 59
01 81 61
02 75 51
03 65 57
04 60 48
05 59 48
06 59 39
07 62 40
08 62 44
09 63 59
10 65 37
11 65 37
12 68 39
AVERAGES
of Col. 70
of Pair 70 49
Trim Buttons
List Observed
List Simulated
Hide Table
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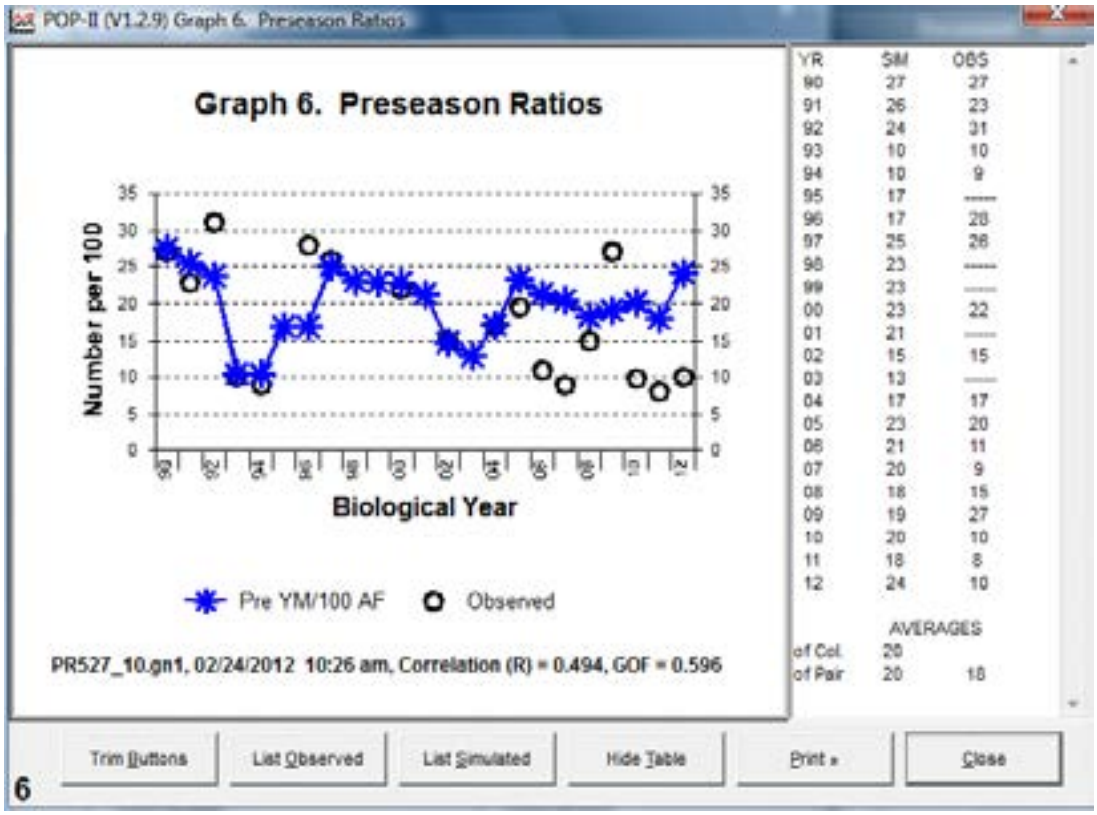
POP-II (V1.2.9) Graph 6. Preseason Ratios
Graph 6. Preseason Ratios
Number per 100
Biological Year
Pre YM/100 AF
Observed
PR527_10.gn1, 02/24/2012 10:26 am, Correlation (R) = 0.494, GOF = 0.596
YR SIM OBS
90 27 27
91 26 23
92 24 31
93 10 10
94 10 9
95 17 ----
96 17 28
97 25 28
98 23 ----
99 23 ----
00 23 22
01 21 ----
02 15 15
03 13 ----
04 17 17
05 23 20
06 21 11
07 20 9
08 18 15
09 19 27
10 20 10
11 18 8
12 24 10
AVERAGES
of Col. 20
of Pair 20 18
Trim Buttons
List Observed
List Simulated
Hide Table
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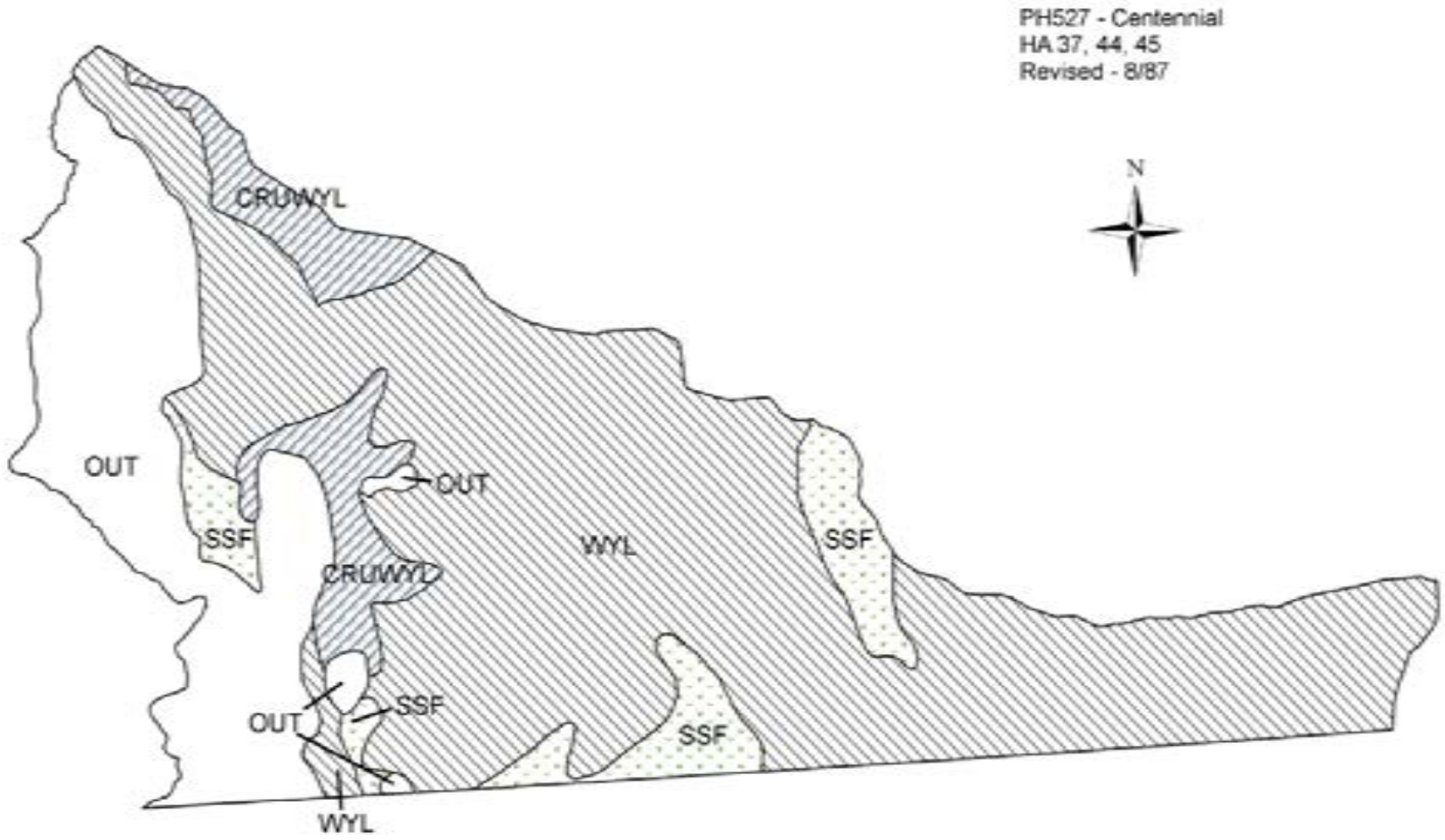
PH527 - Centennial
HA 37, 44, 45
Revised - 8/87
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OUT
OUT
SSF
CRUWYD
WYL
SSF
OUT
SSF
SSF
WYL

2011 - JCR Evaluation Form

SPECIES: Pronghorn | PERIOD: 6/1/2011 - 5/31/2012

HERD: PR528 - ELK MOUNTAIN

HUNT AREAS: 50 | PREPARED BY: WILL SCHULTZ

	2006 - 2010 Average	2011	2012 Proposed
Population:	9,600	8,721	7,972
Harvest:	848	1,007	1,000
Hunters:	923	1,048	1,050
Hunter Success:	92%	96%	95%
Active Licenses:	996	1,141	1,250
Active License Percent:	85%	88%	80%
Recreation Days:	3,041	3,703	3,700
Days Per Animal:	3.6	3.7	3.7
Males per 100 Females	45	29	
Juveniles per 100 Females	50	40	

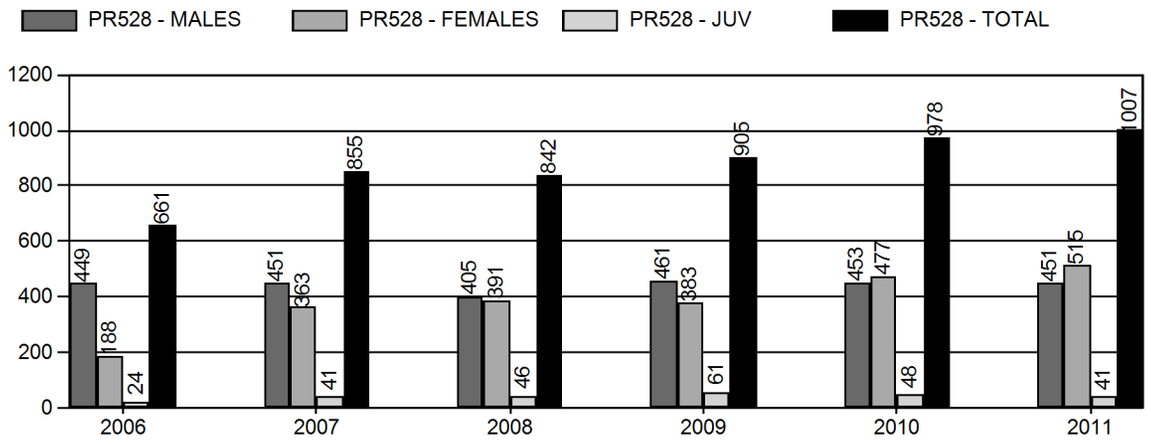
Population Objective:	5,000
Management Strategy:	Recreational
Percent population is above (+) or below (-) objective:	74%
Number of years population has been + or - objective in recent trend:	10
Model Date:	03/03/2012

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

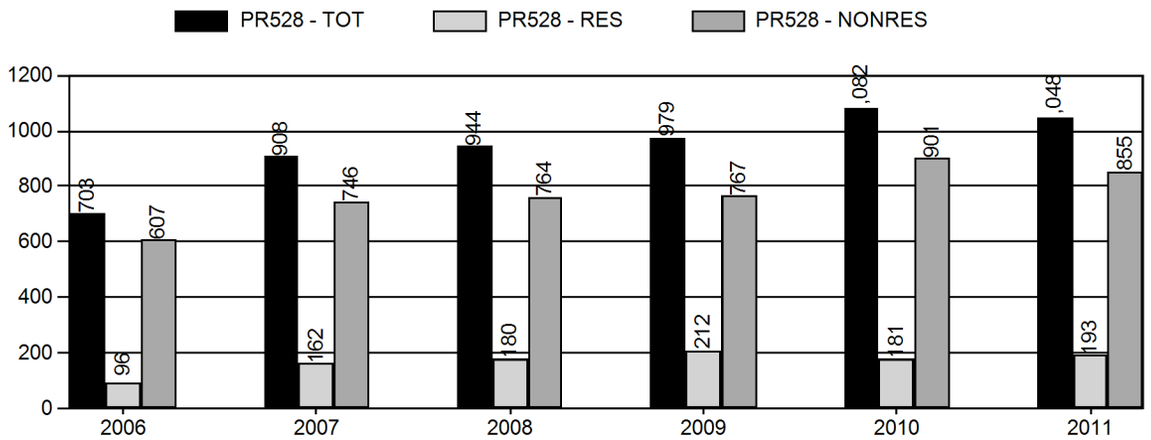
	JCR Year	Proposed
Females ≥ 1 year old:	10.1%	11.1%
Males ≥ 1 year old:	16.8%	18.5%
Juveniles (< 1 year old):	2.0%	2.3%
Total:	10.25%	11.02%
Proposed change in post-season population:	-11.3%	-12.1%

Population Size - Postseason

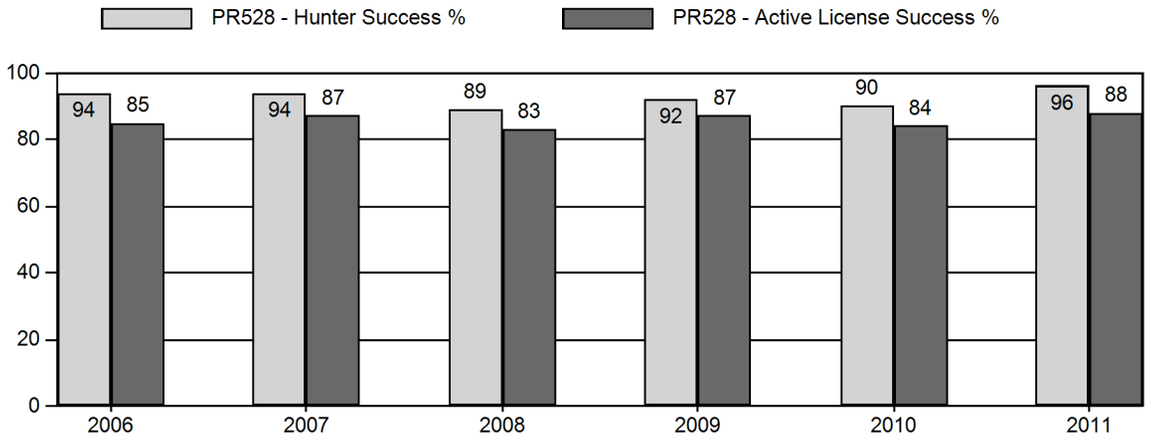
Harvest



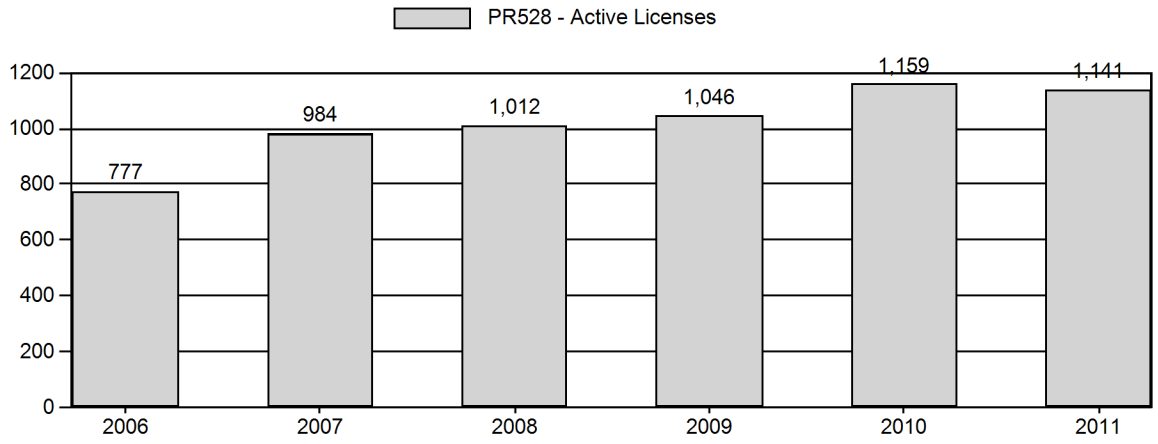
Number of Hunters



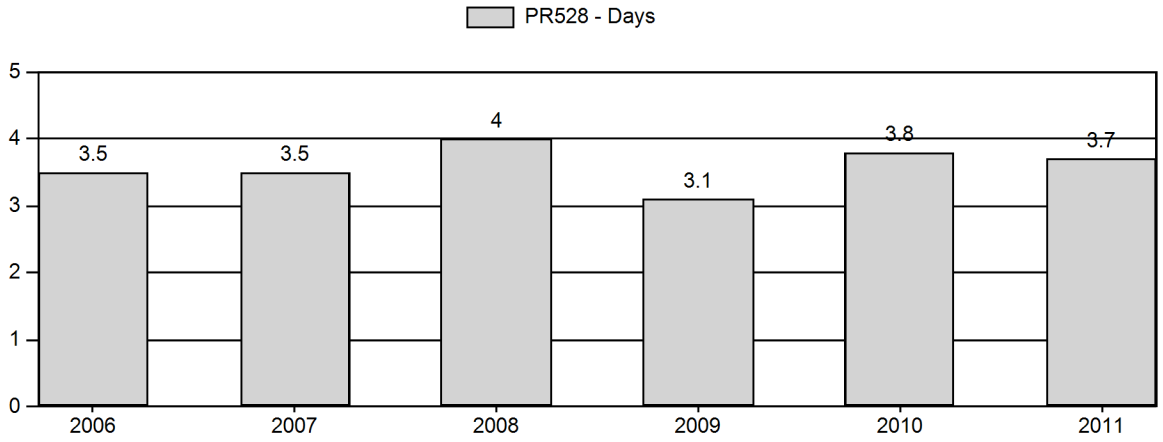
Harvest Success



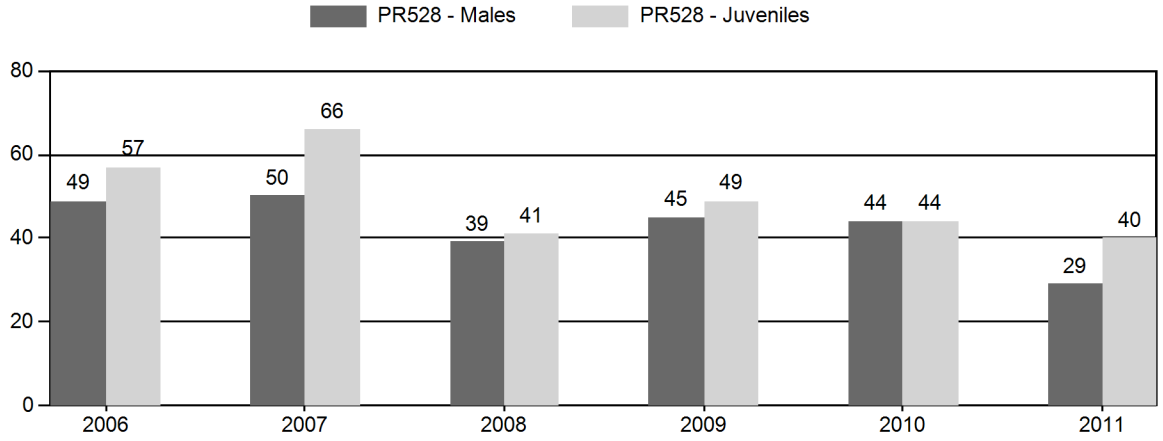
Active Licenses



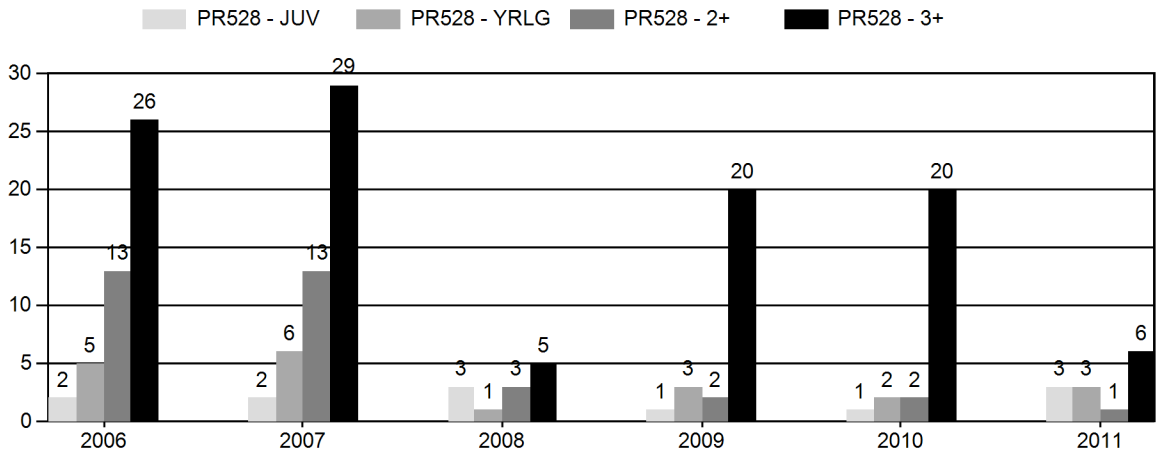
Days Per Animal Harvested



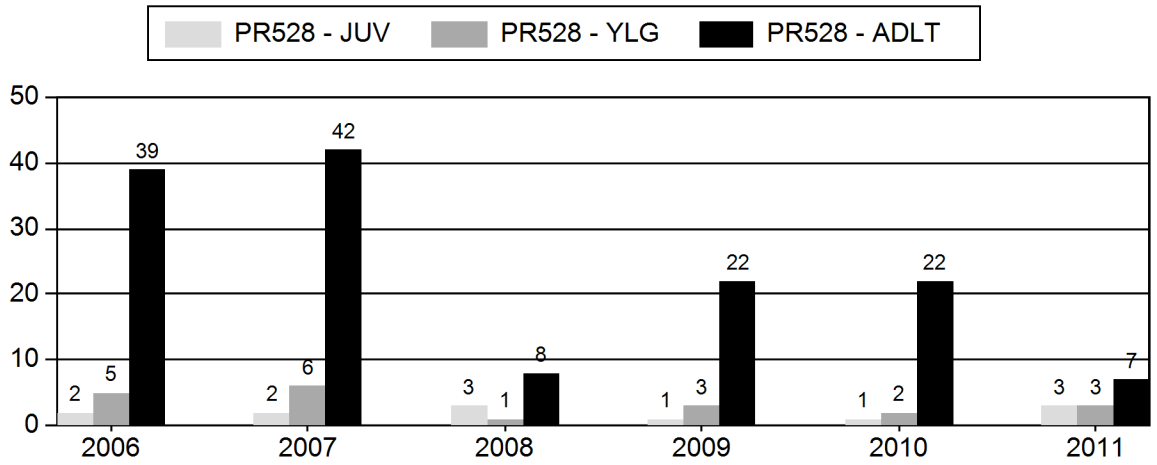
Preseason Animals per 100 Females



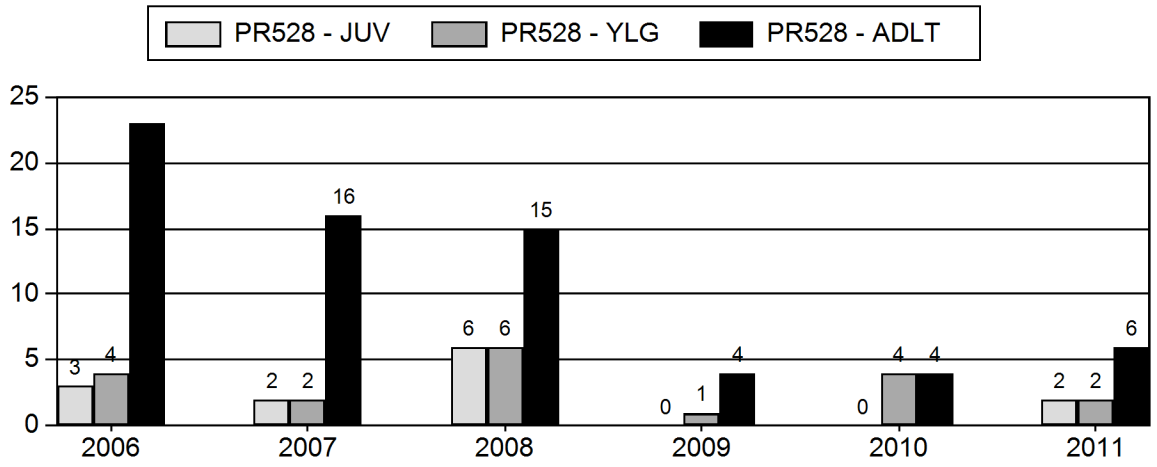
Age Structure of Field Checked Males



Age Structure Data (Field and Laboratory) - Male



Age Structure Data (Field and Laboratory) - Female



2006 - 2011 Preseason Classification Summary

for Pronghorn Herd PR528 - ELK MOUNTAIN

		MALES				FEMALES		JUVENILES				Males to 100 Females				Young to		
Year	Pre Pop	Ylg	Adult	Total	%	Total	%	Total	%	Tot Cls	Cls Obj	Ylng	Adult	Total	Conf Int	100 Fem	Conf Int	100 Adult
2006	11,000	0	0	530	24%	1,090	49%	620	28%	2,240	1,619	0	0	49	± 3	57	± 4	38
2007	10,000	52	164	216	23%	429	46%	284	31%	929	2,120	12	38	50	± 0	66	± 0	44
2008	9,900	84	234	318	22%	808	55%	331	23%	1,457	1,831	10	29	39	± 4	41	± 4	29
2009	10,395	111	272	383	23%	846	52%	412	25%	1,641	1,617	13	32	45	± 4	49	± 4	34
2010	11,168	91	305	396	23%	907	53%	396	23%	1,699	1,668	10	34	44	± 4	44	± 4	30
2011	9,829	82	140	222	17%	764	59%	303	24%	1,289	0	11	18	29	± 3	40	± 4	31

2011 HUNTING SEASONS

PR528 - ELK MOUNTAIN

Hunt Area	Add'l Hunt Areas	Type	Quota	Season Dates	Limitations
50		Type 0	50	09/01 - 09/15	any antelope, muzzleloader only
50		Type 1	500	09/16 - 10/31	Any
50		Type 6	700	09/16 - 10/31	Reduced Price doe/fawn

Area	Type	Active Lic/Htrs	Buck	Doe	Fawn	Total	Success	Days/Harvest	Days	Licenses Sold
2011										
50 EK MOUNTAIN										
	Type 1	455	407	13	8	428	94.10%	3	1283	498
	Type 6	632	0	500	33	533	84.30%	4.2	2254	698
	Type 0	54	44	2	0	46	85.20%	3.6	166	57
Pooled Total		1048 (1141)*	451	515	41	1007	96.10% (88.3%)*	3.7	3703	
Pooled Resident		193	100	75	0	175	90.70%	4.6	805	
Pooled Nonresident		855	351	440	41	832	97.30%	3.5	2898	
2011 Hunt Area Total		1048 (1141)*	451	515	41	1007	96.10% (88.3%)*	3.7	3703	1253
2011 Herd Total		1048 (1141)*	451	515	41	1007	96.10% (88.3%)*	3.7	3703	1253

*Active Licenses

2006 - 2011 Harvest Age Structure

for Pronghorn Herd PR528 - ELK MOUNTAIN

	Males										Females										Herd
Year	Juv	1	% 1 *	2	3 ^	% 3 **	Total Aged ++	Not Aged +++	Unk	Total Chkd	Juv	1	% 1 *	2	3 ^	% 3 **	Total Aged ++	Not Aged +++	Unk	Total Chkd	Total
2006	2	5	11%	13	26	59%	46	0	0	46	3	4	15%	3	20	74%	30	0	0	30	76
2007	2	6	12%	13	23	55%	44	6	0	50	2	2	11%	4	7	54%	15	5	0	20	70
2008	3	1	11%	3	5	56%	12	0	4	16	6	6	29%	5	10	48%	27	0	15	42	58
2009	1	3	12%	2	5	50%	11	15	0	26	0	1	20%	0	2	67%	3	2	7	12	38
2010	1	2	8%	2	4	50%	9	16	1	26	0	4	50%	0	0	0%	4	4	39	47	73
2011	3	3	30%	1	0	0%	7	6	9	22	2	2	25%	1	3	50%	8	2	16	26	48

* Percent of aged animals (including unaged adults but excluding juveniles) 1 1/2 years old

^ Number of animals three years old and older. Animals aged older than three (excluding unaged adults) are lumped into this three plus category

** Percent of aged animals (not including juveniles or unaged adults) three years old or older

++ includes juveniles

+++ Unaged adults - unaged animals older than yearlings

ELK MOUNTAIN PRONGHORN (PR528)
Hunt Area 50
2012 Season Recommendations

Hunt Area	Type	Date of Seasons Opens	Closes	Limitations
50	1	Sept. 16	Oct. 31	Limited quota; 500 licenses any antelope
	6	Sept. 16	Oct. 31	Limited quota; 700 licenses doe or fawn.
	0	Sept. 1	Sept. 15	Limited quota; 50 licenses any antelope, muzzle-loading firearms only
Archery		Aug. 15		Refer to Section 4 of this Chapter

Summary of Proposed Changes in License Numbers

Hunt Area	Type	Change From 2011
		No change

Management Evaluation

Estimates indicate the Elk Mountain herd is 74% over the management objective of 5,000. Hunter access to private lands is limited, particularly east of Elk Mountain, where most pronghorn in this herd unit are found during the hunting season. Private lands open to hunters receive a large amount of pressure. Preseason ratios for this herd were 29 bucks and 40 fawns/100does in 2011. Buck ratios and fawn ratios decreased in recent classification trend. Past classifications had been collected from fixed-wing aircraft. However, the 2011 classification survey was conducted from the ground and may have been biased in comparison to the previous surveys.

The 2011 postseason population estimate was 8,721 pronghorn. The current population estimate was derived from a POP-II population model with a 2010 end-of-year population estimate aligned to the results of a corresponding 2010 end-of-year line transect density estimate survey. We consider the POP-II population model for the Elk Mountain Herd Unit to be high quality because the model has been realigned at regular intervals with an independent population estimate derived from line transect density surveys. Preseason classification survey data have varied with effort but are generally considered adequate. Harvest survey information used in the POP-II model is generally considered reliable because of the sampling technique applied to a limited quota hunt area. Herd unit boundaries, although not impenetrable, appear very good geographically.

Harvest

Preliminary data for the 2011 hunting season indicated 1,007 pronghorn were harvested in which was an increase of 3% from 2010. Harvest success was 88% for 1,048 active licenses in 2011.

2012 Proposed Season

The 2012 season should provide an opportunity to continue to decrease this population towards the management objective. Landowners appear to be allowing more access for pronghorn harvest, especially doe and fawn harvest. The proposed season should decrease this population to a more desirable level.

Data Set: PR528_2012_SEASONS.GN1 03/03/2012 10:19 pm Page 1

2012_PR528_Season
Data from 2004 to 2013 Simulation from 2007 to 2013

Age Class	Init Pop. Prop. Male	Init Pop. Prop. Female	Presn Mort% Male	Presn Mort% Female	Postsn Mort% Male	Postsn Mort% Female	Effort Set 1 Male	Effort Set 1 Female	Effort Set 2 Male	Effort Set 2 Female
0	90.0	90.0	50.0	50.0	55.0	55.0	1.00	1.00	1.00	1.00
1	11.9	21.2	2.0	2.0	5.0	5.0	0.25	1.00	0.75	1.00
2	9.2	16.9	2.0	2.0	5.0	5.0	1.00	1.00	1.00	1.00
3	7.1	13.5	2.0	2.0	5.0	5.0	1.00	1.00	1.00	1.00
4	5.4	10.8	2.0	2.0	5.0	5.0	1.00	1.00	1.00	1.00
5	4.2	8.7	2.0	2.0	5.0	5.0	1.00	1.00	1.00	1.00
6	3.2	6.9	2.0	2.0	15.0	5.0	1.00	1.00	1.00	1.00
7	2.5	5.5	2.0	2.0	25.0	10.0	1.00	1.00	1.00	1.00
8	1.9	4.4	2.0	2.0	50.0	15.0	1.00	1.00	1.00	1.00
9	1.5	3.6	2.0	2.0	75.0	20.0	1.00	1.00	1.00	1.00
10	1.1	2.8	2.0	2.0	95.0	25.0	1.00	1.00	1.00	1.00
11	0.9	2.3	2.0	2.0	97.0	50.0	1.00	1.00	1.00	1.00
12	0.7	1.8	2.0	2.0	99.0	75.0	1.00	1.00	1.00	1.00
13	0.5	1.5	2.0	2.0	100.0	100.0	1.00	1.00	1.00	1.00

Sum = 330.0 Estimated Sum = 25130 Subadults: Ages 0 to 0

Data Set: PR528_2012_SEASONS.GN1 03/03/2012 10:19 pm Page 2

Bio-Year	Preseason MSI	MSI Function is Linear Harvest // Des. Pop Size in NA Subadults#	Males#	Females#	Postseason MSI	Effort & Wound Set Used
2007	1.26	41	451	363	1.35	1
2008	1.51	46	405	391	0.67	1
2009	1.39	61	461	383	1.14	1
2010	1.47	48	453	477	1.00	1
2011	1.52	41	451	515	0.91	1
2012	1.42	50	450	500	1.09	1
2013	1.42	50	450	500	1.09	1
Set 1	Wounding Loss	10.%	10.%	10.%	Yearling Male 10.%	
Set 2	Wounding Loss	10.%	10.%	10.%	Yearling Male 10.%	

Data Set: PR528_2012_SEASONS.GN1 03/03/2012 10:19 pm Page 3

Bio-Year	Young/100 Fems Age 1 - 1	Young/100 Fems Age 2 - 13	Young/100 Fems Disabled	Sex Ratio: 50 : 50
2005	0.0	180.0	0.0	
2006	0.0	180.0	0.0	
2007	0.0	180.0	0.0	
2008	0.0	180.0	0.0	
2009	0.0	180.0	0.0	
2010	0.0	180.0	0.0	
2011	0.0	180.0	0.0	
2012	0.0	180.0	0.0	
2013	0.0	180.0	0.0	
2014	0.0	180.0	0.0	

POP-II (V1.2.9) Simulation Output Tables for PR528_2012_SEASONS.GN1, 03/03/2012 10:19 pm

Table 1. Population Size During Bio-Year for PR528_2012_SEASONS.GN1 03/03/2012 10:19 pm

Bio-Year	Start	Pre-Season	Post Season	End	%Growth
2007	25130	16194	15253	9940	-17.1
2008	20841	12300	11374	9912	-3.0
2009	20224	12772	11776	8923	-8.5
2010	18501	11190	10114	8046	-10.7
2011	**16529**	**9829**	**8721**	**7126**	**-11.9**
2012	14560	9072	7972	6033	-15.6
2013	12282	7668	6568	4933	-18.6

Table 2. Preseason Natural Mortality for PR528_2012_SEASONS.GN1 03/03/2012 10:19 pm

Bio-Year	Sub-Adults	Adult Males	Adult Females	Total	% of Pop
2007	8648	96	192	8936	35.6
2008	8240	98	203	8541	41.0
2009	7176	93	182	7452	36.8
2010	7048	89	173	7311	39.5
2011	**6455**	**84**	**160**	**6700**	**40.5**
2012	5285	71	132	5488	37.7
2013	4443	61	111	4614	37.6

Table 3. Harvest Mortality for PR528_2012_SEASONS.GN1 03/03/2012 10:19 pm

Bio-Year	Sub-Adults	Adult Males	Adult Females	Total	% of Pop
2007	41	451	363	855	5.3
2008	46	405	391	842	6.8
2009	61	461	383	905	7.1
2010	48	453	477	978	8.7
2011	**41**	**451**	**515**	**1007**	**10.2**
2012	50	450	500	1000	11.0
2013	50	450	500	1000	13.0

Table 4. Harvest Percentages for PR528_2012_SEASONS.GN1 03/03/2012 10:19 pm

Bio-Year	Sub-Adults	Adult Males	Adult Females	Total	Yearling Males
2007	0.8	12.1	4.9	5.28	7.2
2008	1.7	12.9	6.0	6.85	5.9
2009	1.9	14.1	6.0	7.09	7.5
2010	1.9	15.4	8.3	8.74	5.5
2011	**2.0**	**16.8**	**10.1**	**10.25**	**5.9**
2012	2.3	18.5	11.1	11.02	5.8
2013	2.8	21.6	13.2	13.04	5.7

Table 5. Postseason Natural Mortality for PR528_2012_SEASONS.GN1 03/03/2012 10:19 pm

Bio-Year	Sub-Adults	Adult Males	Adult Females	Total	% of Pop
2007	3723	631	960	5314	34.8
2008	962	160	340	1462	12.9
2009	1924	300	629	2853	24.2
2010	1362	225	482	2069	20.5
2011	**993**	**190**	**413**	**1596**	**18.3**
2012	1256	212	472	1939	24.3
2013	1050	170	415	1635	24.9

Table 6. Preseason Ratios for PR528_2012_SEASONS.GN1 03/03/2012 10:19 pm

Bio-Year	Subadults /100 1+F	2+ Males /100 1+F	Yr. Males /100 1+F	Ad Males /100 1+F
2007	68.2	38.2	11.9	50.2
2008	40.9	38.7	9.6	48.3
2009	49.2	38.7	12.6	51.2
2010	44.2	41.7	9.7	51.4
2011	**39.7**	**42.1**	**10.6**	**52.7**
2012	47.8	43.3	10.7	54.1
2013	47.8	44.3	10.8	55.0

Table 7. Postseason Ratios for PR528_2012_SEASONS.GN1 03/03/2012 10:19 pm

Bio-Year	Subadults /100 1+F	2+ Males /100 1+F	Yr. Males /100 1+F	Ad Males /100 1+F
2007	71.5	33.9	12.1	45.9
2008	43.0	34.5	9.9	44.4
2009	51.6	33.5	12.8	46.4
2010	47.7	36.8	10.2	47.0
2011	**43.7**	**37.1**	**11.2**	**48.3**
2012	53.1	37.6	11.5	49.0
2013	54.2	37.4	11.7	49.1

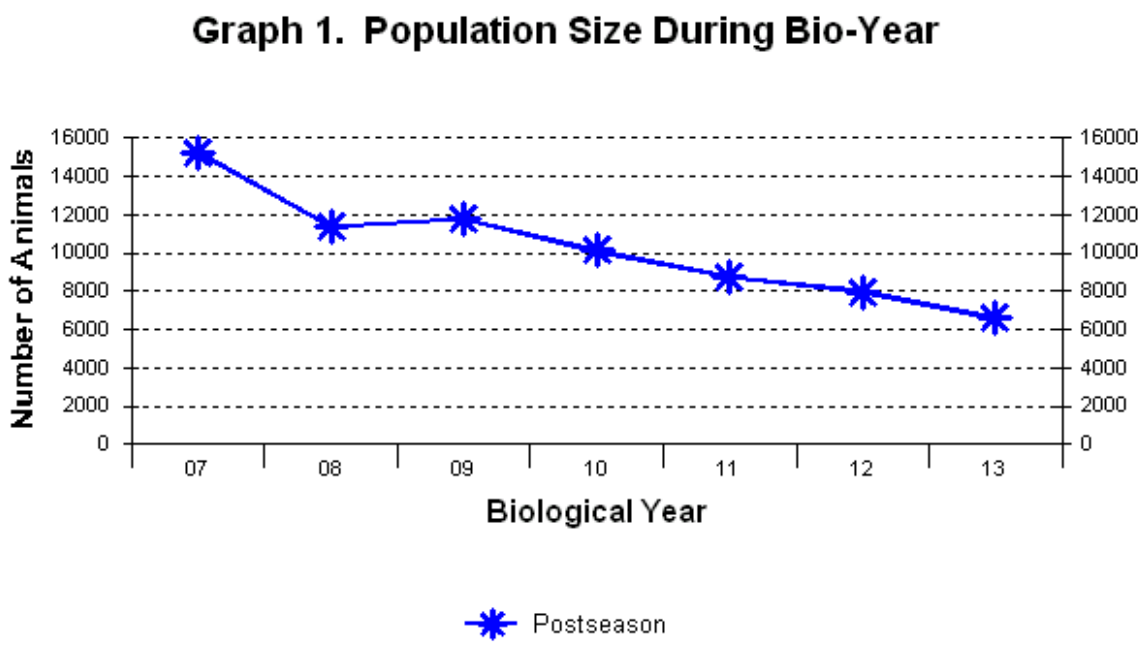
Table 8. End of Year Ratios for PR528_2012_SEASONS.GN1 03/03/2012 10:19 pm

Bio-Year	Subadults /100 Adlts	Subadults /100 1+F	Yr. Males /100 1+F	Ad Males /100 1+F
2007	14.9	21.3	13.0	42.8
2008	19.9	28.8	10.1	44.2
2009	14.7	21.5	13.5	46.2
2010	16.1	23.6	10.6	47.1
2011	**16.1**	**24.0**	**11.8**	**48.5**
2012	16.1	24.2	12.3	49.6
2013	16.6	24.9	12.7	50.3

Table 9. Reproduction at Start of Bio-Year for PR528_2012_SEASONS.GN1 03/03/2012 10:19 pm

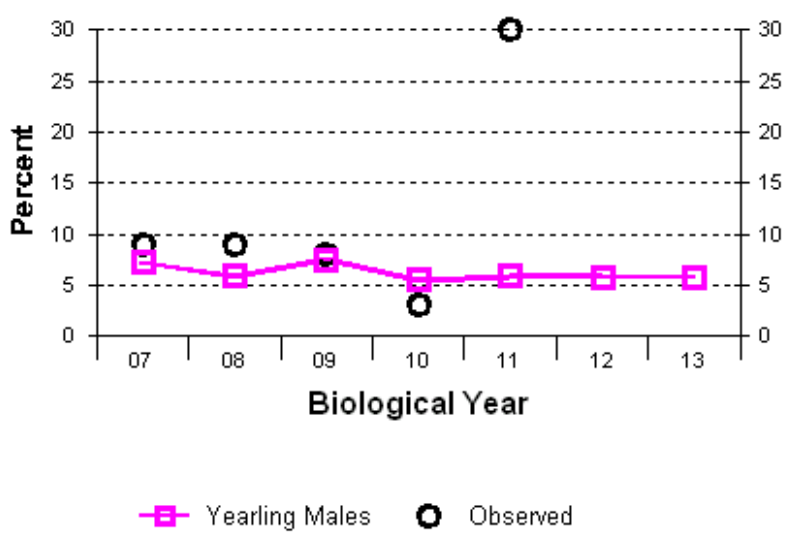
Bio-Year	Young / 100 AF 1 +	Sub-Ad. / 100 AF 1 +	Total Young	Total Sub-Adult	Total Females 1 +
2007	180	180	13707	13707	7608
2008	163	163	10901	10901	6702
2009	157	157	10313	10313	6553
2010	163	163	9578	9578	5893
2011	**161**	**161**	**8484**	**8484**	**5270**
2012	161	161	7434	7434	4626
2013	161	161	6249	6249	3891

POP-II (V1.2.9) Graph 1. Population Size During Bio-Year



PR528_2012_SEASONS.GN1, 03/03/2012 10:19 pm

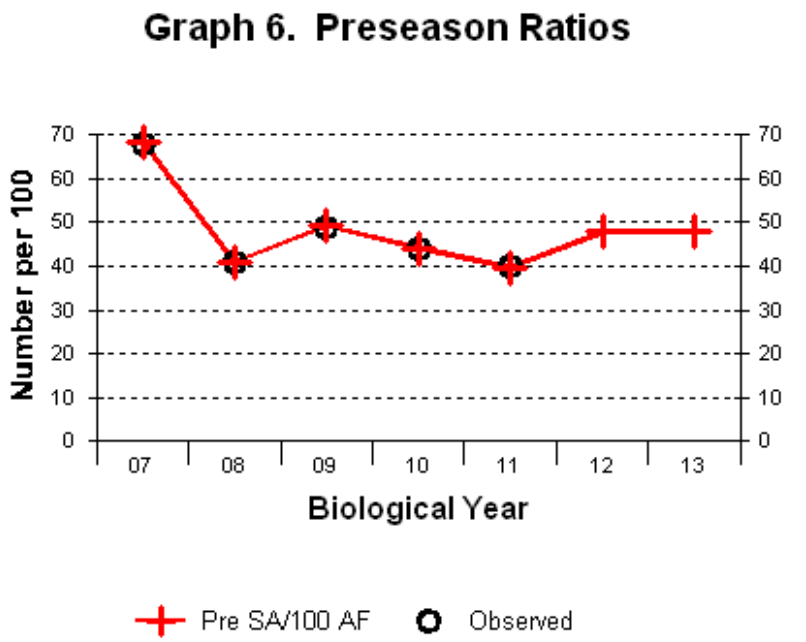
POP-II (V1.2.9) Graph 4. Harvest Percentages



YR	SIM	OBS
07	7	9
08	6	9
09	8	8
10	6	3
11	6	30
12	6	-----
13	6	-----
	AVERAGES	
of Col.	6	
of Pair	6	12

)12_SEASONS.GN1, 03/03/2012 10:19 pm, Correlation (R) = -0.16, GOF = 0.072

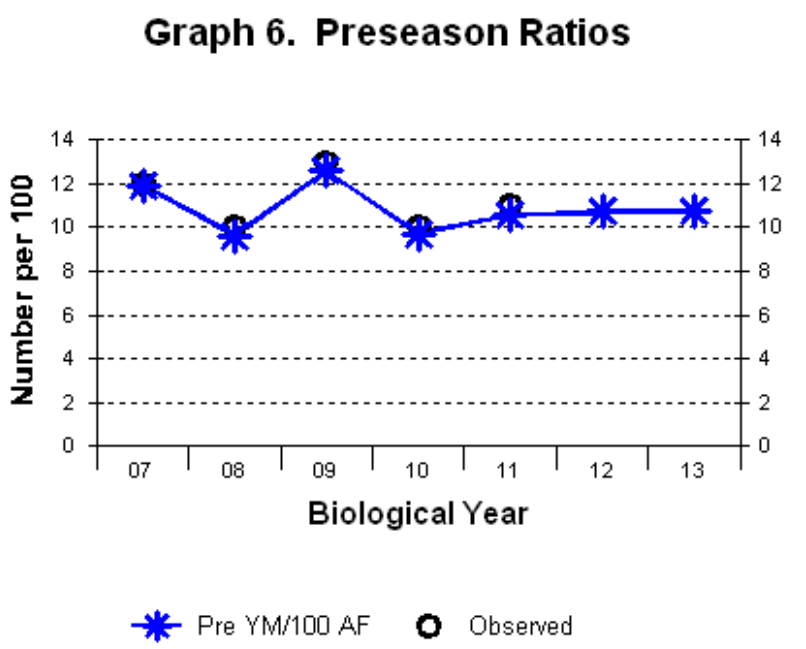
POP-II (V1.2.9) Graph 6. Preseason Ratios



_2012_SEASONS.GN1, 03/03/2012 10:19 pm, Correlation (R) = 1, GOF = 0.995

YR	SIM	OBS
07	68	68
08	41	41
09	49	49
10	44	44
11	40	40
12	48	-----
13	48	-----
	AVERAGES	
of Col.	48	
of Pair	48	48

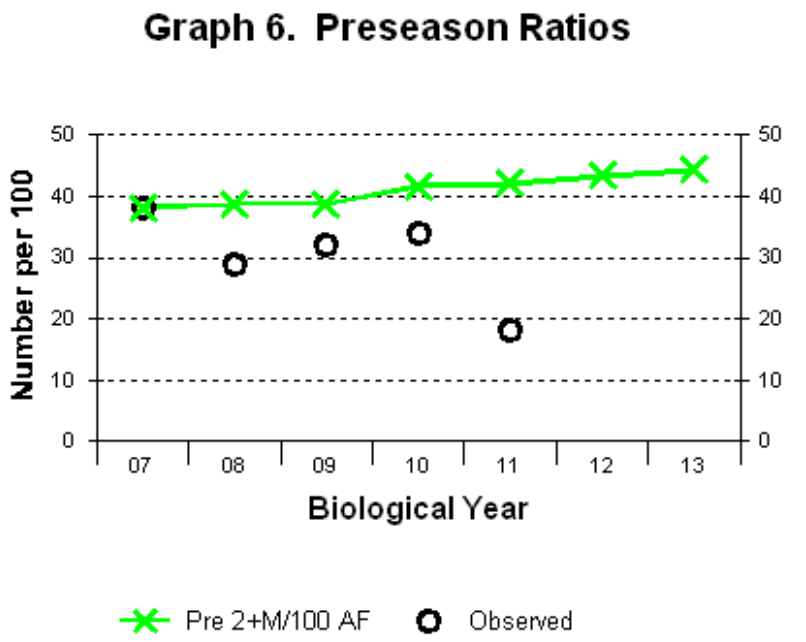
POP-II (V1.2.9) Graph 6. Preseason Ratios



12_SEASONS.GN1, 03/03/2012 10:19 pm, Correlation (R) = 0.994, GOF = 0.969

YR	SIM	OBS
07	12	12
08	10	10
09	13	13
10	10	10
11	11	11
12	11	-----
13	11	-----
	AVERAGES	
of Col.	11	
of Pair	11	11

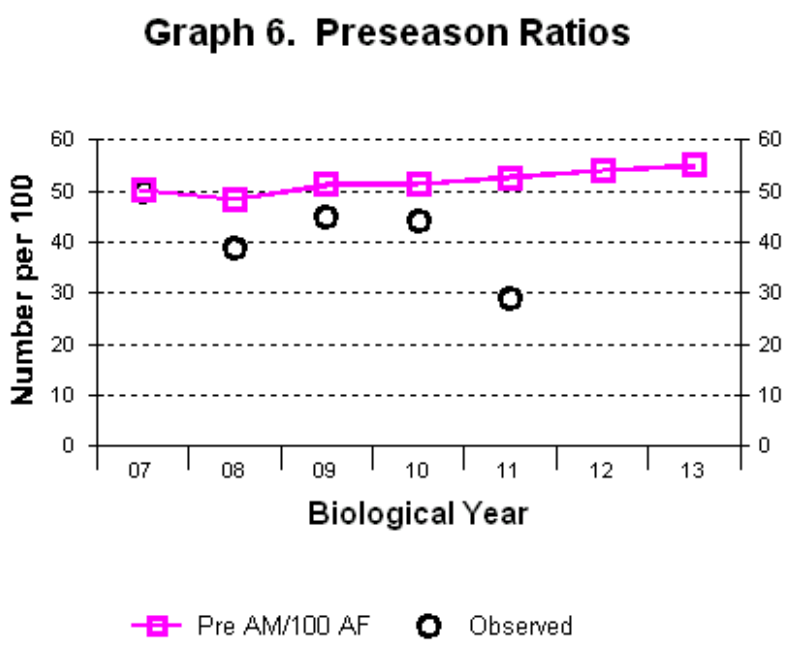
POP-II (V1.2.9) Graph 6. Preseason Ratios



I2_SEASONS.GN1, 03/03/2012 10:19 pm, Correlation (R) = -0.596, GOF = 0.587

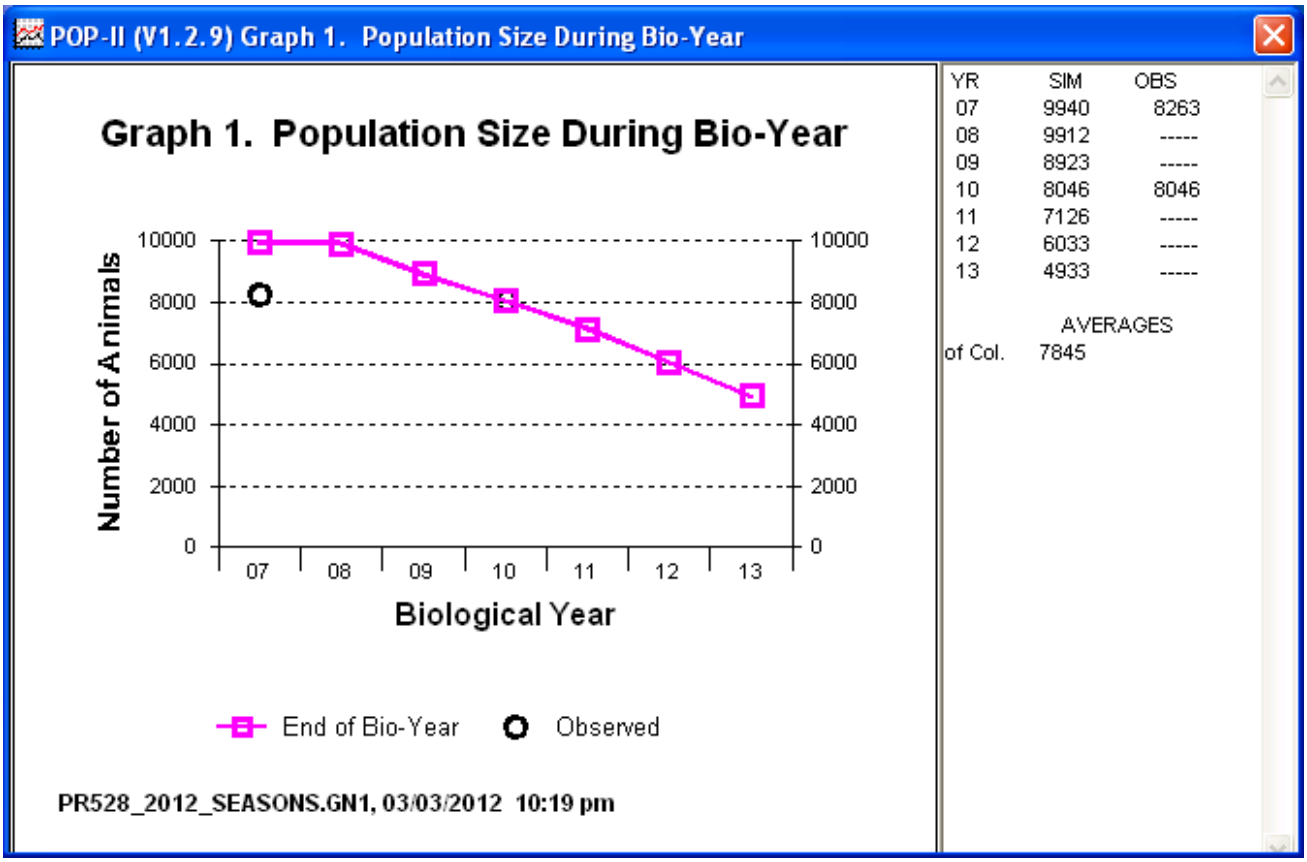
YR	SIM	OBS
07	38	38
08	39	29
09	39	32
10	42	34
11	42	18
12	43	-----
13	44	-----
	AVERAGES	
of Col.	41	
of Pair	40	30

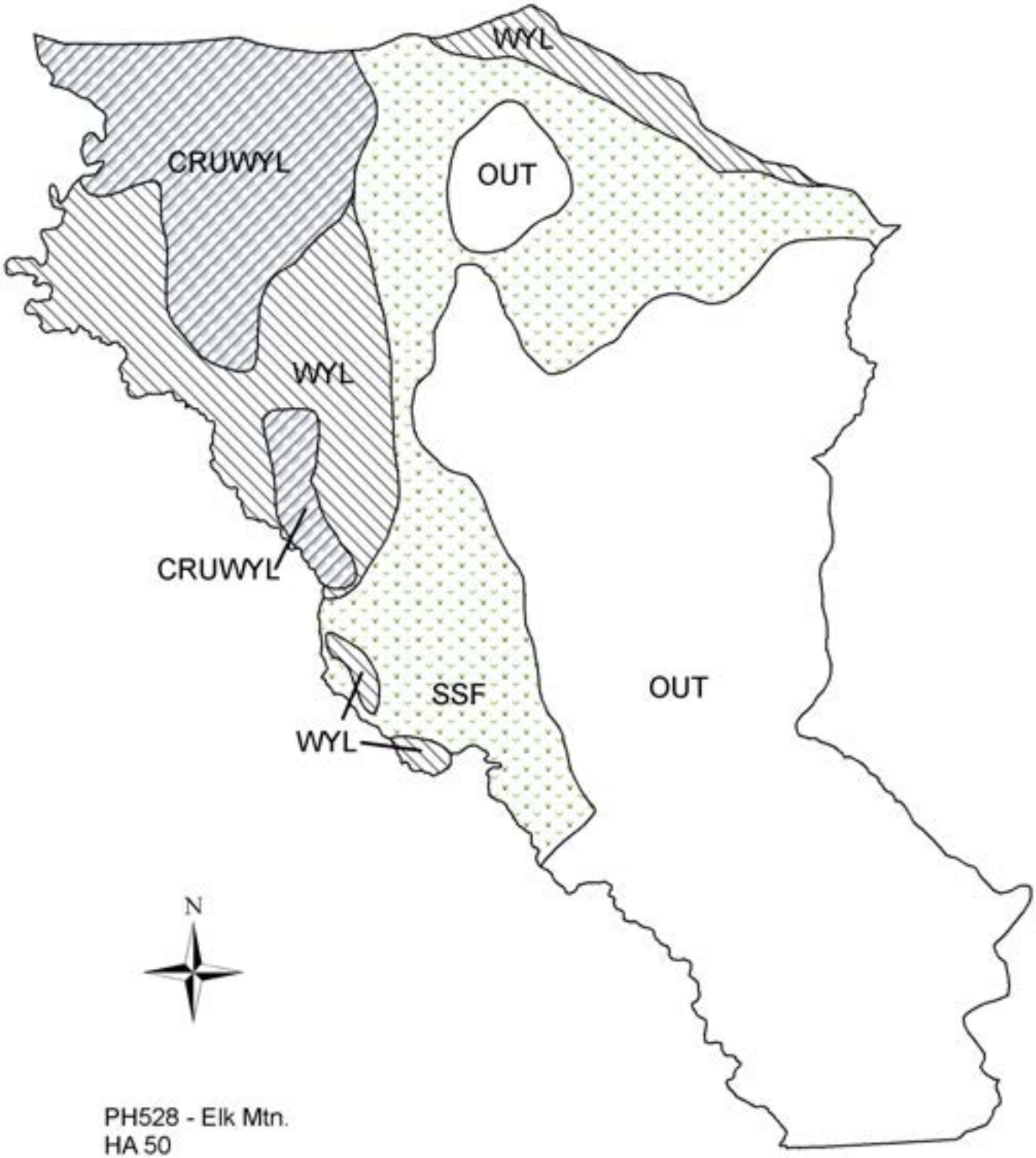
POP-II (V1.2.9) Graph 6. Preseason Ratios



I2_SEASONS.GN1, 03/03/2012 10:19 pm, Correlation (R) = -0.374, GOF = 0.706

YR	SIM	OBS
07	50	50
08	48	39
09	51	45
10	51	44
11	53	29
12	54	-----
13	55	-----
	AVERAGES	
of Col.	52	
of Pair	51	41


POP-II (V1.2.9) Graph 1. Population Size During Bio-Year
Graph 1. Population Size During Bio-Year
Number of Animals
10000
8000
6000
4000
2000
0
07
08
09
10
11
12
13
Biological Year
End of Bio-Year
Observed
PR528_2012_SEASONS.GN1, 03/03/2012 10:19 pm
YR SIM OBS
07 9940 8263
08 9912 -----
09 8923 -----
10 8046 8046
11 7126 -----
12 6033 -----
13 4933 -----
AVERAGES
of Col. 7845



PH528 - Elk Mtn.
HA 50
Revised - 8/87

2011 - JCR Evaluation Form

SPECIES: Pronghorn | PERIOD: 6/1/2011 - 5/31/2012

HERD: PR529 - BIG CREEK

HUNT AREAS: 51 | PREPARED BY: WILL SCHULTZ

	2006 - 2010 Average	2011	2012 Proposed
Population:	1,145	1,680	1,766
Harvest:	137	48	48
Hunters:	133	39	45
Hunter Success:	103%	123%	107%
Active Licenses:	159	49	50
Active License Percent:	86%	98%	96%
Recreation Days:	515	175	175
Days Per Animal:	3.8	3.6	3.6
Males per 100 Females	47	28	
Juveniles per 100 Females	42	34	

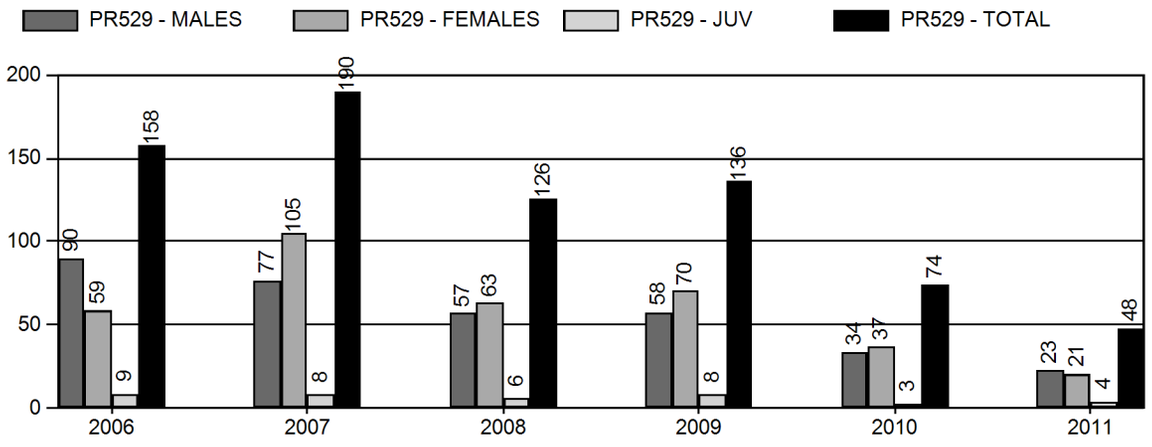
Population Objective:	600
Management Strategy:	Recreational
Percent population is above (+) or below (-) objective:	180%
Number of years population has been + or - objective in recent trend:	2
Model Date:	03/05/2012

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

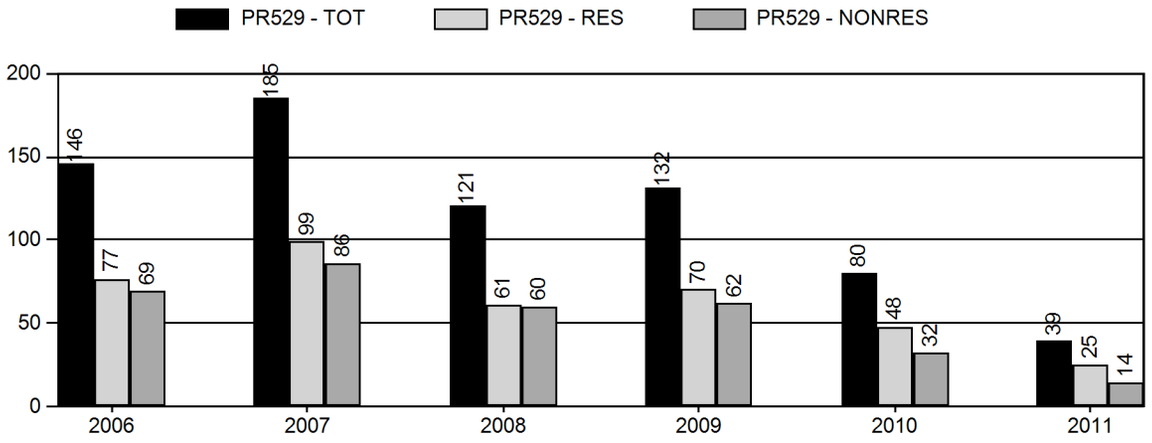
	JCR Year	Proposed
Females ≥ 1 year old:	2.2%	2.2%
Males ≥ 1 year old:	4.8%	4.9%
Juveniles (< 1 year old):	1.3%	1.1%
Total:	2.77%	2.75%
Proposed change in post-season population:	--7.2%	-3.0%

Population Size - Postseason

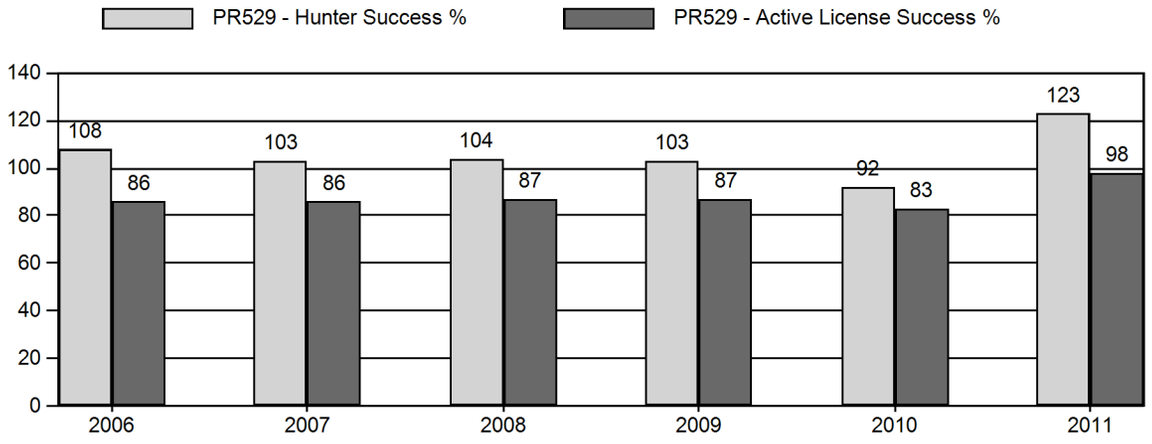
Harvest



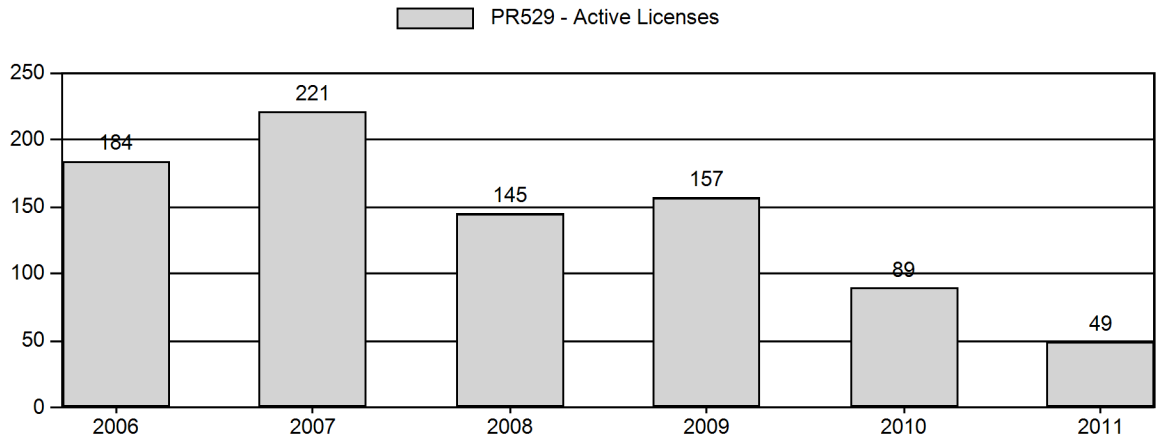
Number of Hunters



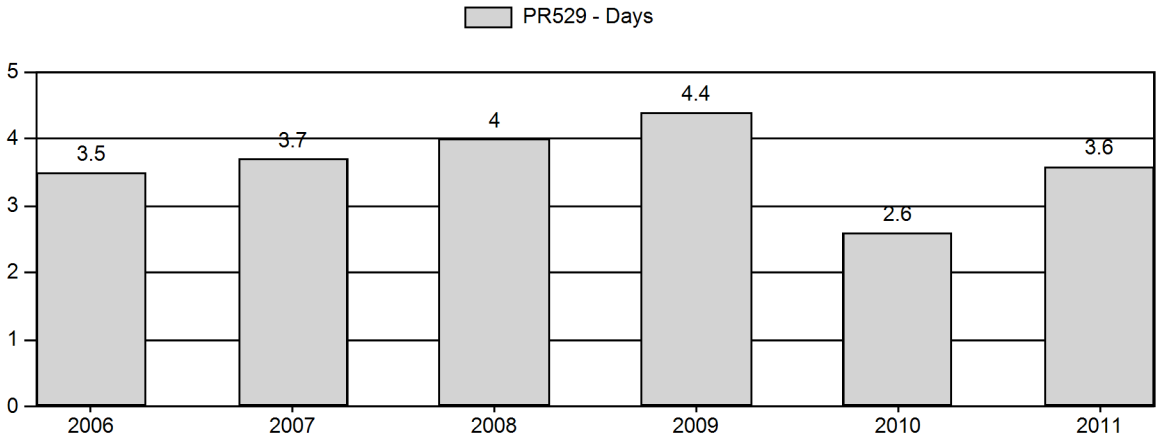
Harvest Success



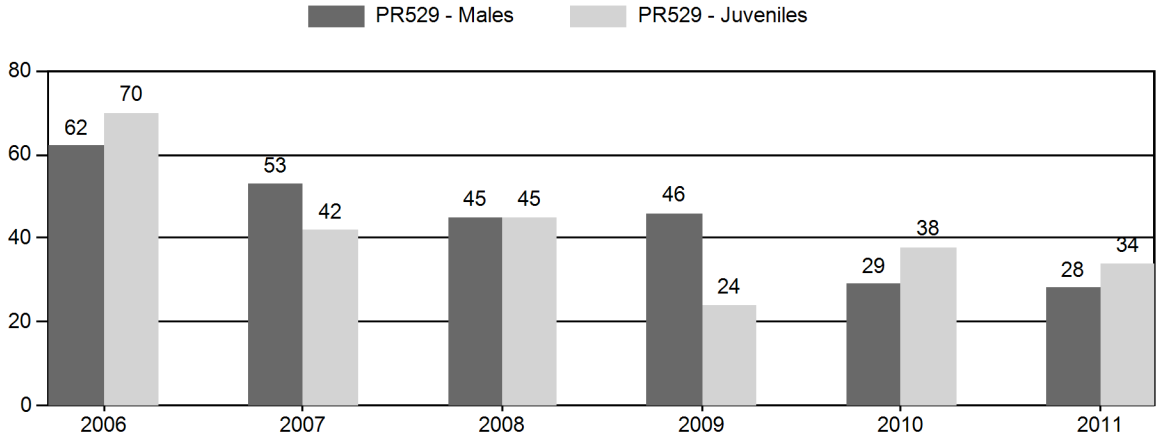
Active Licenses



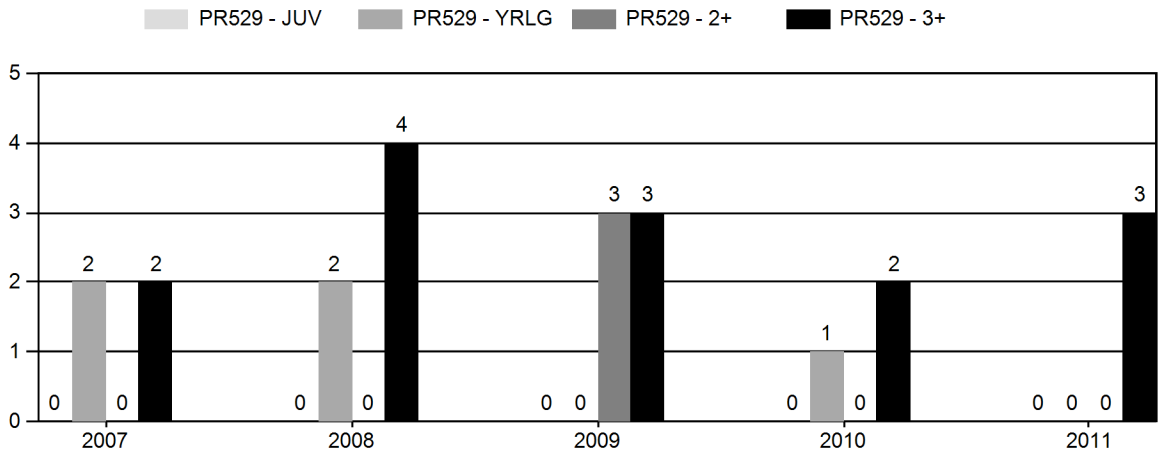
Days Per Animal Harvested



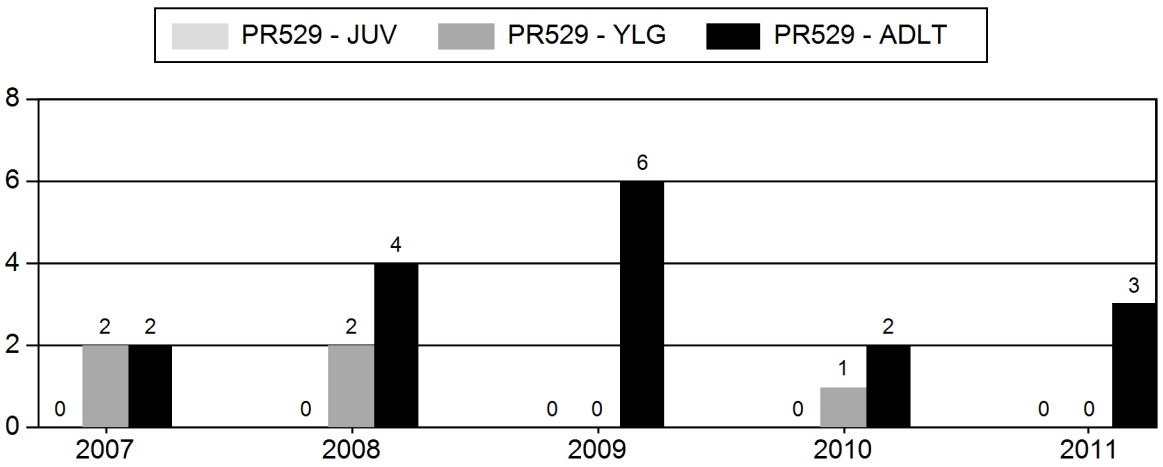
Preseason Animals per 100 Females



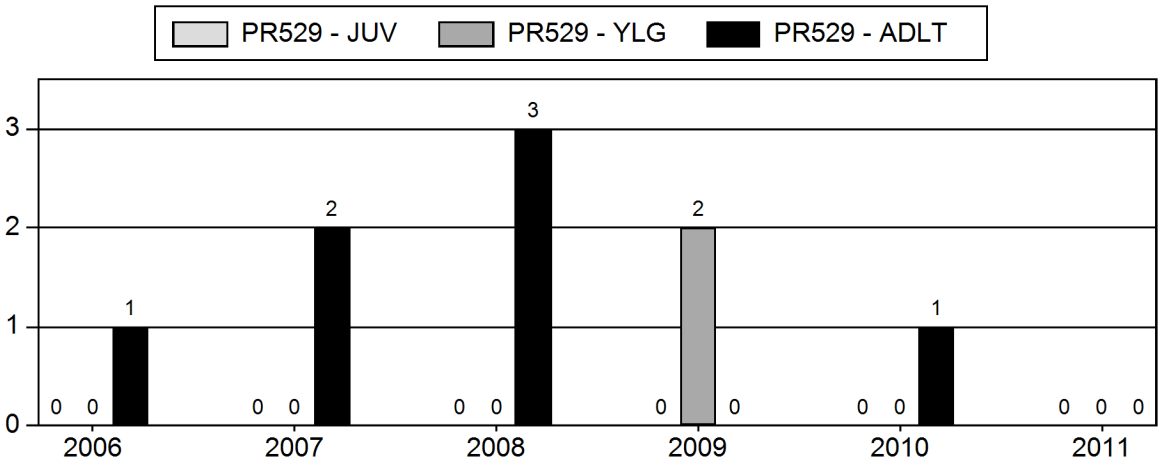
Age Structure of Field Checked Males



Age Structure Data (Field and Laboratory) - Male



Age Structure Data (Field and Laboratory) - Female



2006 - 2011 Preseason Classification Summary

for Pronghorn Herd PR529 - BIG CREEK

		MALES				FEMALES		JUVENILES				Males to 100 Females				Young to		
Year	Pre Pop	Ylg	Adult	Total	%	Total	%	Total	%	Tot Cls	Cls Obj	Ylng	Adult	Total	Conf Int	100 Fem	Conf Int	100 Adult
2006	1,500	0	0	115	27%	186	43%	130	30%	431	1,084	0	0	62	± 10	70	± 11	43
2007	1,900	28	58	86	27%	162	51%	68	22%	316	902	17	36	53	± 11	42	± 9	27
2008	900	9	25	34	24%	75	52%	34	24%	143	500	12	33	45	± 15	45	± 15	31
2009	650	42	84	126	27%	272	59%	64	14%	462	476	15	31	46	± 4	24	± 3	16
2010	1,731	13	49	62	17%	214	60%	82	23%	358	361	6	23	29	± 6	38	± 7	30
2011	1,733	15	33	48	17%	170	62%	57	21%	275	0	9	19	28	± 7	34	± 8	26

2011 HUNTING SEASONS

PR529 - BIG CREEK

Hunt Area	Add'l Hunt Areas	Type	Quota	Season Dates	Limitations
51		Type 1	25	09/16 - 11/14	Any
51		Type 6	25	09/16 - 11/14	Reduced Price doe/fawn

Area	Type	Active Lic/Htrs	Buck	Doe	Fawn	Total	Success	Days/Harvest	Days	Licenses Sold
2011										
51 BIG CREEK										
	Type 1	23	23	0	0	23	100%	4	91	25
	Type 6	26	0	21	4	25	96.20%	3.4	84	29
Pooled Total		39 (49)*	23	21	4	48	123.10% (98.0%)*	3.6	175	
Pooled Resident		25	18	10	3	31	124%	3.7	115	
Pooled Nonresident		14	5	11	1	17	121.40%	3.5	60	
2011 Hunt Area Total		39 (49)*	23	21	4	48	123.10% (98.0%)*	3.6	175	54
2011 Herd Total		39 (49)*	23	21	4	48	123.10% (98.0%)*	3.6	175	54

*Active Licenses

2006 - 2011 Harvest Age Structure

for Pronghorn Herd PR529 - BIG CREEK

	Males										Females										Herd
Year	Juv	1	% 1 *	2	3 ^	% 3 **	Total Aged ++	Not Aged +++	Unk	Total Chkd	Juv	1	% 1 *	2	3 ^	% 3 **	Total Aged ++	Not Aged +++	Unk	Total Chkd	Total
2006	0	0	0%	0	0	0%	0	0	0	0	0	0	0%	0	1	100%	1	0	0	1	1
2007	0	2	50%	0	2	50%	4	0	0	4	0	0	0%	0	1	100%	1	1	0	2	6
2008	0	2	33%	0	3	60%	5	1	0	6	0	0	0%	1	2	67%	3	0	0	3	9
2009	0	0	0%	3	0	0%	3	3	0	6	0	2	100%	0	0	0%	2	0	1	3	9
2010	0	1	33%	0	1	50%	2	1	0	3	0	0	0%	0	0	0%	0	1	1	2	5
2011	0	0	0%	0	3	100%	3	0	0	3	0	0	0%	0	0	0%	0	0	2	2	5

* Percent of aged animals (including unaged adults but excluding juveniles) 1 1/2 years old

^ Number of animals three years old and older. Animals aged older than three (excluding unaged adults) are lumped into this three plus category

** Percent of aged animals (not including juveniles or unaged adults) three years old or older

++ includes juveniles

+++ Unaged adults - unaged animals older than yearlings

BIG CREEK PRONGHORN (PR529)
Hunt Area 51
2012 Season Recommendations

Hunt Area	Type	Date of Seasons Opens	Closes	Limitations
51	1	Sept. 16	Nov. 14	Limited quota; 25 licenses any antelope
	6	Sept. 16	Nov. 14	Limited quota; 25 licenses doe or fawn.
Archery		Aug. 15		Refer to Section 4 of this Chapter

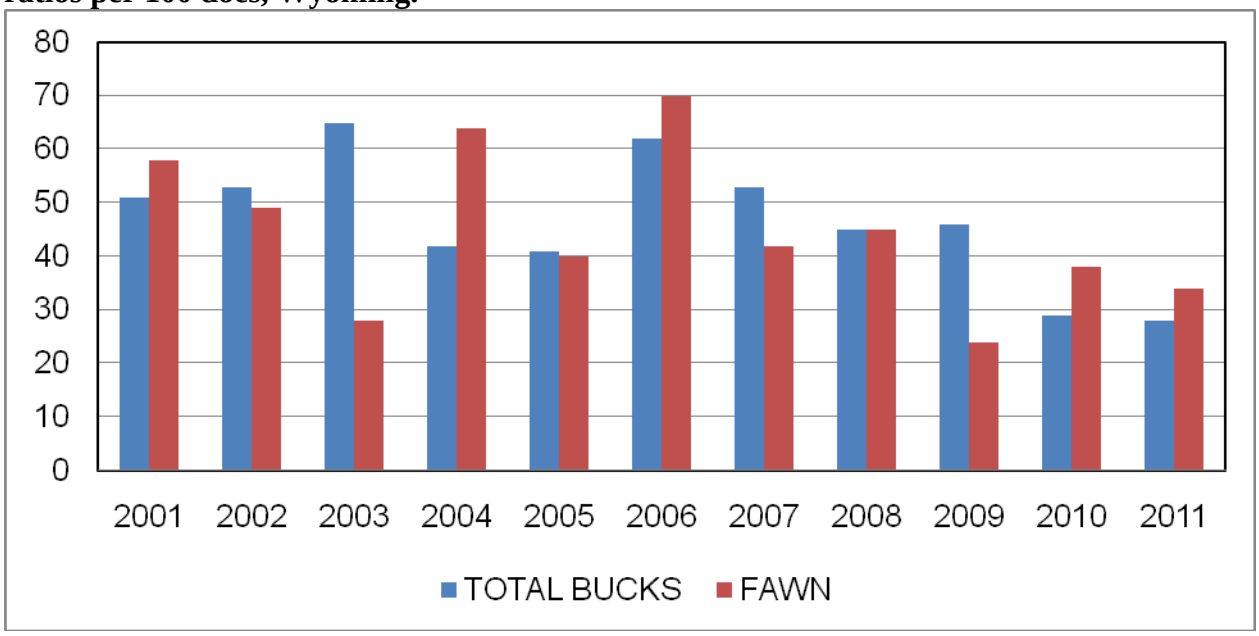
Summary of Proposed Changes in License Numbers

Hunt Area	Type	Change From 2011
none		

Management Evaluation

The 2010 preseason ratios were 28 bucks and 34 fawns per 100 does. The preseason classification sample (n=275) was collected from a ground survey. Preseason buck ratios decreased in 2011, while fawn ratios were decreased by 4 fawns. Both buck and fawn ratios have declined in trend during the past 6 years (Figure 1).

Figure 1. 2001-2011 Big Creek Pronghorn Herd Unit preseason buck and fawn ratios per 100 does, Wyoming.



The 2011 postseason POP-II population estimate was 1,680 pronghorn. The current population estimate was derived from a POP-II population model with the 2010 end-of-year population estimate aligned to the results of a corresponding 2010 end-of-year line transect density estimate survey. The line transect survey is suspect of over estimating the density of this small herd unit. We consider the POP-II population model for the Big Creek Herd Unit to be low quality due to bias in line transect estimate because of a low number of groups on which the density estimate is based upon. The POP-II model has been realigned at regular intervals with an independent population estimate derived from line transect density surveys. However, seasonal movement of pronghorn between Wyoming and Colorado, as well as other herd units in Wyoming, complicate population estimates and management. Preseason classification survey data have varied with effort but are generally considered adequate. Harvest survey information used in the POP-II model is generally considered reliable because of the small pool of hunters permitted in this herd unit and the sampling technique applied to limited quota hunt areas.

Pronghorn damage to alfalfa crops has diminished due to the low number of pronghorn observed in this herd unit. Access is difficult except for on those private lands receiving damage. Recent changes in land use have been observed in this herd unit. Several sections of abandoned wheat fields have been converted into cattle pastures which have been grazed intensively. Development in the Trail Run subdivision is also continuing.
In the past these areas provided pronghorn with seasonal habitat and the observed changes in land use appear to be displacing pronghorn into other areas.

Harvest

Preliminary data for the 2011 hunting season indicated a total of 48 pronghorn were harvested with 98% success for 49 active licenses.

2012 Season Proposal

We propose to maintain both the Type 1 and Type 6 licenses at 25 licenses for each type in the Big Creek Herd Unit. This season proposal will slow the rate of population decline attributed to poor fawn recruitment.

Data Set: PR529_2012_SEASON.GN1 03/05/2012 10:28 am Page 1

PR529_2012_SEASON
Data from 2007 to 2012 Simulation from 2007 to 2012

Age Class	Init Pop. Male	Init Pop. Female	Prop. Presn Male	Prop. Presn Female	Mort% Postsn Male	Mort% Postsn Female	Effort Set 1 Male	Effort Set 1 Female	Effort Set 2 Male	Effort Set 2 Female
0	90.0	90.0	50.0	50.0	45.0	35.0	1.00	1.00	1.00	1.00
1	17.1	21.2	2.0	2.0	10.0	5.0	1.00	1.00	0.67	1.00
2	11.6	16.9	2.0	2.0	10.0	5.0	1.00	1.00	1.00	1.00
3	7.9	13.5	2.0	2.0	10.0	5.0	1.00	1.00	1.00	1.00
4	5.4	10.8	2.0	2.0	10.0	5.0	1.00	1.00	1.00	1.00
5	3.7	8.7	2.0	2.0	10.0	5.0	1.00	1.00	1.00	1.00
6	2.5	6.9	2.0	2.0	25.0	5.0	1.00	1.00	1.00	1.00
7	1.7	5.5	2.0	2.0	50.0	10.0	1.00	1.00	1.00	1.00
8	1.1	4.4	2.0	2.0	60.0	15.0	1.00	1.00	1.00	1.00
9	0.8	3.6	2.0	2.0	70.0	20.0	1.00	1.00	1.00	1.00
10	0.5	2.8	2.0	2.0	80.0	25.0	1.00	1.00	1.00	1.00
11	0.4	2.3	2.0	2.0	90.0	50.0	1.00	1.00	1.00	1.00
12	0.2	1.8	2.0	2.0	95.0	75.0	1.00	1.00	1.00	1.00
13	0.2	1.5	2.0	2.0	100.0	100.0	1.00	1.00	1.00	1.00

Sum = 333.0 Estimated Sum = 4258 Subadults: Ages 0 to 0

Data Set: PR529_2012_SEASON.GN1 03/05/2012 10:28 am Page 2

Bio-Year	Preseason MSI	MSI Function is Linear: Harvest Subadults#	Des. Pop Size in NA: Males#	Des. Pop Size in NA: Females#	Postseason MSI	Effort & Wound Set Used
2007	**1.55**	**11**	**40**	**71**	**1.00**	**1**
2008	**1.44**	**19**	**50**	**79**	**0.65**	**1**
2009	**1.69**	**8**	**58**	**70**	**1.29**	**1**
2010	**1.56**	**3**	**34**	**37**	**1.25**	**1**
2011	**1.59**	**4**	**23**	**21**	**0.60**	**1**
2012	**1.54**	**4**	**25**	**21**	**0.60**	**1**

Set 1	Wounding Loss	10.%	10.%	10.%	Yearling Male 10.%
Set 2	Wounding Loss	10.%	10.%	10.%	Yearling Male 10.%

Data Set: PR529_2012_SEASON.GN1 03/05/2012 10:28 am Page 3

Bio-Year	Young/100 Fems Age 1 - 1	Young/100 Fems Age 2 - 13	Young/100 Fems Disabled	Sex Ratio: 50 : 50
2008	0.0	180.0	0.0	
2009	0.0	180.0	0.0	
2010	0.0	180.0	0.0	
2011	0.0	180.0	0.0	
2012	0.0	180.0	0.0	
2013	0.0	180.0	0.0	

POP-II (V1.2.9) Simulation Output Tables for PR529_2012_SEASON.GN1, 03/05/2012 10:28 am

Table 1. Population Size During Bio-Year for PR529_2012_SEASON.GN1 03/05/2012 10:28 am

Bio-Year	Start	Pre-Season	Post Season	End	%Growth
2007	4258	2414	2279	1858	-12.5
2008	3725	2327	2164	1916	0.5
2009	3744	2135	1985	1599	-11.0
2010	3332	1931	1849	1462	-9.7
2011	**3007**	**1733**	**1680**	**1512**	**1.8**
2012	3061	1821	1766	1567	2.3

Table 2. Preseason Natural Mortality for PR529_2012_SEASON.GN1 03/05/2012 10:28 am

Bio-Year	Sub-Adults	Adult Males	Adult Females	Total	% of Pop
2007	1784	21	40	1844	43.3
2008	1345	19	35	1398	37.5
2009	1545	24	41	1609	43.0
2010	1351	18	32	1401	42.1
2011	**1228**	**16**	**31**	**1275**	**42.4**
2012	1193	16	30	1239	40.5

Table 3. Harvest Mortality for PR529_2012_SEASON.GN1 03/05/2012 10:28 am

Bio-Year	Sub-Adults	Adult Males	Adult Females	Total	% of Pop
2007	11	40	71	122	5.1
2008	19	50	79	148	6.4
2009	8	58	70	136	6.4
2010	3	34	37	74	3.8
2011	4	23	21	48	2.8
2012	4	25	21	50	2.7

Table 4. Harvest Percentages for PR529_2012_SEASON.GN1 03/05/2012 10:28 am

Bio-Year	Sub-Adults	Adult Males	Adult Females	Total	Yearling Males
2007	2.1	6.1	5.7	5.05	32.2
2008	3.6	7.9	6.8	6.36	21.2
2009	2.8	8.5	6.0	6.37	25.1
2010	0.8	6.2	3.7	3.83	10.3
2011	**1.3**	**4.8**	**2.2**	**2.77**	**16.6**
2012	1.1	4.9	2.2	2.75	21.6

Table 5. Postseason Natural Mortality for PR529_2012_SEASON.GN1 03/05/2012 10:28 am

Bio-Year	Sub-Adults	Adult Males	Adult Females	Total	% of Pop
2007	202	97	122	422	18.5
2008	131	53	65	248	11.5
2009	142	115	129	386	19.4
2010	189	92	106	387	20.9
2011	**75**	**43**	**50**	**168**	**10.0**
2012	84	54	61	199	11.3

Table 6. Preseason Ratios for PR529_2012_SEASON.GN1 03/05/2012 10:28 am

Bio-Year	Subadults /100 1+F	2+ Males /100 1+F	Yr. Males /100 1+F	Ad Males /100 1+F
2007	41.8	36.0	17.1	53.2
2008	44.8	43.0	11.6	54.6
2009	24.2	43.8	14.7	58.4
2010	37.9	48.6	5.5	54.1
2011	**33.9**	**43.0**	**8.6**	**51.6**
2012	37.4	42.1	11.6	53.6

Table 7. Postseason Ratios for PR529_2012_SEASON.GN1 03/05/2012 10:28 am

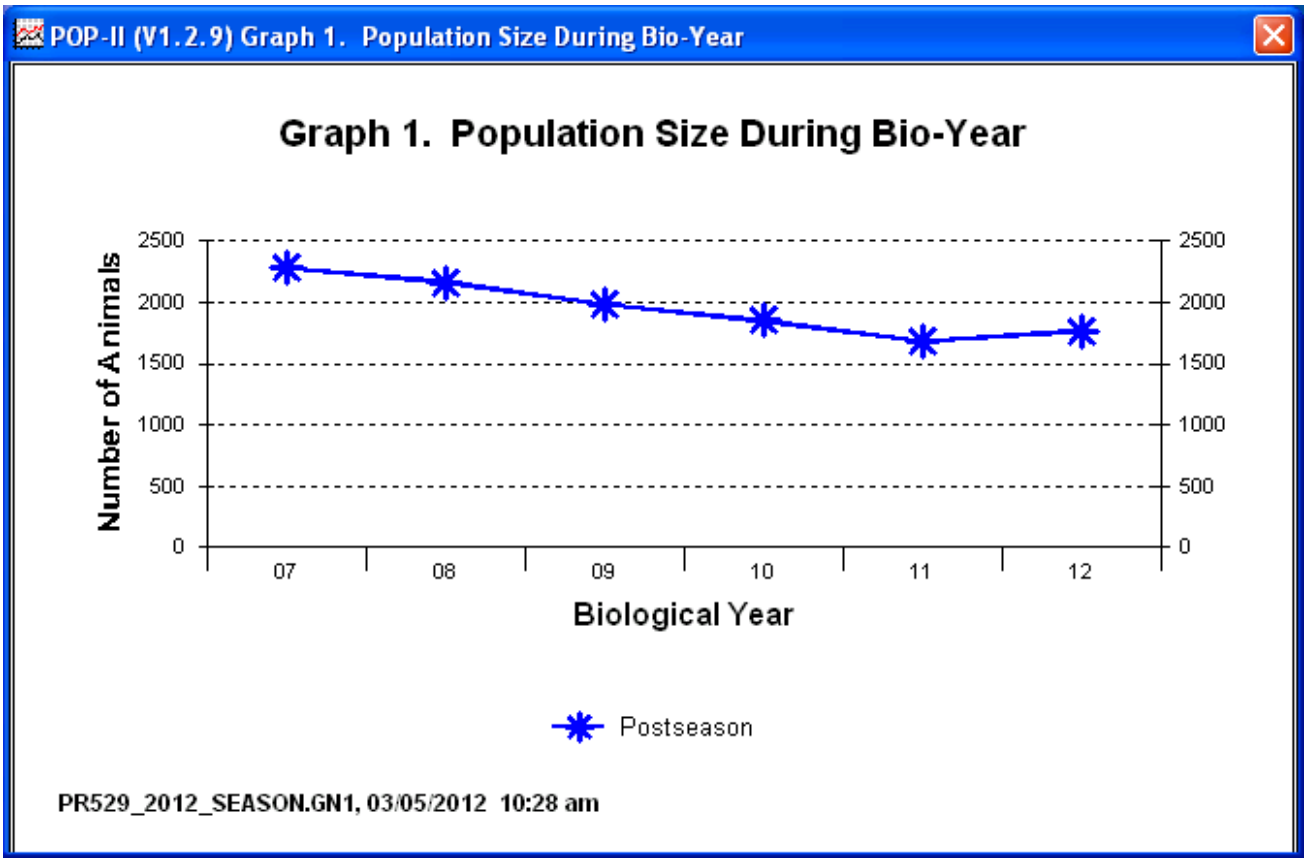
Bio-Year	Subadults /100 1+F	2+ Males /100 1+F	Yr. Males /100 1+F	Ad Males /100 1+F
2007	43.6	35.9	17.0	52.9
2008	46.5	42.4	11.4	53.9
2009	25.2	42.5	14.3	56.7
2010	39.2	47.2	5.4	52.5
2011	**34.3**	**41.8**	**8.3**	**50.1**
2012	37.8	40.8	11.2	52.0

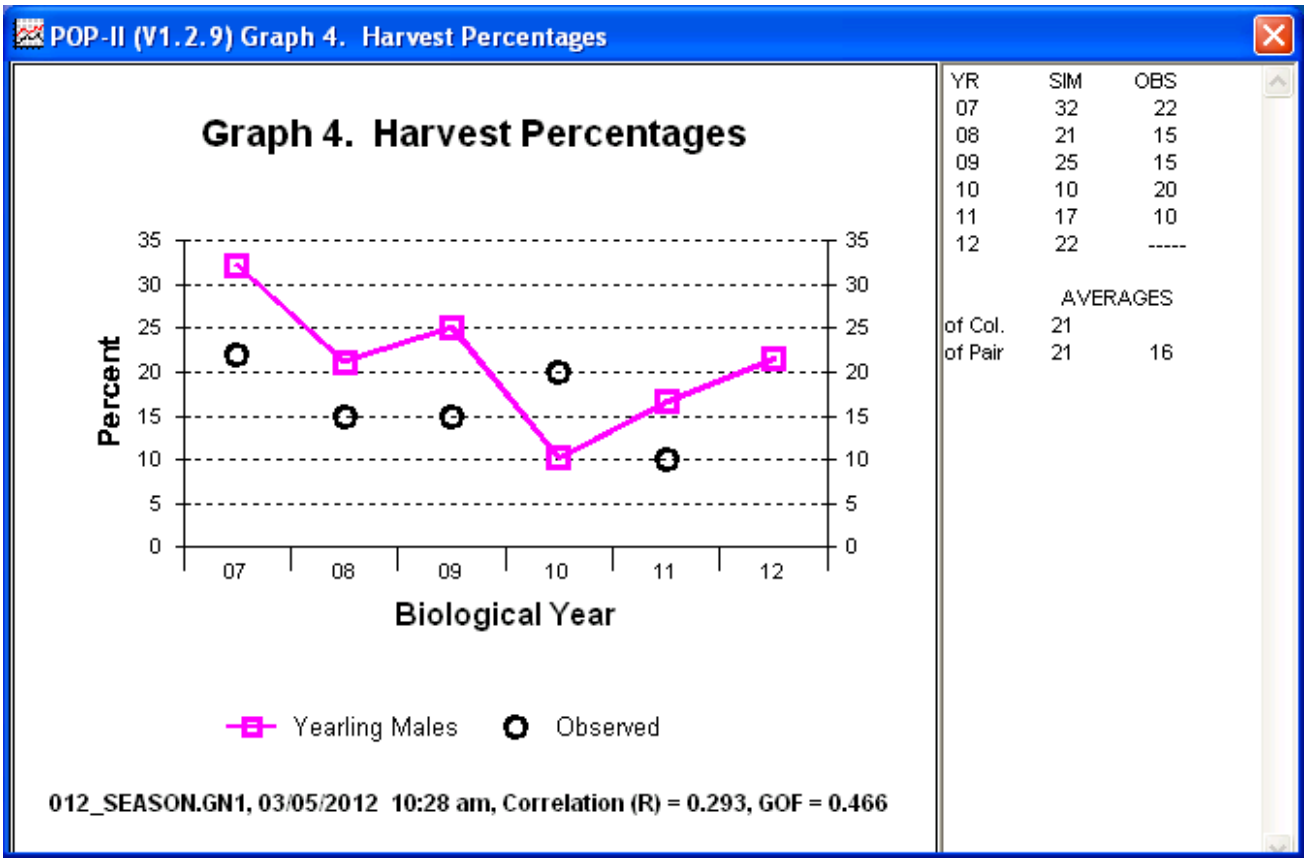
Table 8. End of Year Ratios for PR529_2012_SEASON.GN1 03/05/2012 10:28 am

Bio-Year	Subadults /100 Adlts	Subadults /100 1+F	Yr. Males /100 1+F	Ad Males /100 1+F
2007	19.5	29.3	17.2	49.8
2008	24.0	36.6	11.4	52.1
2009	9.1	13.8	14.1	52.4
2010	14.8	22.0	5.3	48.4
2011	**18.6**	**27.6**	**8.3**	**48.1**
2012	20.6	30.8	11.3	49.5

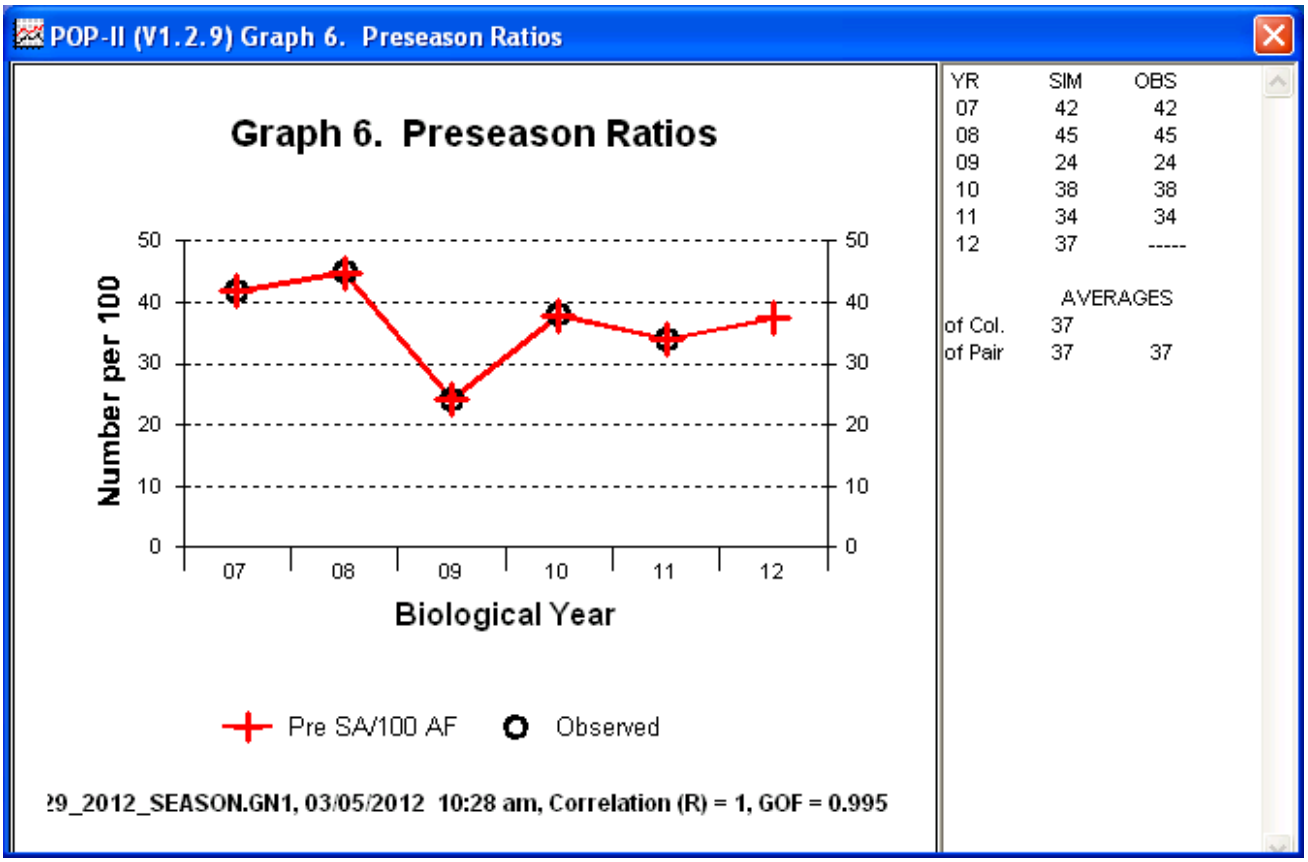
Table 9. Reproduction at Start of Bio-Year for PR529_2012_SEASON.GN1 03/05/2012 10:28 am

Bio-Year	Young / 100 AF 1 +	Sub-Ad. / 100 AF 1 +	Total Young	Total Sub-Adult	Total Females 1 +
2007	180	180	2302	2302	1277
2008	155	155	1867	1867	1202
2009	151	151	1828	1828	1209
2010	167	167	1732	1732	1038
2011	**160**	**160**	**1545**	**1545**	**965**
2012	157	157	1549	1549	984

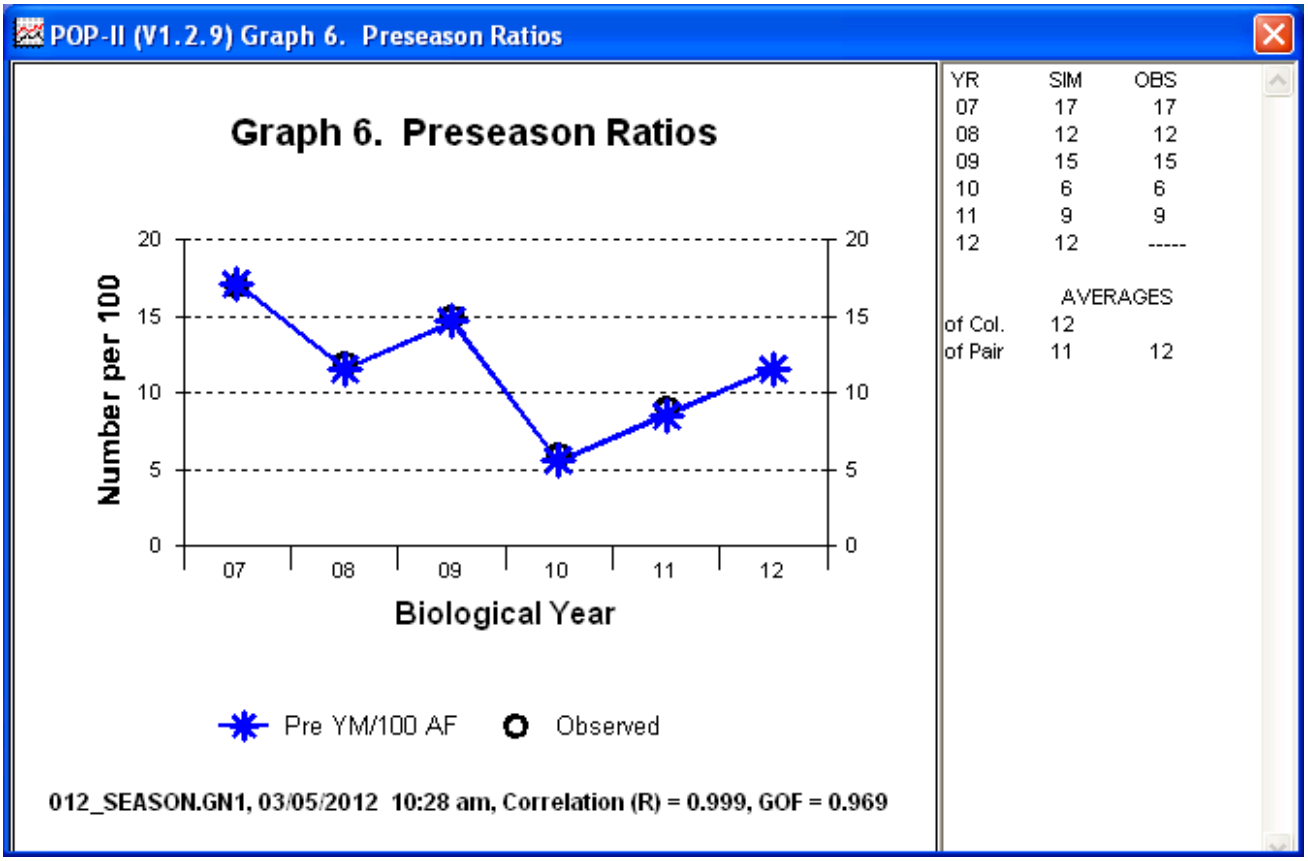




YR	SIM	OBS
07	32	22
08	21	15
09	25	15
10	10	20
11	17	10
12	22	-----
	AVERAGES	
of Col.	21	
of Pair	21	16

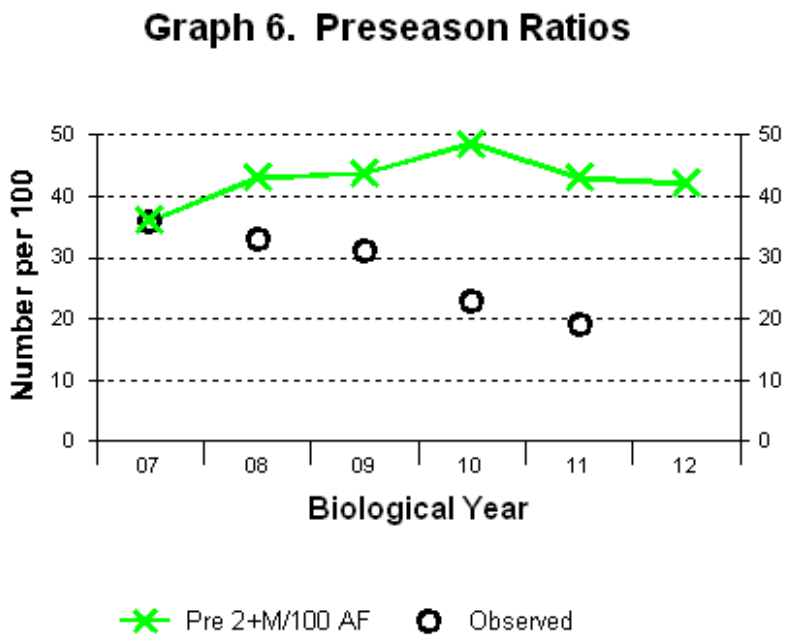


YR	SIM	OBS
07	42	42
08	45	45
09	24	24
10	38	38
11	34	34
12	37	-----
	AVERAGES	
of Col.	37	
of Pair	37	37



YR	SIM	OBS
07	17	17
08	12	12
09	15	15
10	6	6
11	9	9
12	12	-----
	AVERAGES	
of Col.	12	
of Pair	11	12

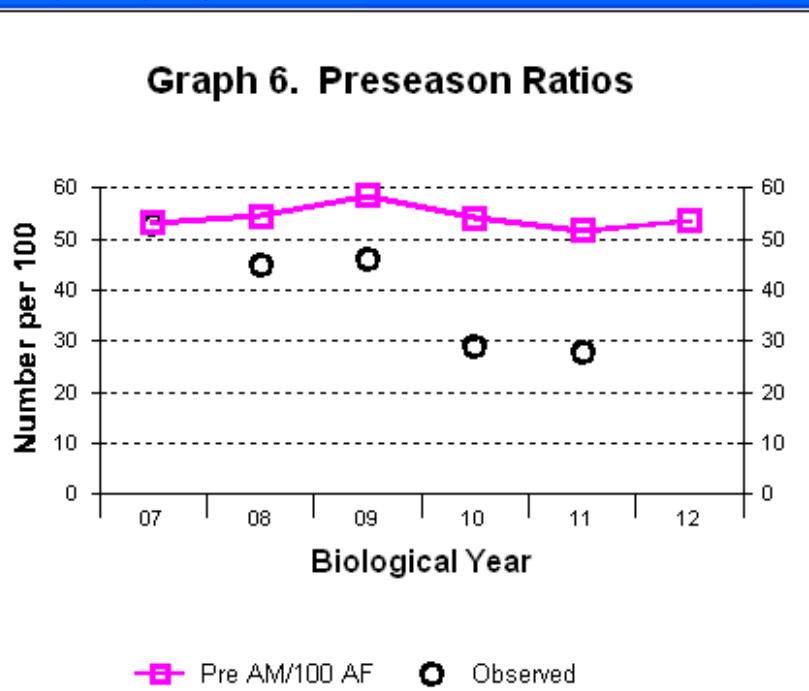
POP-II (V1.2.9) Graph 6. Preseason Ratios



012_SEASON.GN1, 03/05/2012 10:28 am, Correlation (R) = -0.638, GOF = 0.391

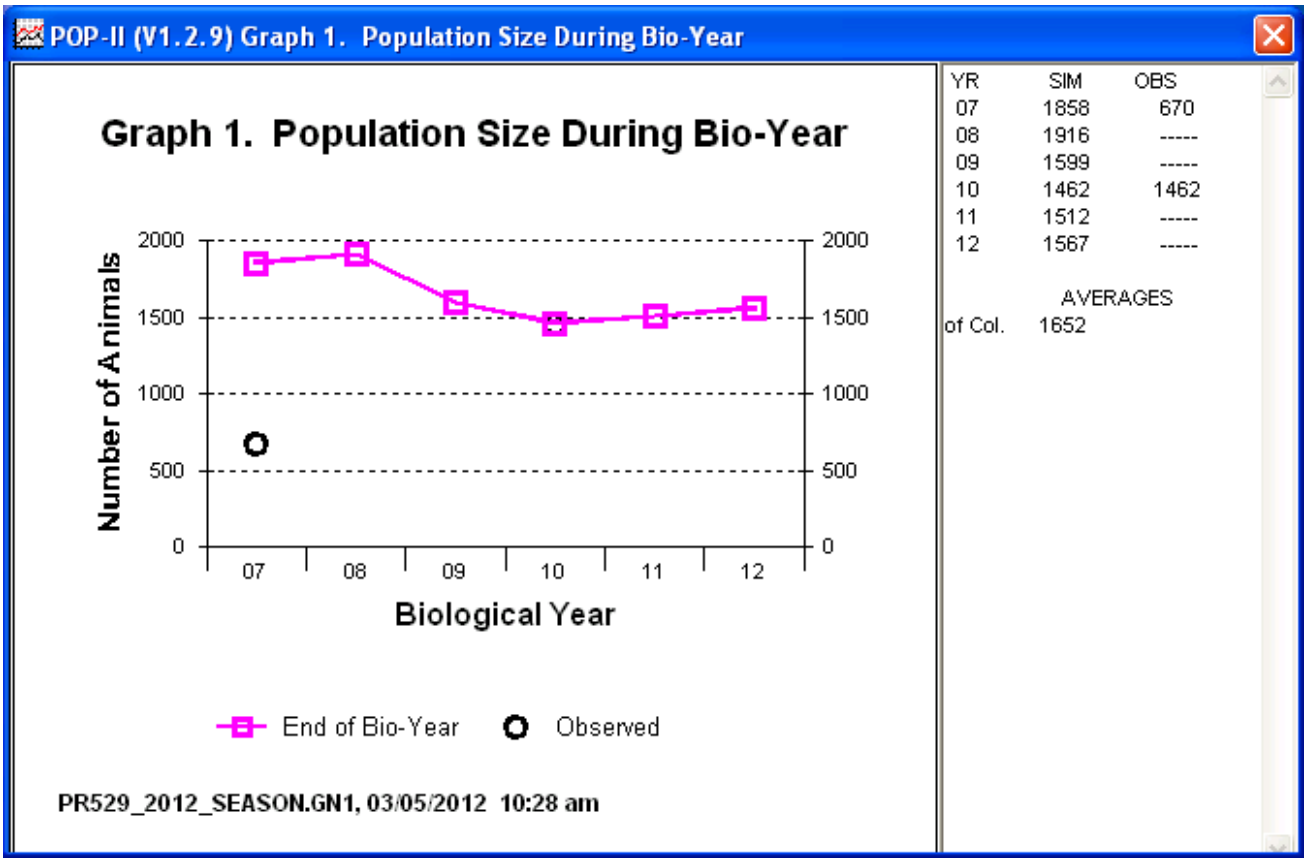
YR	SIM	OBS
07	36	36
08	43	33
09	44	31
10	49	23
11	43	19
12	42	-----
	AVERAGES	
of Col.	43	
of Pair	43	28

POP-II (V1.2.9) Graph 6. Preseason Ratios



012_SEASON.GN1, 03/05/2012 10:28 am, Correlation (R) = 0.402, GOF = 0.579

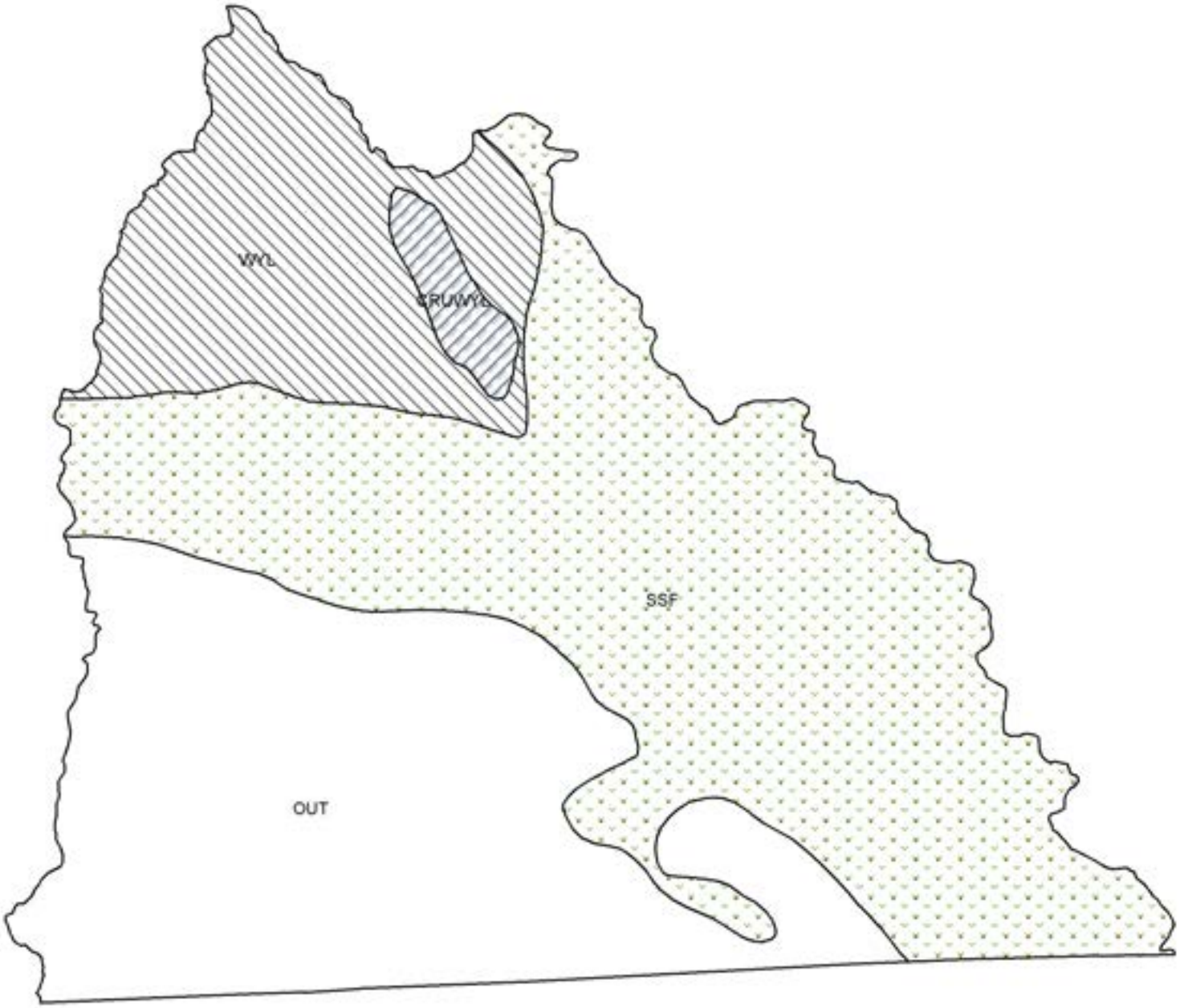
YR	SIM	OBS
07	53	53
08	55	45
09	58	46
10	54	29
11	52	28
12	54	-----
	AVERAGES	
of Col.	54	
of Pair	54	40



YR	SIM	OBS
07	1858	670
08	1916	-----
09	1599	-----
10	1462	1462
11	1512	-----
12	1567	-----

AVERAGES

of Col. 1652



PH529 - Big Creek
HA 51
Revised - 7/87

MULE DEER

2011 - JCR Evaluation Form

SPECIES: Mule Deer | PERIOD: 6/1/2011 - 5/31/2012

HERD: MD534 - GOSHEN RIM

HUNT AREAS: 15-16, 55, 57 | PREPARED BY: MARTIN HICKS

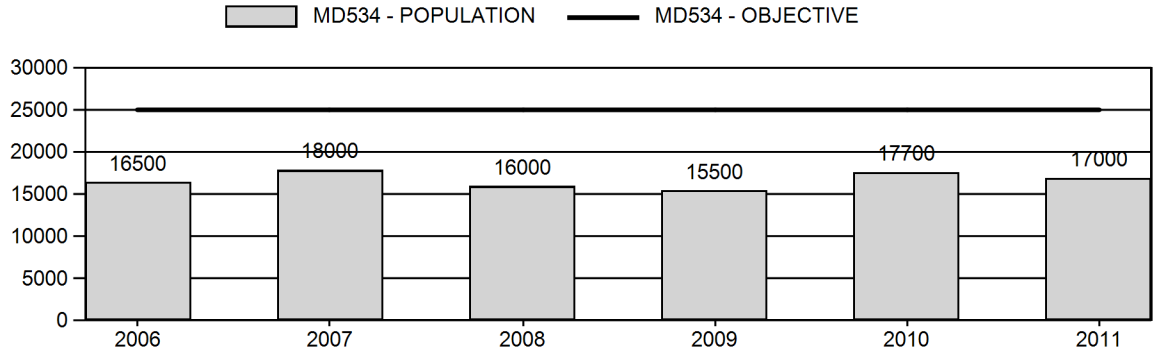
	2006 - 2010 Average	2011	2012 Proposed
Population:	16,740	17,000	17,000
Harvest:	774	804	775
Hunters:	1,570	1,781	1,750
Hunter Success:	49%	45%	44%
Active Licenses:	1,623	1,839	1,800
Active License Percent:	48%	44%	43%
Recreation Days:	6,001	6,829	6,700
Days Per Animal:	7.8	8.5	8.6
Males per 100 Females	33	33	
Juveniles per 100 Females	58	65	

Population Objective:	25,000
Management Strategy:	Recreational
Percent population is above (+) or below (-) objective:	-32%
Number of years population has been + or - objective in recent trend:	21
Model Date:	02/29/2012

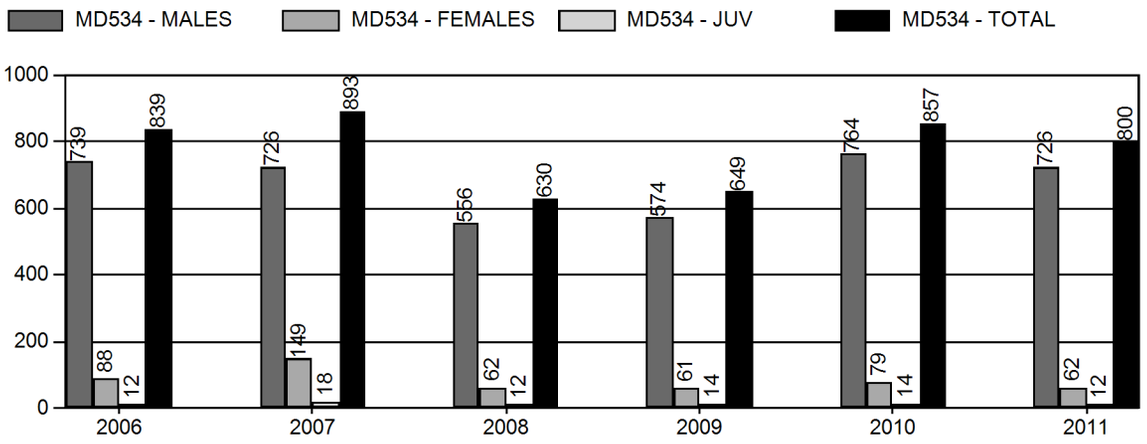
Proposed harvest rates (percent of pre-season estimate for each sex/age group):

	JCR Year	Proposed
Females ≥ 1 year old:	.7%	.7%
Males ≥ 1 year old:	18.3%	18.9%
Juveniles (< 1 year old):	.2%	.3%
Total:	4.5%	4.4%
Proposed change in post-season population:	-4%	0%

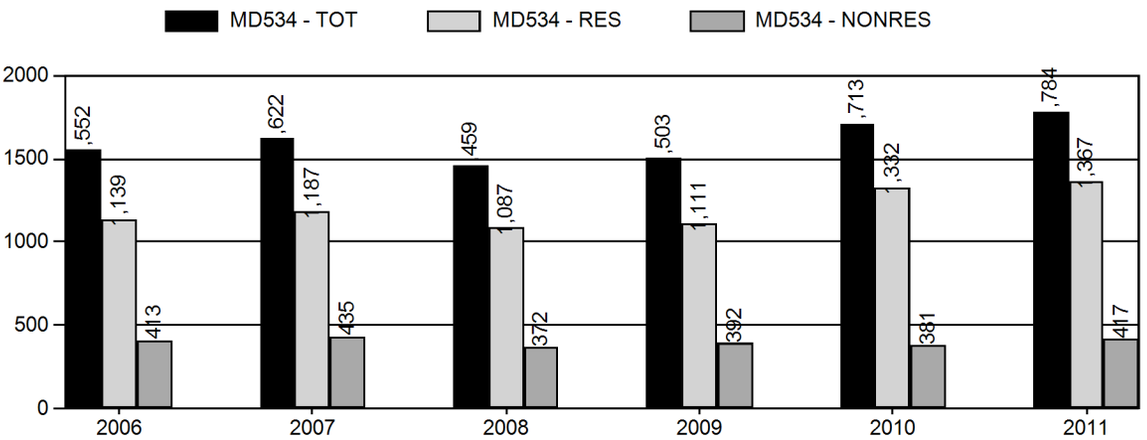
Population Size - Postseason



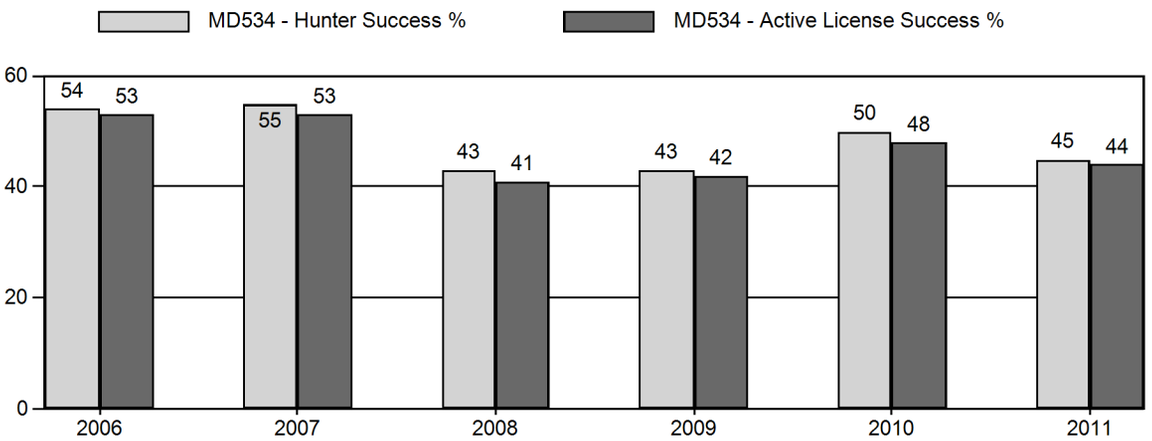
Harvest



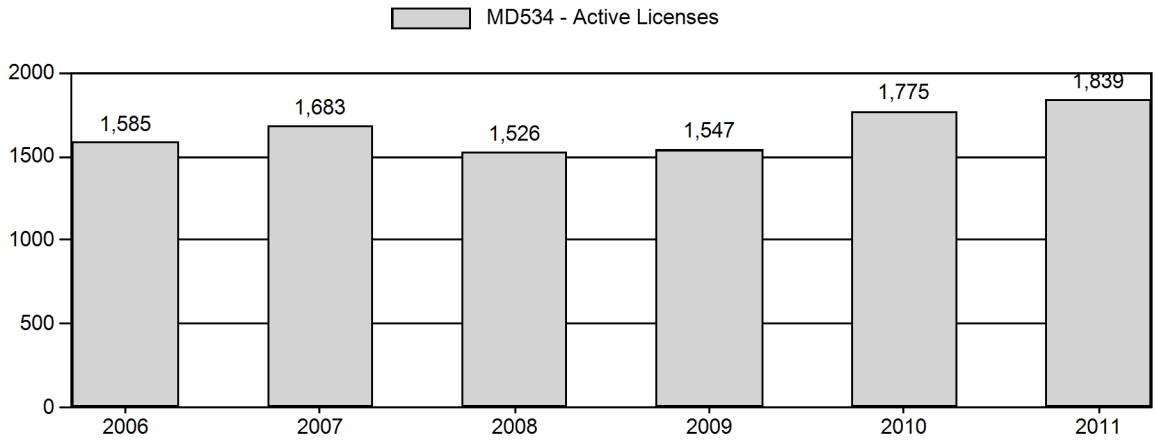
Number of Hunters



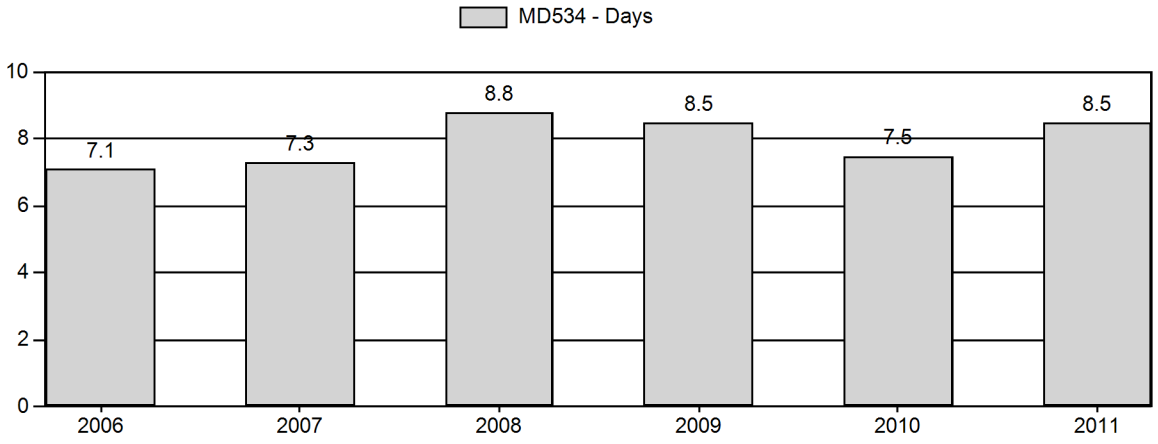
Harvest Success



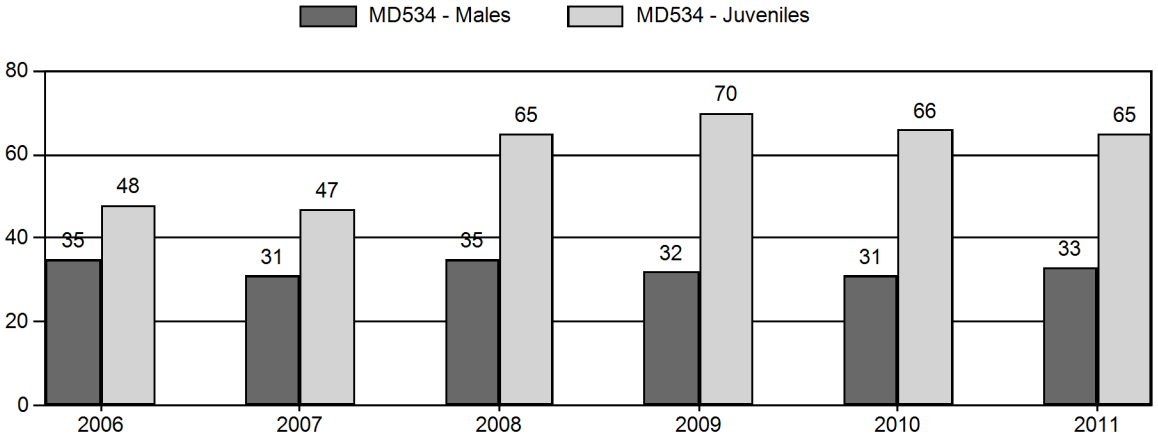
Active Licenses



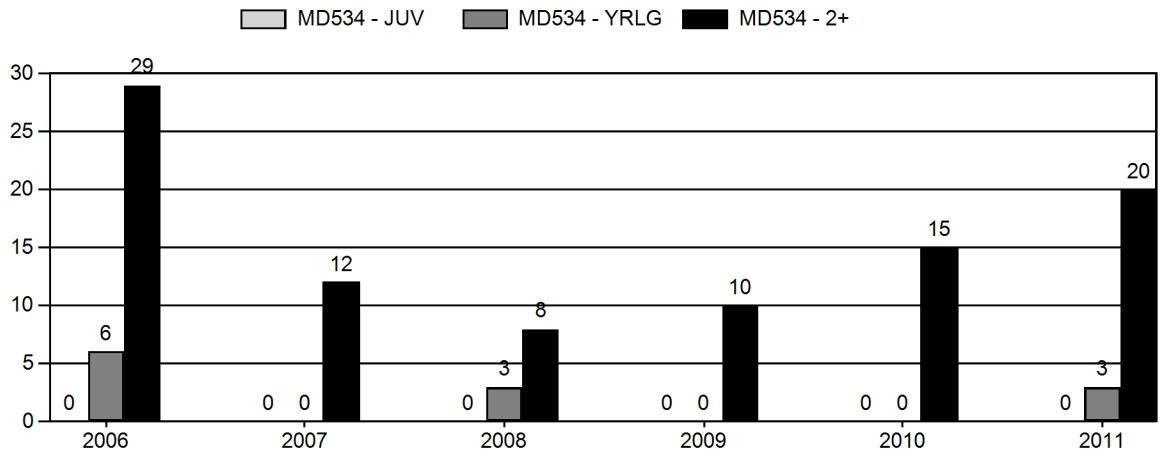
Days per Animal Harvested



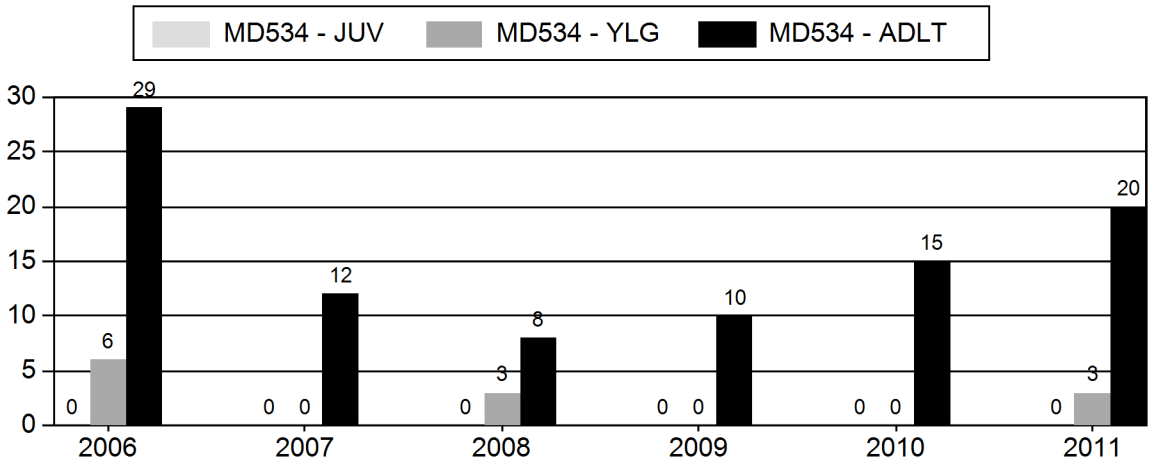
Postseason Animals per 100 Females



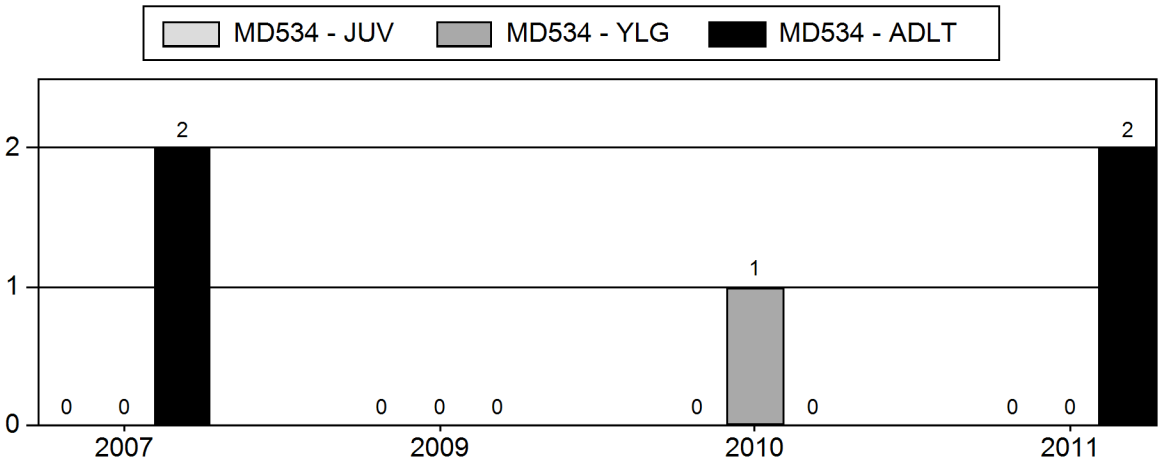
Age Structure of Field Checked Males



Age Structure Data (Field and Laboratory) - Male



Age Structure Data (Field and Laboratory) - Female



GOSHEN RIM MULE DEER
(MD534)
Hunt Areas 15, 16, 55, 57
2009-2011 Biological Years (6/1/2009-5/31/2012)

INTRODUCTION

The 2011 post season estimate for the Goshen Rim Mule Deer Herd Unit is 17,000 mule deer, 32% below the objective of 25,000. This herd unit is managed for recreational buck ratios within the range of 20-29 bucks:100 does observed during post-season classifications.

The 2011 post-season buck ratios (33bucks:100 does) were the same as the five-year average, but there appears to be a slight decline in trend. Juvenile ratios in 2011 (65 fawns:100 does) were well above the five-year average of 58 fawns:100does, but still below the adequate level (Unsworth et al. 1999) to maintain or increase the population.

In 2011 the season length for Hunt Areas 55 and 57 were decreased from 14 days to 11 days based on decreased success and increased effort statistics.

Chronic Wasting Disease (CWD) continues to impact this herd unit, but to what extent is unknown. In 2011 there were 21 mule deer tested throughout the herd unit, with 6 positives for a prevalence rate of 28%, which is significantly higher than the long-term average of 9%.

For extensive background information on the Goshen Rim Mule Deer Herd, the reader is referred to the 2002 Job Completion Report.

WEATHER

A state-wide weather report from Biological Services was not available for this reporting period. However, a memo was sent to Wildlife Division from the Laramie Region summarizing weather data in southeast Wyoming from October 2011 to April 2012 (Appendix A). Basically this past winter was very mild and most likely there was little winter mortality on mule deer. Since April 2012 the area has experience little to no precipitation resulting in a drastic decrease in herbaceous production. Most recently the largest impact to the environment from this drought is four major wildfires totaling over 110,000 acres. The majority of fires have been in the Laramie Range, but there was one fire north of Guernsey, WY that burned 2,600 acres. Perennial streams are drying up, reservoirs have been depleted and landowners are de-stocking cattle herds because of lack of grass throughout southeast Wyoming.

Weather conditions from 2010-2011 were the complete opposite compared to 2012. Winters were more severe and spring/summer precipitation was well above average. Major flooding events occurred, reservoirs were filled and grass/forb/shrub production increased compared to long term averages.

Juvenile mortality during the 2010 and 2011 winters appeared normal to excessive based on ratios throughout the herd units. During the mild winter of 2011/12 juvenile mortality was likely negligible. Neonate mortality during the Spring of 2012 appears to be excessive based on few fawns observed due to drought and fire conditions. It is expected that female mule deer will go into the winter of 2012/13 in poor condition resulting in below average birth rates for the 2013 biological year and herd units will most likely experience a decrease in population.

HABITAT CONDITIONS/ASSESSMENT

The reader is referred to Appendix A for a full habitat report containing vegetation sampling within the Goshen Rim Mule Deer Herd Unit. Survey efforts have waned over the past several years within this herd unit. There is very little opportunity to treat old, decadent shrub stands based on topography and land ownership patterns. Based on the small sample size of habitat data, it is evident that the mixed mountain shrubs (mountain mahogany, antelope bitterbrush, and skunkbush sumac) are in poor condition and provide very little nutrients for wintering mule deer.

POPULATION

Table 1. Postseason Classification Data, MD534, 2006-2011.

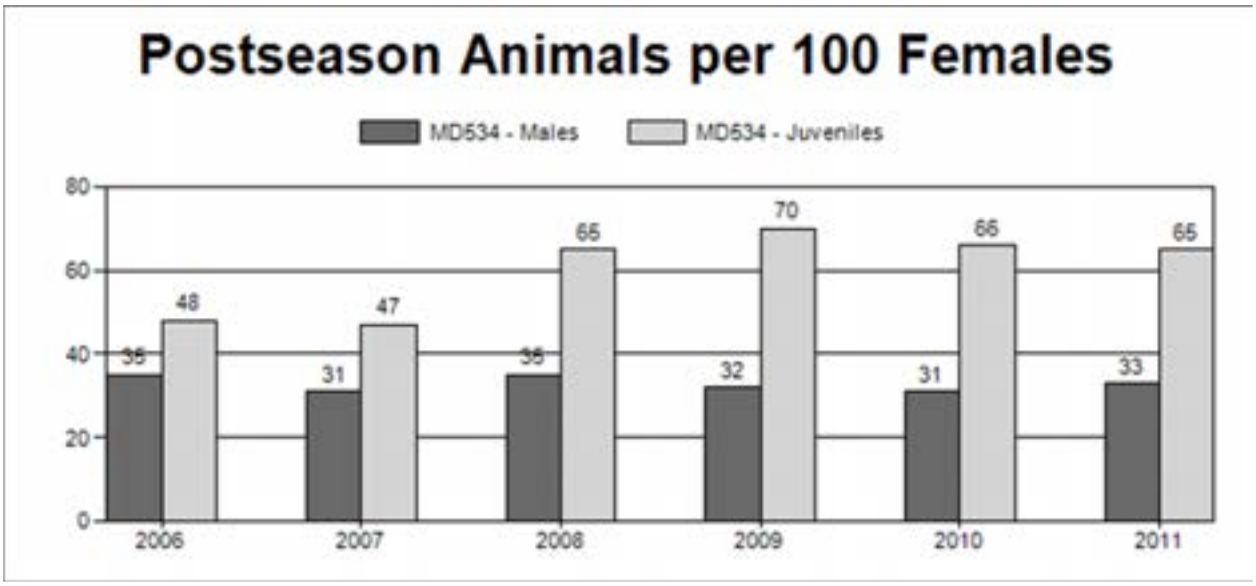
		MALES				FEMALES		JUVENILES				Males to 100 Females				Young to		
Year	Post Pop	Ylg	Adult	Total	%	Total	%	Total	%	Tot Cls	Cls Obj	Ylng	Adult	Total	Conf Int	100 Fem	Conf Int	100 Adult
2006	16,500	94	129	223	19%	642	55%	306	26%	1,171	1,325	15	20	35	± 0	48	± 0	35
2007	18,000	57	118	175	17%	566	56%	267	26%	1,008	1,016	10	21	31	± 0	47	± 0	36
2008	16,000	57	106	163	18%	462	50%	299	32%	924	1,143	12	23	35	± 4	65	± 6	48
2009	15,500	44	98	142	16%	442	49%	311	35%	895	1,210	10	22	32	± 4	70	± 6	53
2010	17,700	80	125	205	16%	668	51%	440	34%	1,313	1,123	12	19	31	± 0	66	± 0	50
2011	17,000	116	226	342	17%	1,031	51%	665	33%	2,038	1,364	11	22	33	± 2	65	± 4	48

Adequate samples size for the postseason classification surveys were above the objective (80% C.L.) two out of the six reporting years (Table 1). Buck ratios fluctuated around 33bucks:100does with the highest recorded in 2006 and 2008. All six years fall above the upper end of the recreational management guidelines (20-29 bucks:100 does). These inflated ratios are most likely a result of limited access throughout the herd unit. However, landowners and hunters have expressed concerns about buck numbers for the past several years.

Fawn ratios have fluctuated around 58 fawns:100 does for the past five years, and experienced a increase in 2011 (Table 1). However, these rates are still below 66 fawns:100does needed to increase a population (Unsworth et al. 1999). Fawn ratios

appear to fluctuate well with precipitation levels but still not to the level to increase the population towards the objective of 25,000.

Graph1. Postseason Classification MD534, 2006-2011.



Juvenile ratios appear to have a increasing trend (Graph 1) over the last six years while male ratios appear to have a stable to slightly decreasing trend (Graph 1).

The population is anchored to juvenile ratios and simulated above yearling buck, 2+male and adult male ratios using POP II. Simulations are tightly aligned with adult male ratios; since this is most likely the best data collected during post-season herd composition surveys. Yearling males can be misclassified and 2+ males can be missed. Decreasing buck ratios coupled with inadequate fawn ratios contributed to a decrease in the overall population. Harvest statistics appears to support this theory with a decreasing trend in success and an increasing trend in effort, indicating deer are becoming harder to find. Seasons have been adjusted to focus effort on the male segment with little pressure placed on the female segment to try and increase the herd. However, this harvest prescription has been in place for several years and the population has not responded positively. Drought, chronic wasting disease and poor habitat conditions have all played a role in suppressing this population.

The WGFD will change the way ungulate populations are estimated starting biological year 2012. POP II will be replaced by Spreadsheet Models that were developed by G. White and B. Lubow, of the Colorado Division of Wildlife. Based on input from T. Morrison of the Wyoming Cooperative Fish and Wildlife Research Unit, the Spreadsheet Model provides a more statistically rigorous way to estimate population sizes and to compare different models (Morrison, 2012).

HUNTING SEASON

GOSHEN RIM MULE DEER (MD534)
HUNT AREAS 15, 16, 55, 57
2011 HUNTING SEASONS

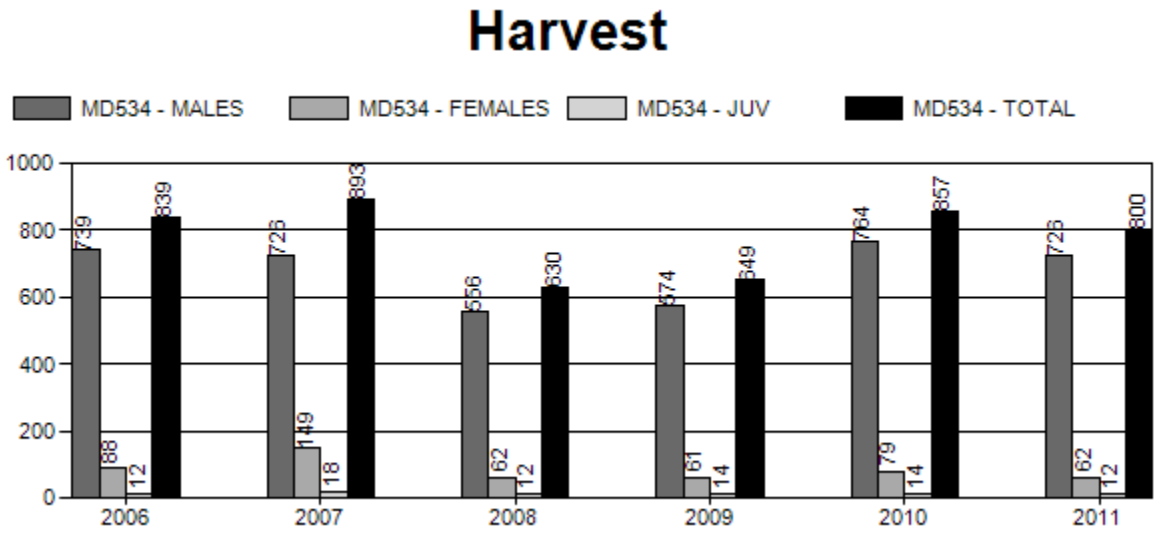
HUNT AREA	TYPE	OPENS	CLOSES	LIMITATIONS
*15 *CWD Area	GEN	OCT. 1	OCT. 15	General license; antlered mule deer or any white-tailed deer.
	6	OCT. 1	OCT. 15	L.Q.; 25 licenses doe or fawn
*16 *CWD Area	GEN	OCT. 1	OCT. 14	General license; antlered mule deer or any white-tailed deer
	2	NOV. 1	DEC. 15	L.Q. 50 licenses any deer valid in that portion of Area 16 east of U.S. Highway 85 and south of the Tea Kettle Road (Goshen County Road 92B) and Goshen County Road 94
	6	NOV. 1	DEC. 15	L.Q. 50 licenses doe or fawn deer valid in that portion of Area 16 east of U.S. Highway 85 and south of the Tea Kettle Road (Goshen County Road 92B) and Goshen County Road 94
*55 *CWD Area	GEN	OCT. 1	OCT. 11	General license; antlered mule deer or any white-tailed deer.
	6	OCT. 1	DEC. 15	L.Q.; 50 licenses doe or fawn valid in that portion of Area 55 in Goshen County and north of the Laramie river in Platte county.
*57 *CWD Area	GEN	OCT. 1	OCT. 11	General license; antlered mule deer or any white-tailed deer.
	6	Oct. 1	NOV. 30	L.Q.; 50 licenses doe or fawn deer
ARCHERY				
15, 16, 55, 57		SEPT. 1	SEPT. 30	Refer to Section 3 of this Chapter

Table 2. 2011 Harvest, MD534

Area	Type	Active Lic/Htrs		Buck	Doe	Fawn	Total	Success	Days/Harvest	Days	Licenses Sold
2011											
15 SOUTH KELINE											
	General	208		97	0	0	97	46.60%	7.9	766	
	Type 6	23		0	7	2	9	39.10%	7.6	68	25
Pooled Total		218	(231)*	97	7	2	106	48.60%	7.9	834	
Pooled Resident		140		52	3	2	57	40.70%	9	512	
Pooled Nonresident		78		45	4	0	49	62.80%	6.6	322	
16 JAY EM											
	General	501		239	0	0	239	47.70%	8.2	1965	
	Type 2	44		17	4	0	21	47.70%	6.2	131	51
	Type 6	37		0	28	2	30	81.10%	3.5	104	50
Pooled Total		568	(582)*	256	32	2	290	51.10%	7.6	2200	
Pooled Resident		416		182	19	2	203	48.80%	8.4	1705	
Pooled Nonresident		152		74	13	0	87	57.20%	5.7	495	
55 ROCK EAGLE											
	General	653		202	0	0	202	30.90%	10.7	2168	
	Type 6	34		0	12	2	14	41.20%	8.3	116	50
Pooled Total		672	(687)*	202	12	2	216	32.10%	10.6	2284	
Pooled Resident		515		124	10	2	136	26.40%	12.9	1756	
Pooled Nonresident		157		78	2	0	80	51.00%	6.6	528	
57 SOUTHEAST											
	General	424		171	0	0	171	40.30%	8.2	1397	
	Type 6	31		0	11	6	17	54.80%	9.6	163	50
Pooled Total		439	(455)*	171	11	6	188	42.80%	8.3	1560	
Pooled Resident		365		119	3	6	128	35.10%	9.8	1251	
Pooled Nonresident		74		52	8	0	60	81.10%	5.2	309	
2011 Hunt Area Total		1897	(1955)*	726	62	12	800	42.20%	8.6	6878	226
2011 Herd Total		1784	(1842)*	726	62	12	800	44.80%	8.6	6878	226

*Active Licenses

Graph 2. MD534 Harvest Data, 2006-2011.

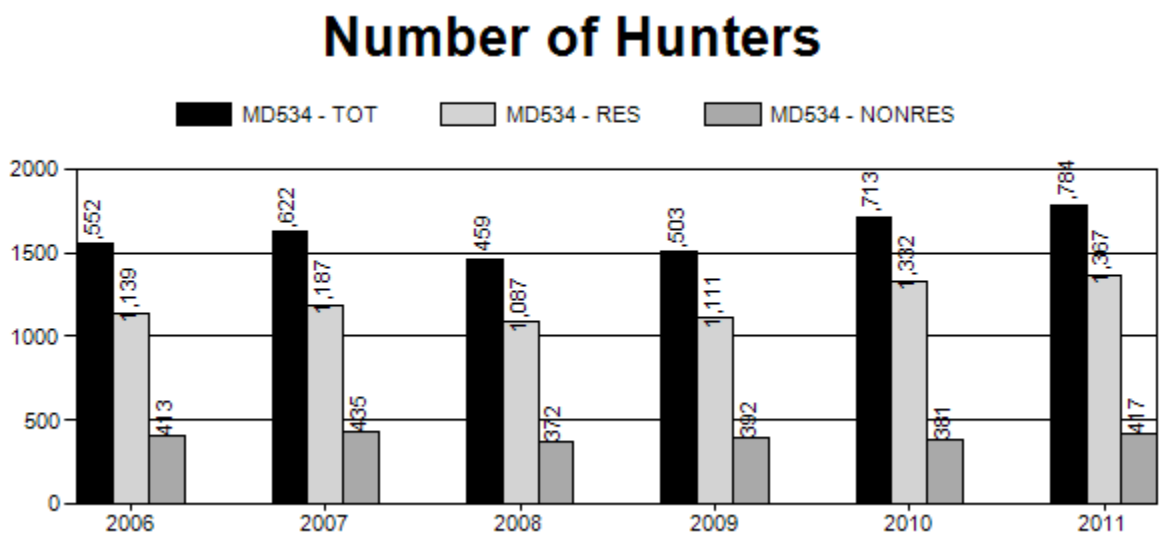


The 2011 season was designed to increase the population, while focusing harvest efforts on isolated damage areas, particularly in Hunt Areas 16 and 55. Based on harvest statistics, hunters were having a harder time finding a mature buck in Hunt Areas 55 and 57; therefore the season length was decreased by 4 days. A total of 800 mule deer (Table 2 and Graph 2), were harvested in 2011, which is slightly higher than the five year average of 773 mule deer. From 2008-2009, there was a significant decrease in harvest. This is most likely due to a slight decrease in buck ratios and unusually hot temperatures during the opening weekend of the season. Doe/fawn harvest rate comprises 1% of the total population, which is very minimal and does not affect population growth.

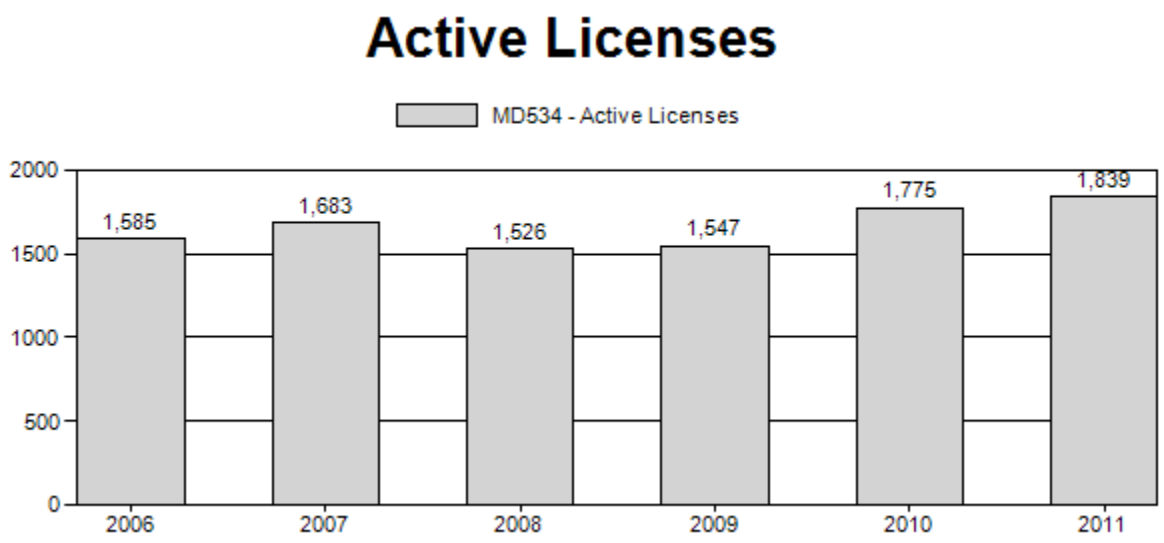
Type 6 licenses (n=175) only comprise 9% of the total license sales, which has little impact in population reduction. These licenses are designed to focus harvest pressure on isolated damage issues around La Grange, Lingle, Yoder and north of the Laramie River in Platte County.

HARVEST

Graph 3. MD534 Hunter Data, 2006-2011.

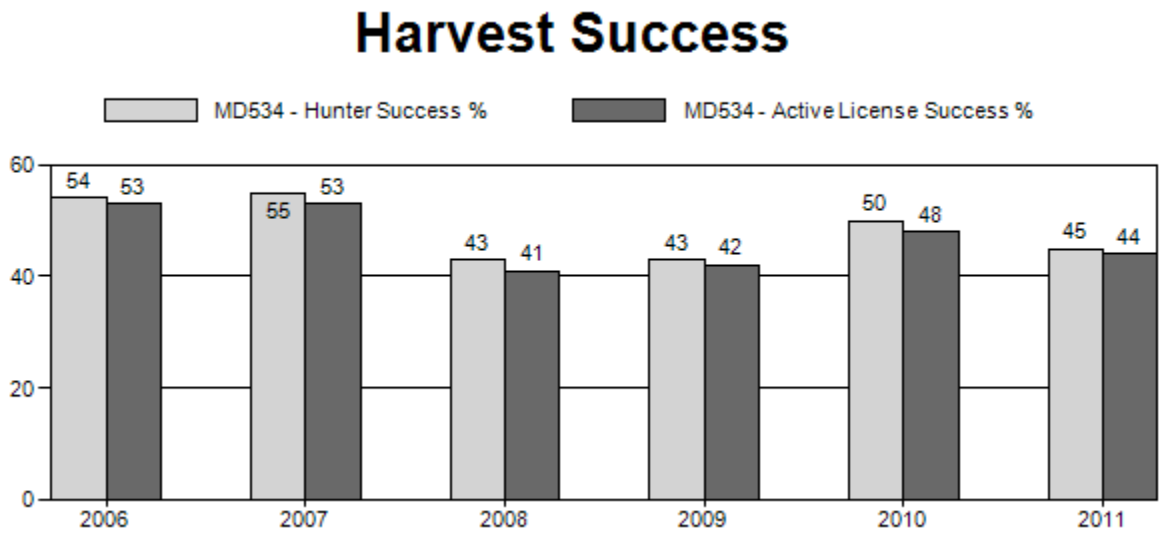


Graph 4. MD534 Active Licenses, 2006-2011.

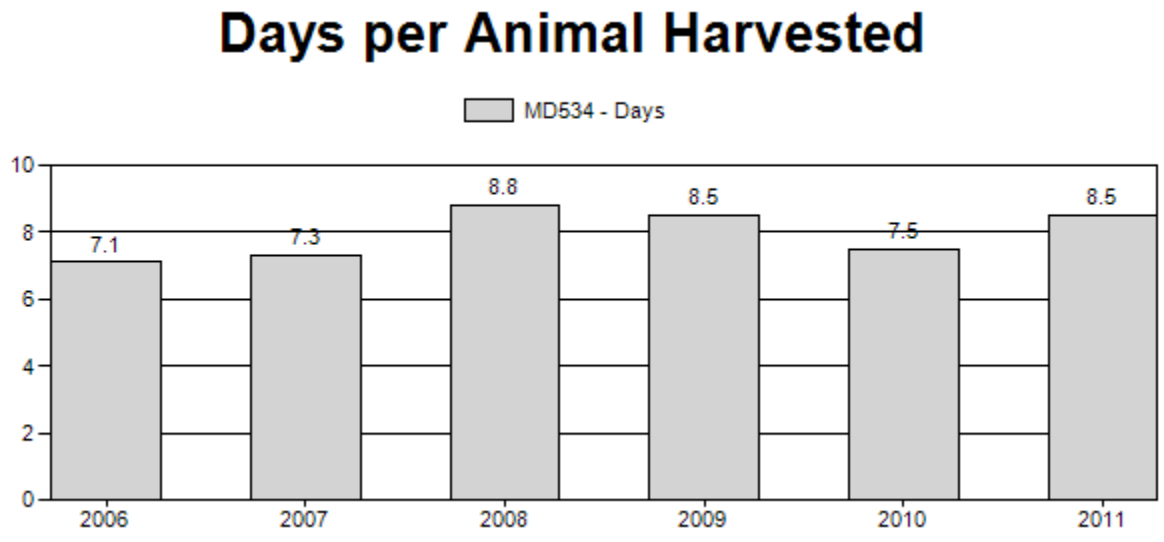


Hunter numbers took a dip from 2008-2009 then increased back to the highest observed in 2011 (Graph 3). Active licenses followed the same trend, and were only slightly higher than hunter numbers due to the limited number of Type 6 licenses hunters could obtain in addition to a general deer license (Hunters in Hunt Areas 15,16,55,57 may obtain up to two Type 6 licenses after the initial draw). Hunter numbers most likely increased from 2009-2011 as a result of the Department's Private Lands Public Wildlife Program that increased the number of Walk-In Areas and Hunter Management acres. Opening weekend temperatures also remained somewhat mild to help facilitate hunters going to the field.

Graph 5. MD534 Harvest Success Data, 2006-2011.

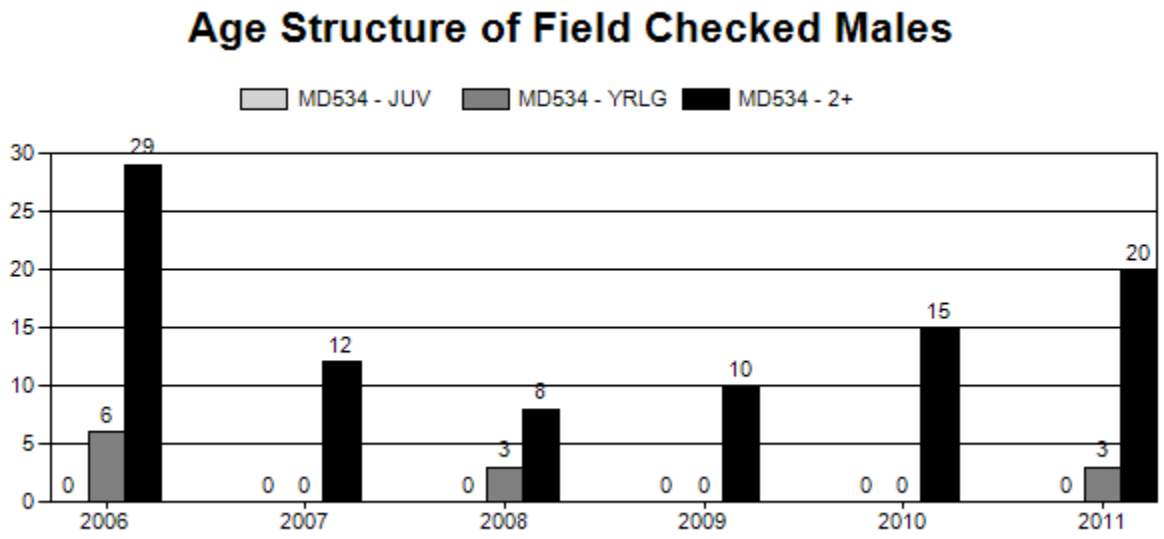


Graph 6. MD534 Days per Animal Harvested, 2006-2011.

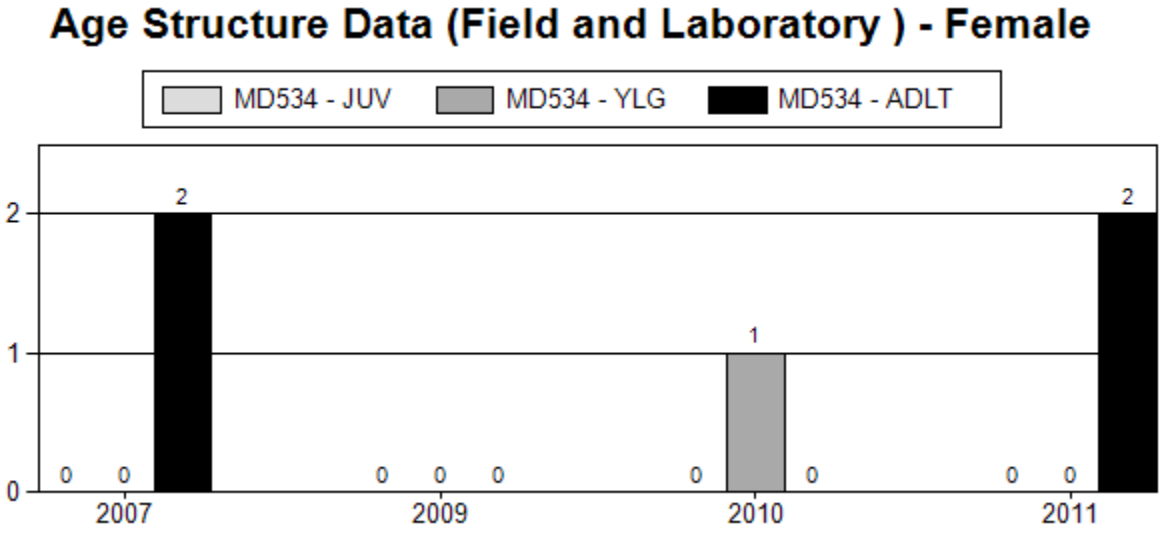


Harvest statistics support population simulations that the herd has been decreasing for a number of years. Success (Graph 5) has been decreasing and effort (Graph 6) has been increasing over the last six years indicating mule deer have been difficult to find. Poor recruitment, difficult access, drought, poor habitat conditions and CWD have all played a major role in the decrease in deer numbers.

Graph 7. MD534 Hunter Field Checked Males, 2006-2011.



Graph 8. MD534 Hunter Field Checked Females, 2006-2011.



It is not possible to draw conclusions about the female age structure due to the small sample size of field checked females (Graph 8). Based on the field checked males the ten-year average percentage of adult males is 17%, and the five-year average number of yearling males classified is 35%. This indicates that hunters are most likely selecting 2+ male deer to harvest. This appears logical since the majority of hunting occurs on private land, where hunters are either paying a trespass or outfitter fee, and as a result are selecting for older age class male deer.

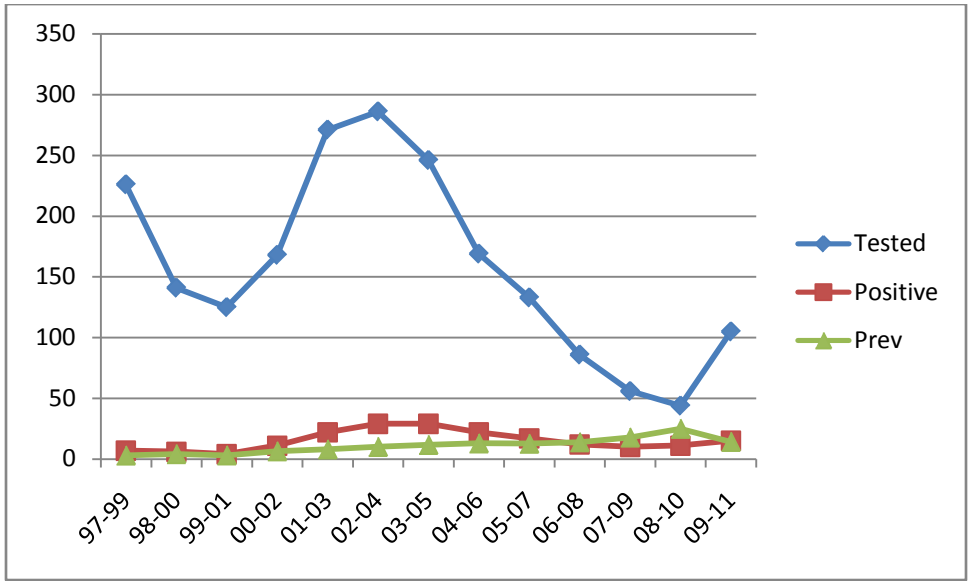
OTHER MANAGEMENT ISSUES

Chronic Wasting Disease

An intensive effort began during the 1997 hunting season to determine the prevalence of chronic wasting disease (CWD), a transmissible spongeform encephalopathy that is fatal to members of the deer family (Williams, 2005). Efforts were increased in 2003 by established check stations in Wheatland, Cheyenne, Torrington and Lingle for the first five days of the season and collecting lymph nodes to be tested for CWD, harvest location, age, and fat deposition. Subsequent stations were set up during the 2004-05 seasons, then efforts were decreased (Graph 9) and focused on other herd.

Prevalence rates increased from 3% during 1997-99 up to 25% from 2008-10. This increase is likely real but may also have resulted from testing more deer. Prevalence rates are not as high as adjacent herd units (Laramie Mountains and South Converse), but continue to remain around 12%. CWD positive mule deer have now been found in all four hunt areas. Area 55 continues to have the highest number of deer tested and the highest prevalence of positive cases in the herd unit.

Graph 9. Three-year running averages for CWD prevalence rates in MD534, 1997-2011.



HABITAT

There are no ongoing or completed projects at this time.

Currently the habitat issues within the Goshen Rim Mule Deer Herd unit are associated with poor habitat conditions existing in shrub stands. Many stands are old and decadent resulting in poor nutrient quality for pregnant and lactating does as well as wintering deer. The majority of deer rely upon agricultural crops for their year round nutrient requirements. This can cause consternation with landowners at times. Attempts to treat shrub stand has met with little success. Typically these stands are adjacent to farmsteads or subdivisions and treatment efforts elicit opposition from the public. In addition they are also within topography that does not tend to carry a flame without leaving some residue from the previous growing season.

MANAGEMENT RECOMMENDATIONS

1. Surveillance for chronic wasting disease should be continued for the 2012 season.

2. The Department should continue to work with the Farm Service Agency and the Natural Resources Conservation Service to improve grass stands enrolled into the 2012 Conservation Reserve Program (CRP). The majority of existing CRP stands have been in the program for over 20 years, with several extensions placed on after expiration with no enhancements. These stands are in need of some type of rejuvenation through complete re-seeding or stands enhancement to improve existing wildlife habitat. Stands have become monoculture grass stands that offer little in wildlife habitat. Incentives are available to landowners to improve these stands through the Commodity Credit Corporation, the Department's Private Lands Public Wildlife Program (PLPW) or non government organizations. Stand improvement can occur while they are still under contract or prior to enrollment into the program. There appears to be a sufficient number of stands enrolled into the PLPW program, manipulations of those stands to improve habitat components for all wildlife species should now be the priority.

3. Data collection is critical in management of Wyoming's deer herds. However, management of this herd unit continues to be difficult due to landownership and lack of access for hunters. Harvest field check data collection in the past has been marginal at best and has not greatly impacted the management of this herd. Efforts should be extended to areas where actual management is applicable (i.e. Laramie Mountains). These validated data could then be used to assist in herds where management is more restrictive.

REFERENCES

Morrison, T. 2012. User Guide: Spreadsheet Model for Ungulate Population Data, Wyoming Cooperative Fish and Wildlife Research Unit, 4.

Unsworth, JW, Pac DF, White GC, and Bartmann BC: Mule deer survival in Colorado, Montana, and Idaho. J. Wildl. Manage. 63(1):315-326, 1999

Williams ES: Review Article, Chronic Wasting Disease. Vet Pathology 42:530-549, 2005

GOSHEN RIM MULE DEER (MD534)
HUNT AREAS 15, 16, 55, 57
2012 PROPOSED HUNTING SEASONS

HUNT AREA	TYPE	OPENS	CLOSES	LIMITATIONS
*15 *CWD Area	GEN	OCT. 1	OCT. 15	General license; antlered mule deer or any white-tailed deer.
	6	OCT. 1	OCT. 15	L.Q.; 25 licenses doe or fawn
*16 *CWD Area	GEN	OCT. 1	OCT. 14	General license; antlered mule deer or any white-tailed deer
	2	NOV. 1	DEC. 15	L.Q. 50 licenses any deer valid in that portion of Area 16 east of U.S. Highway 85 and south of the Tea Kettle Road (Goshen County Road 92) and Goshen County Road 94
	6	NOV. 1	DEC. 15	L.Q. 50 licenses doe or fawn deer valid in that portion of Area 16 east of U.S. Highway 85 and south of the Tea Kettle Road (Goshen County Road 92) and Goshen County Road 94
*55 *CWD Area	GEN	OCT. 1	OCT. 11	General license; antlered mule deer or any white-tailed deer.
	6	OCT. 1	DEC. 15	L.Q.; 50 licenses doe or fawn valid in that portion of Area 55 in Goshen County and north of the Laramie river in Platte county.
*57 *CWD Area	GEN	OCT. 1	OCT. 11	General license; antlered mule deer or any white-tailed deer.
	6	Oct. 1	NOV. 30	L.Q.; 50 licenses doe or fawn deer
ARCHERY				
15, 16, 55, 57		SEPT. 1	SEPT. 30	Refer to Section 3 of this Chapter

PROPOSED CHANGES FOR 2012

- There are no proposed changes for 2012
- Region T Licenses are proposed to stay the same at 500

2012 Season Proposal

- The postseason population of 17,000 is 32% below objective of 25,000

- The season is designed to maintain small percentage of doe harvest in areas with chronic damage concerns.
- In Hunt Areas 55 and 57 harvest success continues to decrease and effort increases. These harvest statistics combined with declining buck ratios warrant a eleven day general deer season.
- Fawn ratios continue to run below recommended ratio of 66 fawns:100 does to maintain or increase the population.
- In 2011 the CWD prevalence rate was 26%, which is
- Given average buck:100doe:fawn ratios and a harvest of 775 mule deer, the 2012 post-season population should be around 17,000 mule deer.
- 2012 Region T Nonresident Proposed Licenses: Nonresident Region T Licenses continue to go unsold (396 in 2011). Given the lack of sales and the restricted access we propose to keep the Region T permits at 500 for the 2012 season.

Data Set: MD534 2012ten year.gn1 02/29/2012 04:44 pm Page 1

Goshen Rim Mule Deer 2007
Data from 1990 to 2012 Simulation from 2001 to 2012

Age Class	Init Pop. Male	Init Pop. Female	Presn Male	Mort% Female	Postsn Mort% Male	Postsn Mort% Female	Effort Set 1 Male	Effort Set 1 Female	Effort Set 2 Male	Effort Set 2 Female
0	125.0	125.0	50.0	50.0	55.0	45.0	1.00	1.00	1.00	1.00
1	30.0	30.0	2.0	2.0	3.0	5.0	0.45	1.00	1.50	1.00
2	15.0	23.0	2.0	2.0	3.0	5.0	1.00	1.00	1.00	1.00
3	10.0	22.0	2.0	2.0	3.0	5.0	1.00	1.00	1.00	1.00
4	8.0	21.0	2.0	2.0	3.0	5.0	1.00	1.00	1.00	1.00
5	6.0	20.0	2.0	2.0	3.0	5.0	1.00	1.00	1.00	1.00
6	5.0	18.0	2.0	2.0	20.0	10.0	1.00	1.00	1.00	1.00
7	4.0	16.0	2.0	2.0	40.0	20.0	1.00	1.00	1.00	1.00
8	3.0	14.0	2.0	2.0	60.0	30.0	1.00	1.00	1.00	1.00
9	2.0	12.0	2.0	2.0	80.0	40.0	1.00	1.00	1.00	1.00
10	1.0	10.0	2.0	2.0	100.0	50.0	1.00	1.00	1.00	1.00
11	0.0	5.0	2.0	2.0	100.0	60.0	1.00	1.00	1.00	1.00
12	0.0	3.0	2.0	2.0	100.0	75.0	1.00	1.00	1.00	1.00
13	0.0	1.0	2.0	2.0	100.0	100.0	1.00	1.00	1.00	1.00

Sum = 529.0 Estimated Sum = 30500 Subadults: Ages 0 to 0

Data Set: MD534 2012ten year.gn1 02/29/2012 04:44 pm Page 2

MSI Function is Linear

Bio-Year	Preseason MSI	Harvest // Des. Pop Size in NA Subadults#	Males#	Females#	Postseason MSI	Effort & Wound Set Used
1990	1.00	13	916	234	1.05	2
1991	1.00	40	1434	422	1.00	1
1992	1.04	42	1363	788	1.00	2
1993	1.15	77	1575	822	1.00	1
1994	1.19	72	807	844	1.00	1
1995	1.02	48	918	411	1.00	1
1996	0.96	0	823	106	1.35	2
1997	1.05	4	661	161	1.00	2
1998	1.06	2	734	164	1.00	1
1999	0.90	29	978	205	1.00	1
2000	0.99	18	913	298	1.40	1
2001	1.27	29	759	253	1.00	1
2002	1.28	9	570	174	1.00	2
2003	1.06	37	586	217	1.10	1
2004	1.24	23	594	244	0.90	1
2005	0.97	15	708	116	1.20	1
2006	1.36	13	761	87	1.20	0
2007	1.40	18	726	149	0.90	1
2008	1.15	12	556	62	1.20	2
2009	1.06	15	566	54	1.10	1
2010	1.09	14	764	79	1.20	1
2011	1.12	12	729	63	1.20	1
2012	1.10	15	700	60	1.20	1

Set 1	Wounding Loss	10.%	10.%	10.%	Yearling Male 10.%
Set 2	Wounding Loss	10.%	10.%	10.%	Yearling Male 10.%

Bio-Year	Young/100 Fems Age 1 - 1	Young/100 Fems Age 2 - 13	Young/100 Fems Disabled	Sex Ratio: 50 : 50
1991	0.0	170.0	0.0	
1992	0.0	170.0	0.0	
1993	0.0	170.0	0.0	
1994	0.0	170.0	0.0	
1995	0.0	170.0	0.0	
1996	0.0	170.0	0.0	
1997	0.0	170.0	0.0	
1998	0.0	170.0	0.0	
1999	0.0	170.0	0.0	
2000	0.0	170.0	0.0	
2001	0.0	170.0	0.0	
2002	0.0	170.0	0.0	
2003	0.0	170.0	0.0	
2004	0.0	170.0	0.0	
2005	0.0	170.0	0.0	
2006	0.0	170.0	0.0	
2007	0.0	170.0	0.0	
2008	0.0	170.0	0.0	
2009	0.0	170.0	0.0	
2010	0.0	170.0	0.0	
2011	0.0	170.0	0.0	
2012	0.0	170.0	0.0	
2013	0.0	0.0	0.0	

Table 1. Population Size During Bio-Year for MD534 2012ten year.gn1 02/29/2012 04:44 pm

Bio-Year	Start	Pre-Season	Post Season	End	%Growth
2001	30500	20939	19793	15075	-0.5
2002	30338	20184	19356	14856	-3.3
2003	29327	21343	20419	14960	-1.8
2004	28805	19850	18903	15243	1.8
2005	29332	22203	21280	15141	-1.4
2006	28910	19135	18188	13843	-4.5
2007	27599	17582	16600	13546	-3.1
2008	26756	18849	18156	13060	-4.0
2009	25678	18714	18015	13267	0.2
2010	25738	18652	17709	12675	-2.6
2011	25073	17846	16962	12134	-3.4
2012	24209	17301	16448	11729	-51.6

Table 2. Preseason Natural Mortality for MD534 2012ten year.gn1 02/29/2012 04:44 pm

Bio-Year	Sub-Adults	Adult Males	Adult Females	Total	% of Pop
2001	9153	123	286	9561	31.3
2002	9769	119	267	10155	33.5
2003	7670	103	212	7985	27.2
2004	8584	127	244	8955	31.1
2005	6833	105	191	7129	24.3
2006	9363	146	266	9775	33.8
2007	9629	133	255	10017	36.3
2008	7596	105	207	7907	29.6
2009	6687	92	185	6964	27.1
2010	6797	97	192	7086	27.5
2011	6943	91	193	7226	28.8
2012	6642	83	184	6909	28.5

Table 3. Harvest Mortality for MD534 2012ten year.gn1 02/29/2012 04:44 pm

Bio-Year	Sub-Adults	Adult Males	Adult Females	Total	% of Pop
2001	29	759	253	1041	5.0
2002	9	570	174	753	3.7
2003	37	586	217	840	3.9
2004	23	594	244	861	4.3
2005	15	708	116	839	3.8
2006	13	761	87	861	4.5
2007	18	726	149	893	5.1
2008	12	556	62	630	3.3
2009	15	566	54	635	3.4
2010	14	764	79	857	4.6
2011	12	729	63	804	4.5
2012	15	700	60	775	4.5

Table 4. Harvest Percentages for MD534 2012ten year.gn1 02/29/2012 04:44 pm

Bio-Year	Sub-Adults	Adult Males	Adult Females	Total	Yearling Males
2001	0.6	16.1	2.3	4.97	20.0
2002	0.2	12.6	1.7	3.73	33.6
2003	0.5	12.4	2.2	3.94	13.4
2004	0.4	11.9	2.5	4.34	13.7
2005	0.2	13.4	1.2	3.78	12.7
2006	0.3	14.6	0.9	4.50	22.9
2007	0.4	15.8	1.7	5.08	7.8
2008	0.2	12.5	0.7	3.34	30.7
2009	0.3	13.3	0.6	3.39	11.2
2010	0.2	17.6	0.9	4.59	13.8
2011	0.2	18.3	0.7	4.51	12.2
2012	0.3	18.9	0.7	4.48	12.7

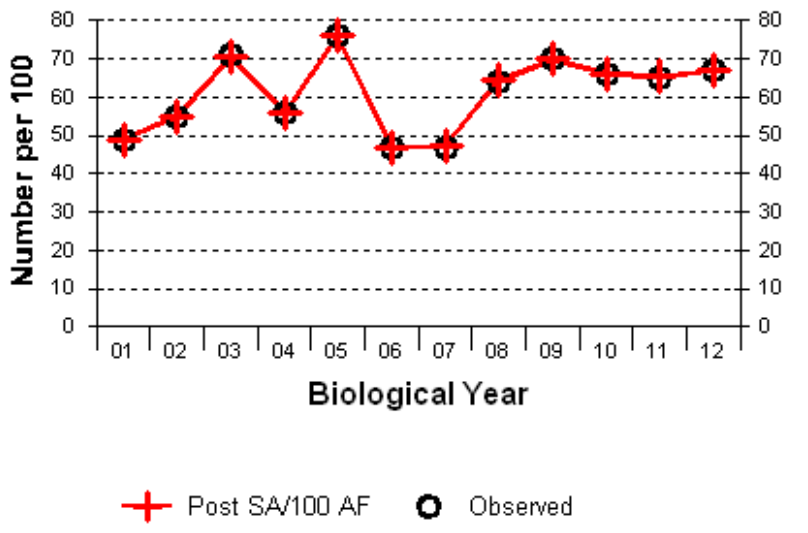
Table 5. Postseason Natural Mortality for MD534 2012ten year.gn1 02/29/2012 04:44 pm

Bio-Year	Sub-Adults	Adult Males	Adult Females	Total	% of Pop
2001	2615	404	1700	4719	23.8
2002	2743	310	1446	4499	23.2
2003	3718	316	1425	5459	26.7
2004	2356	253	1051	3660	19.4
2005	4344	368	1427	6139	28.9
2006	2635	399	1312	4345	23.9
2007	1848	292	913	3054	18.4
2008	3361	440	1295	5095	28.1
2009	3253	365	1131	4748	26.4
2010	3395	382	1257	5034	28.4
2011	3265	334	1229	4828	28.5
2012	3251	275	1194	4719	28.7

Table 7. Postseason Ratios for MD534 2012ten year.gn1 02/29/2012 04:44 pm

Bio-Year	Subadults /100 1+F	2+ Males /100 1+F	Yr. Males /100 1+F	Ad Males /100 1+F
2001	49.0	22.2	14.2	36.4
2002	55.1	29.9	9.4	39.3
2003	70.6	31.0	11.7	42.7
2004	56.1	33.4	13.0	46.3
2005	76.0	34.8	12.6	47.4
2006	46.7	36.0	10.7	46.7
2007	47.3	36.2	7.6	43.9
2008	64.3	34.6	9.5	44.0
2009	69.9	32.8	10.2	42.9
2010	66.2	28.9	12.0	40.9
2011	65.3	28.1	10.1	38.3
2012	66.8	26.1	10.0	36.1

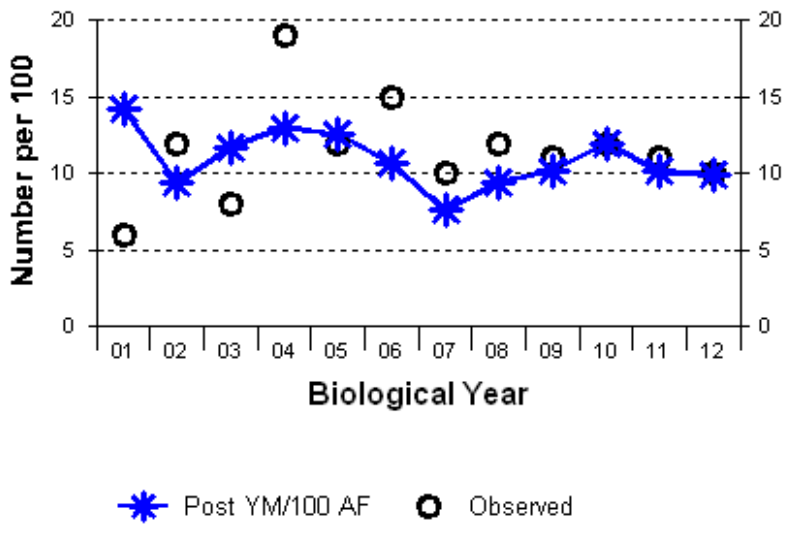
POP-II (V1.2.9) Graph 7. Postseason Ratios



)534 2012ten year.gn1, 02/29/2012 04:44 pm, Correlation (R) = 1, GOF = 0.996

YR	SIM	OBS
01	49	49
02	55	55
03	71	71
04	56	56
05	76	76
06	47	47
07	47	47
08	64	64
09	70	70
10	66	66
11	65	65
12	67	67
	AVERAGES	
of Col.	61	
of Pair	61	61

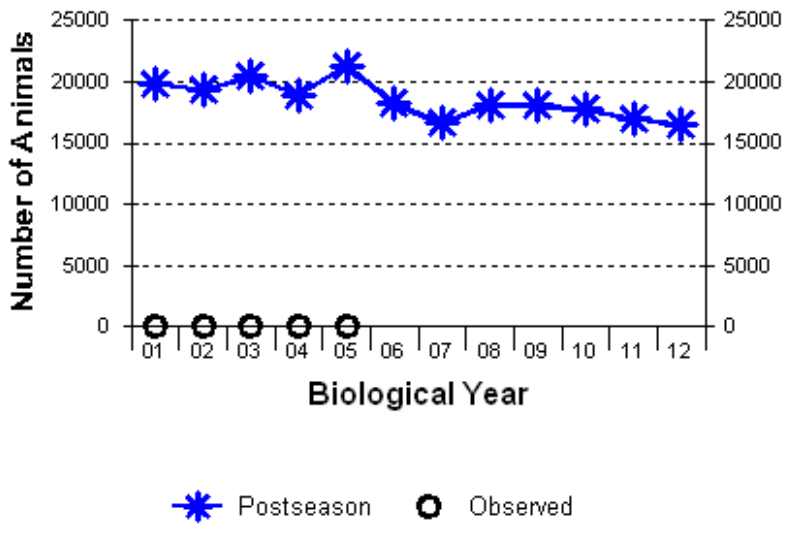
POP-II (V1.2.9) Graph 7. Postseason Ratios



2012ten year.gn1, 02/29/2012 04:44 pm, Correlation (R) = 0.011, GOF = 0.686

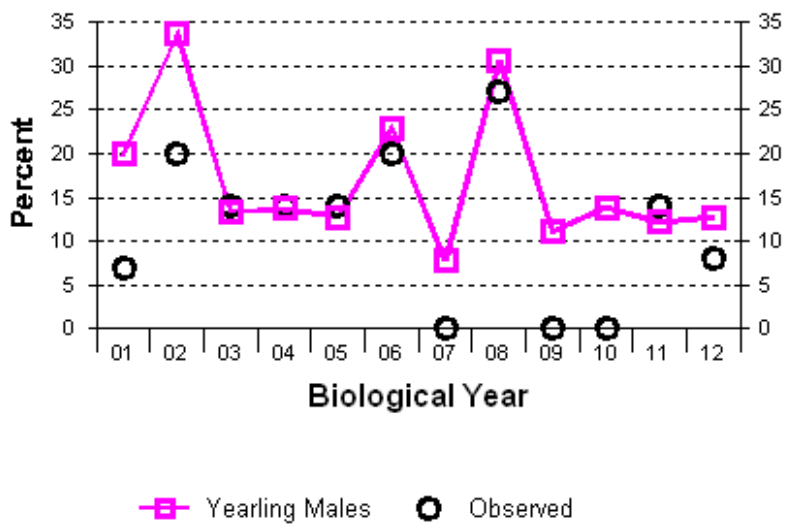
YR	SIM	OBS
01	14	6
02	9	12
03	12	8
04	13	19
05	13	12
06	11	15
07	8	10
08	9	12
09	10	11
10	12	12
11	10	11
12	10	10
	AVERAGES	
of Col.	11	
of Pair	11	12

POP-II (V1.2.9) Graph 1. Population Size During Bio-Year



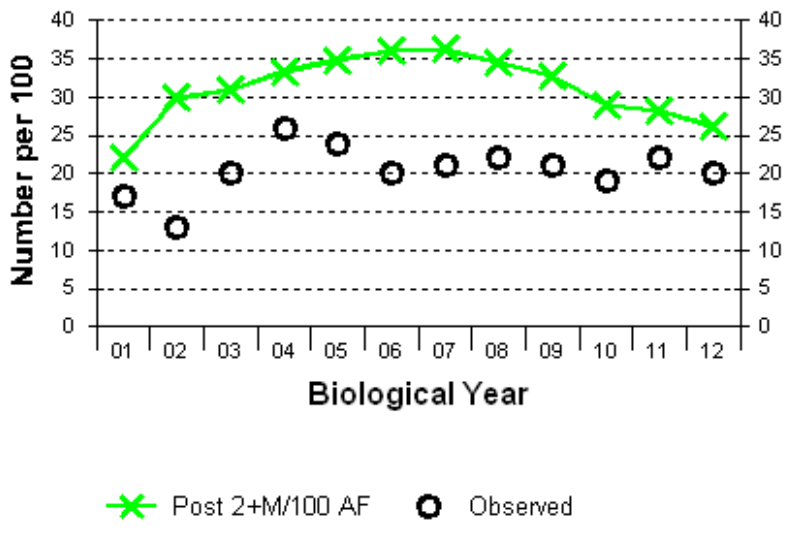
YR	SIM	OBS
01	19793	0
02	19356	0
03	20419	0
04	18903	0
05	21280	0
06	18188	-----
07	16600	-----
08	18156	-----
09	18015	-----
10	17709	-----
11	16962	-----
12	16448	-----
	AVERAGES	
of Col.	18486	
of Pair	19950	0

POP-II (V1.2.9) Graph 4. Harvest Percentages



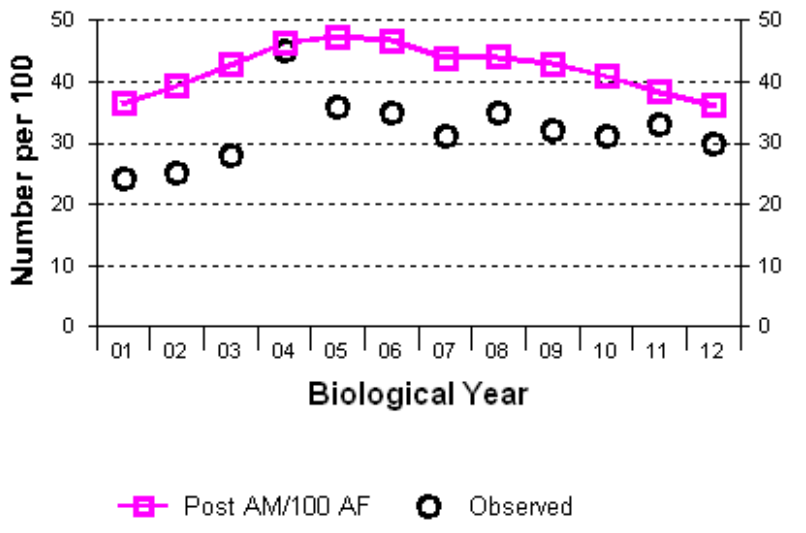
YR	SIM	OBS
01	20	7
02	34	20
03	13	14
04	14	14
05	13	14
06	23	20
07	8	0
08	31	27
09	11	0
10	14	0
11	12	14
12	13	8
	AVERAGES	
of Col.	17	
of Pair	17	12

POP-II (V1.2.9) Graph 7. Postseason Ratios

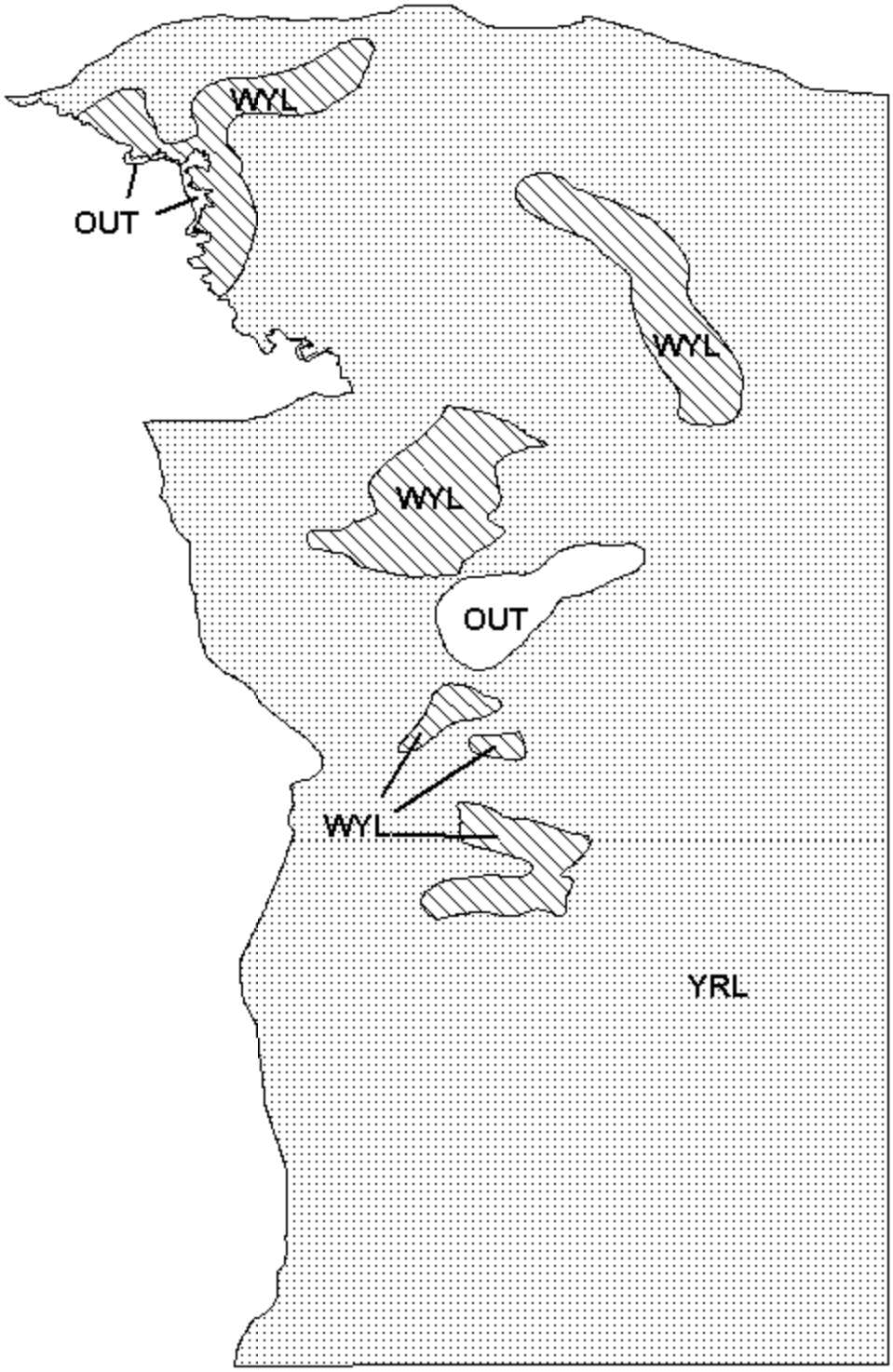


YR	SIM	OBS
01	22	17
02	30	13
03	31	20
04	33	26
05	35	24
06	36	20
07	36	21
08	35	22
09	33	21
10	29	19
11	28	22
12	26	20
	AVERAGES	
of Col.	31	
of Pair	31	20

POP-II (V1.2.9) Graph 7. Postseason Ratios



YR	SIM	OBS
01	36	24
02	39	25
03	43	28
04	46	45
05	47	36
06	47	35
07	44	31
08	44	35
09	43	32
10	41	31
11	38	33
12	36	30
	AVERAGES	
of Col.	42	
of Pair	42	32



Mule Deer (MD534) - Goshen Rim
HA 15, 16, 55, 57
Revised - 97

2011 - JCR Evaluation Form

SPECIES: Mule Deer | PERIOD: 6/1/2011 - 5/31/2012

HERD: MD537 - LARAMIE MOUNTAINS

HUNT AREAS: 59-60, 62-64, 73 | PREPARED BY: MARTIN HICKS

	2006 - 2010 Average	2011	2012 Proposed
Population:	26,100	22,750	20,000
Harvest:	1,415	1,194	1,000
Hunters:	2,352	2,232	1,900
Hunter Success:	60%	53%	53 %
Active Licenses:	2,438	2,297	1,950
Active License Percent:	58%	52%	51 %
Recreation Days:	10,319	10,599	9,500
Days Per Animal:	7.3	8.9	9.5
Males per 100 Females	40	35	
Juveniles per 100 Females	61	51	

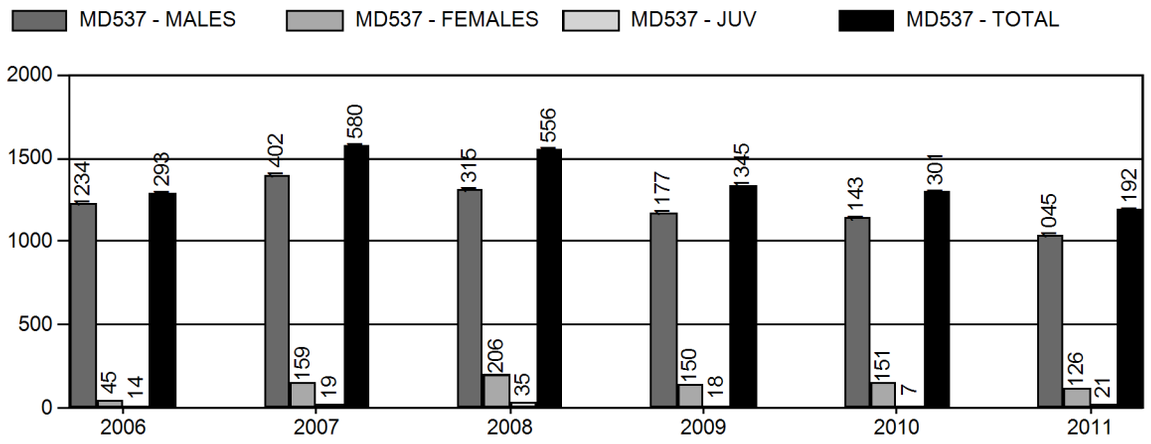
Population Objective:	29,000
Management Strategy:	Recreational
Percent population is above (+) or below (-) objective:	-21.6%
Number of years population has been + or - objective in recent trend:	17
Model Date:	02/29/2012

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

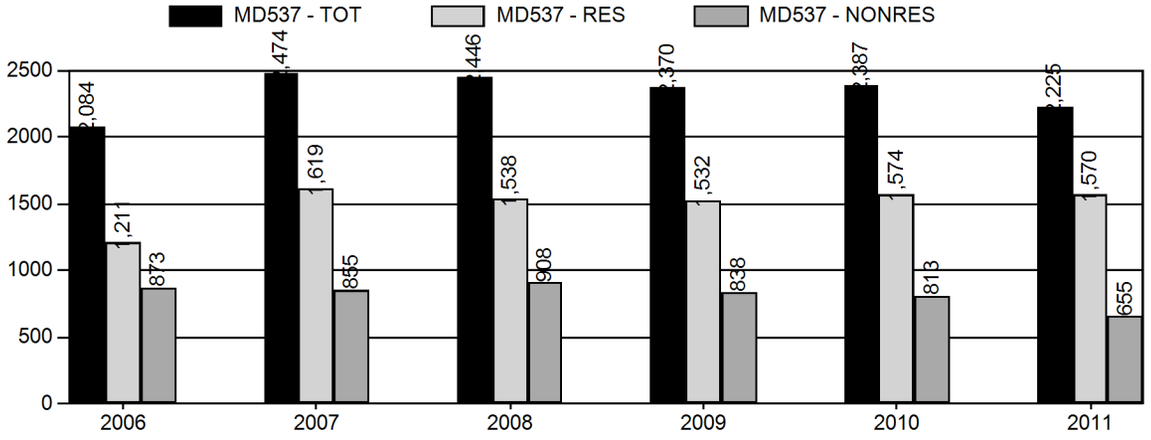
	JCR Year	Proposed
Females ≥ 1 year old:	1.1%	1.2%
Males ≥ 1 year old:	16.3%	19.4%
Juveniles (< 1 year old):	.4%	.3%
Total:	4.9%	5.6%
Proposed change in post-season population:	-9%	-13%

Population Size - Postseason

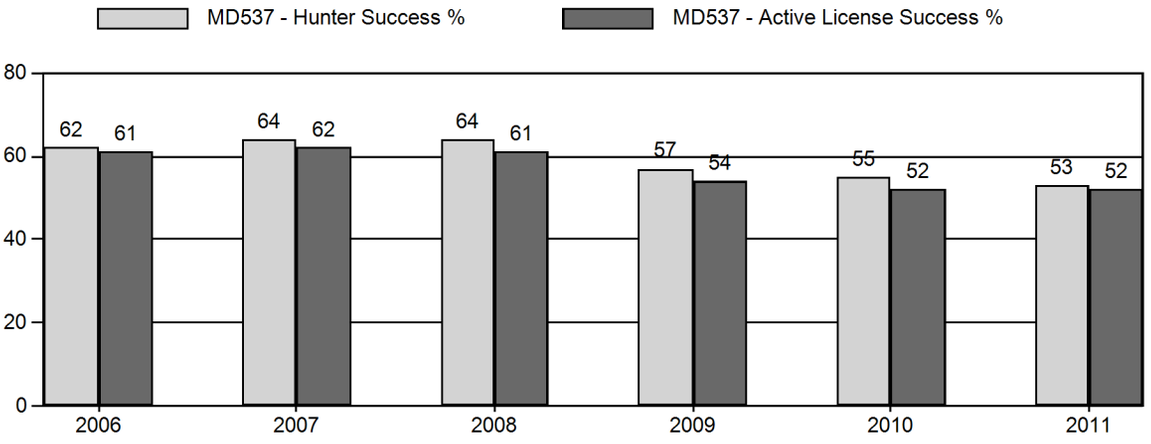
Harvest



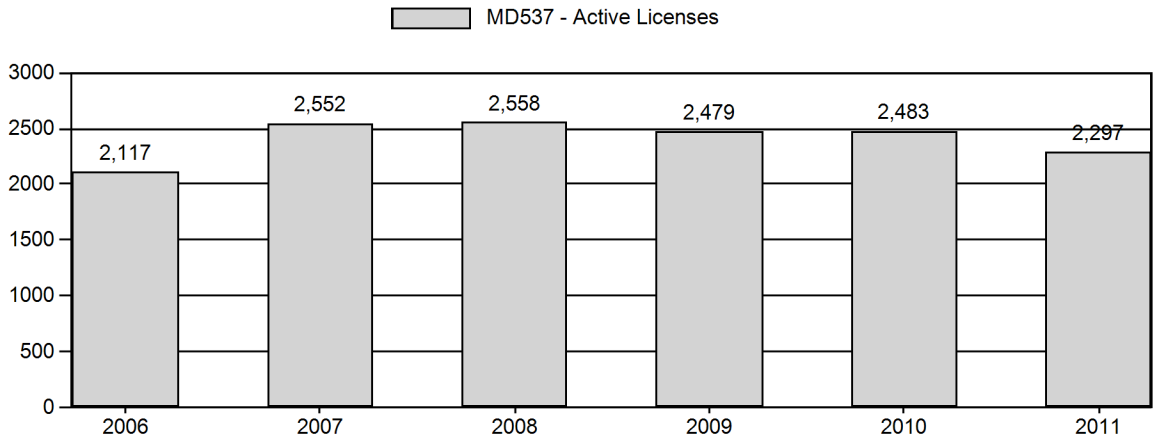
Number of Hunters



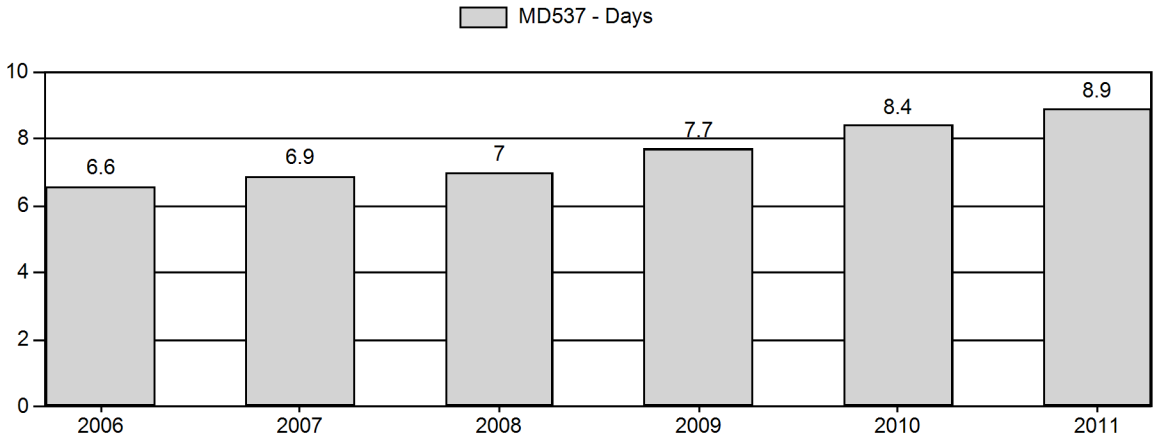
Harvest Success



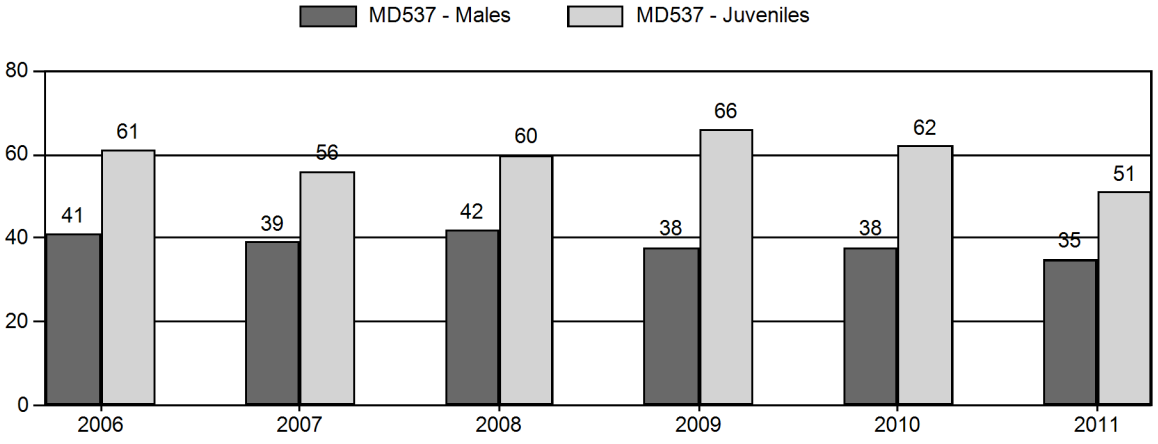
Active Licenses



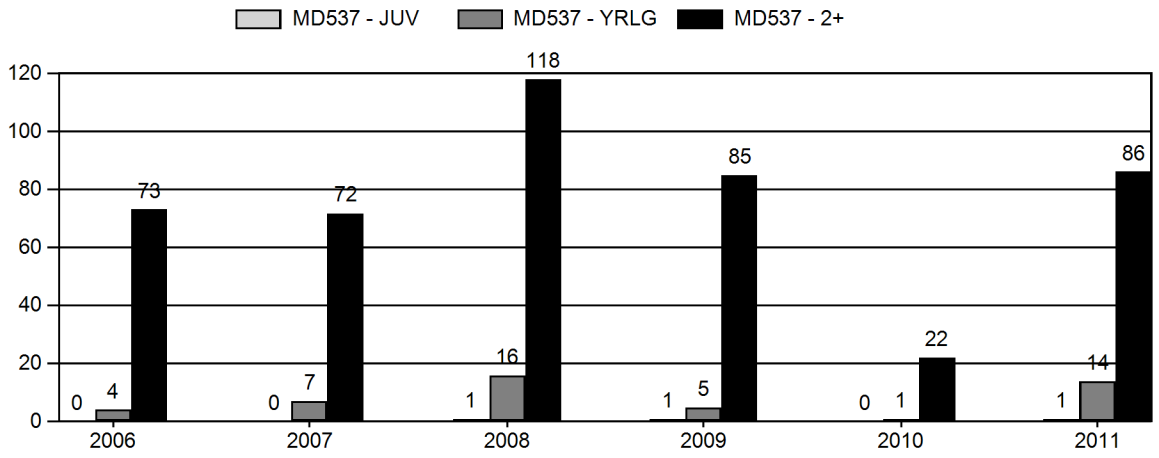
Days per Animal Harvested



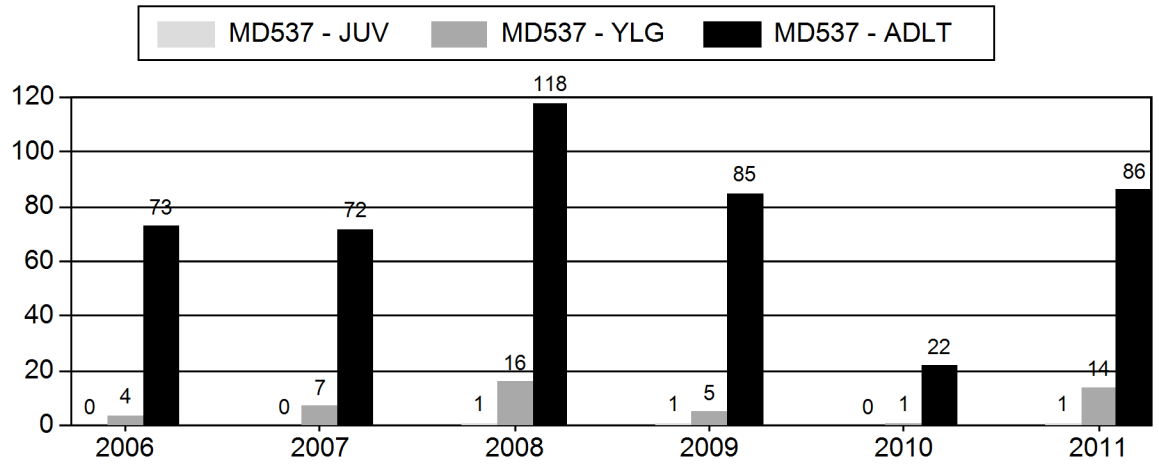
Postseason Animals per 100 Females



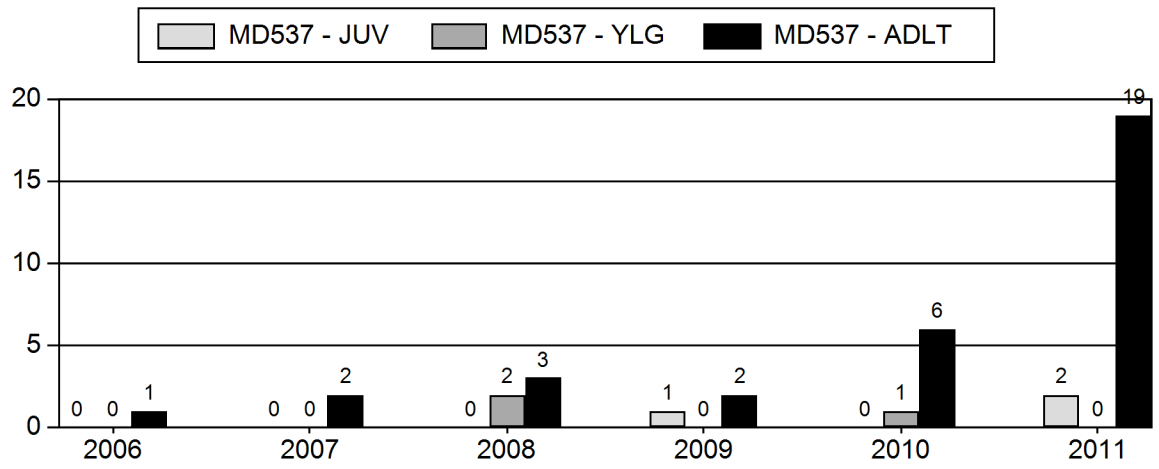
Age Structure of Field Checked Males



Age Structure Data (Field and Laboratory) - Male



Age Structure Data (Field and Laboratory) - Female



LARAMIE MOUNTAINS MULE DEER
(MD537)
Hunt Areas 59,60,62-64,73
2009-2011 Biological Years (6/1/2009-5/31/2012)

INTRODUCTION

The post-season population estimate for the Laramie Mountains Mule Deer Herd Unit is 22,000 mule deer, 24% below the objective of 29,000. POP II was used to simulate the herd's performance by anchoring to fawn ratios and yearling male harvest percentages while simulating yearling buck, 2+ bucks, mature bucks ratios at levels higher than observed. Simulations appear to track observed ratios adequately providing confidence to the population estimate.

Buck ratios have slowly decreased the past five years, causing a management change to the general license deer season by decreasing the season length from 16 days to 10 days for the 2012 season. The five-year average is 39 buck:100 does and the 2011 post-season ratio was 35 bucks:100 does. This is still well above the recreational management guidelines of 20-29 bucks:100 does, but has caused concern with managers on buck quantity and quality available to the public.

Fawn ratios decreased in 2011 (51 fawns:100 does) compared to the five-year average of 61 fawns:100 does. Recruitment is well below the adequate level needed to increase the population (Unsworth et al. 1999).

Chronic Wasting Disease (CWD) continues to impact this population. In 2012 104 mule deer were tested with a prevalence rate of 28%, which is significantly higher than the long-term average (1997-2010) of 19%. The long-term average of Hunt Area 65 (31%) is slightly lower, but well below the 2011 prevalence rate of 56%. Currently there is a mule deer survivability study on going in Hunt Area 65 to determine the impact of CWD on the population. Results should be available within the next two biological years.

This herd is managed under recreational criteria. The 2011 season is designed to take advantage of a surplus number of bucks and focus effort on the female segment in isolated areas where damage is a concern. Efforts to increase the population of this herd to the management objective are confounded by the ongoing effects of CWD and a decadent shrub community. At this time there is no way to mitigate the impact of CWD but the occurrence of large-scale wildfires should eventually improve the health and nutritional status of the shrub community.

For extensive background information on the Laramie Mountains Mule Deer Herd, the reader is referred to the 2002 Job Completion Report.

WEATHER

A state-wide weather report from Biological Services was not available for this reporting period. However, a memo was sent to Wildlife Division from the Laramie Region summarizing weather data in southeast Wyoming from October 2011 to April 2012 (Appendix A). Basically this past winter was very mild and most likely resulted in little winter mule deer mortality. Since April 2012 this area has experience little to no precipitation resulting in a drastic decrease in herbaceous production. Most recently the largest impact to the environment from this drought is four major wildfires totaling over 110,000 acres. Three of the wild fires have occurred within the Laramie Mountains: 1) Cow Camp Fire- 8,500 acres, 2) Russell Camp Fire- 5,400 acres, 3) Arapahoe Fire- 97,000 acres. These fires burned a majority of mule deer crucial winter range. Long-term affects remain to be seen, but overall should improve ecosystem health. Short-term effects include noxious weed outbreaks, loss of mixed mountain shrub communities, and loss of thermal, fawning and security cover. Initial reports indicate there was direct mortality on mule deer, but to what extent is unknown. Managers plan to work with state, federal and private land managers to provide technical assistance for habitat rehabilitation.

Drought conditions have also affected perennial streams. The North Platte River at North Gate is flowing at 150 cfs, the 98-year average is 800 cfs. The Laramie River at Bosler, WY is flowing at 5 cfs, the 98-year average is 200 cfs. The North Laramie River, Horseshoe Creek and Cottonwood Creek are dry as they cross Interstate Highway 25. Landowners have started to de-stock cattle herds because of lack of grass throughout southeast Wyoming.

Weather conditions from 2010-2011 were the complete opposite when compared to 2012. Winters were more severe and spring/summer precipitation was well above average. Major flooding events occurred during 2010-2011, reservoirs were filled and grass/forb/shrub production increased compared to long term averages.

Juvenile mortality during the 2010 and 2011 winters appeared normal to excessive based on ratios throughout southeast Wyoming Mule Deer Herd Units compared to the five-year average (Table 1). During the mild winter of 2011/12 juvenile mortality was likely negligible. Neonate mortality for 2012 appears to be excessive based on few fawns observed due to excessive drought and fire conditions. It is expected that female mule deer will go into the winter of 2012/13 in poor condition resulting in below average birth rates for the 2013 biological year and herd units will experience a decrease in population.

Table 1. Southeast Wyoming Mule Deer Fawn Ratio comparisions.

Mule Deer Herd Unit	2011 Fawn Ratios:100 Does	Five-Year Average Fawn Ratio
Laramie Mountains Herd Unit	50 Fawns: 100 Does	57 Fawns: 100 Does
Shirley Mountains Herd Unit	58 Fawns: 100 Does	61 Fawns: 100 Does
Sheep Mountain Herd Unit	55 Fawns: 100 Does	60 Fawns: 100 Does

HABITAT CONDITIONS/ASSESSMENT

The reader is referred to Appendix B for a full habitat report containing vegetation sampling within the Laramie Mountains Mule Deer Herd Unit. Based on samples taken within the Richeau Hills in 2001 and 2003, shrub conditions continue to fluctuate with spring/summer precipitation events, while at the same time nutrient levels remain below adequate levels in shrub stands that have not been treated either mechanically or with fire Protein content averaged around 8% in the fall.

Typically females need a diet with 13-14 % protein to produce healthy offspring. Female mule deer going into winter relying on a diet with low energy and protein were less likely to provide the required nutrients for their fawns and experienced higher mortality rates the first 48 hours following parturition (deVos et al. 2003).
The 2012 fire season will result in the removal of thousands of acres of climax vegetation. This will provide early successional communities favored by mule deer in forest habitats by increasing the amount and quality of forage (deVos et al. 2003). Fire typically improves protein content in young forbs, grasses and shrubs and greatly enhances in vitro digestible organic matter in winter diets (deVos et al. 2003).

POPULATION

Table 2. Postseason Classification Data, MD537, 2006-2011.

2006 - 2011 Postseason Classification Summary

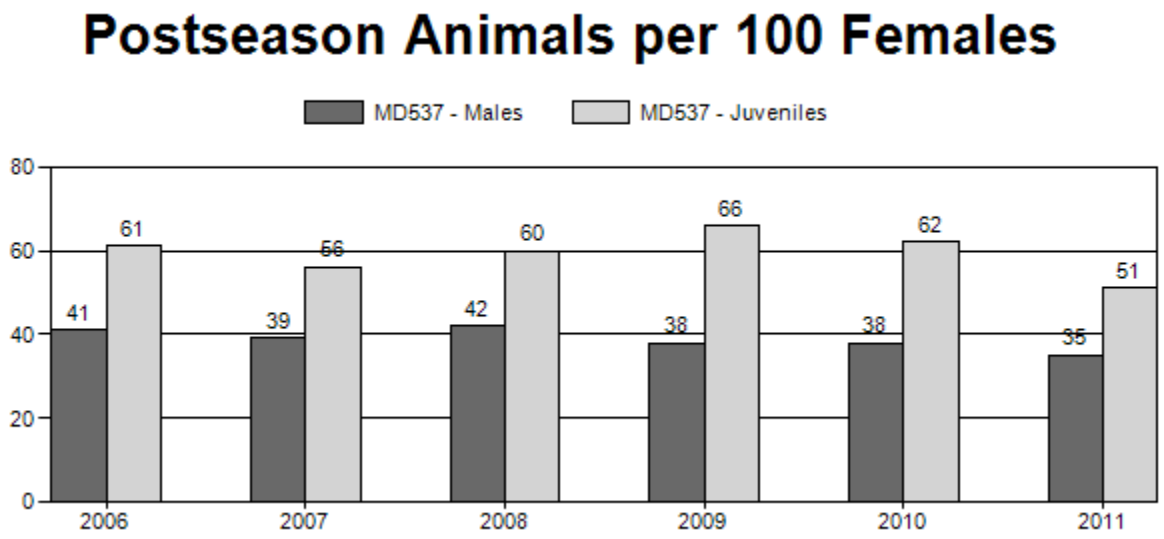
for Mule Deer Herd MD537 - LARAMIE MOUNTAINS

		MALES				FEMALES		JUVENILES				Males to 100 Females				Young to		
Year	Post Pop	Ylg	Adult	Total	%	Total	%	Total	%	Tot Cls	Cls Obj	Ylng	Adult	Total	Conf Int	100 Fem	Conf Int	100 Adult
2006	28,000	170	359	529	20%	1,278	49%	781	30%	2,588	1,375	13	28	41	± 0	61	± 0	43
2007	25,000	96	356	452	20%	1,166	51%	657	29%	2,275	1,214	8	31	39	± 0	56	± 0	41
2008	28,000	101	335	436	21%	1,034	49%	623	30%	2,093	1,180	10	32	42	± 3	60	± 4	42
2009	27,000	155	395	550	19%	1,433	49%	952	32%	2,935	1,245	11	28	38	± 0	66	± 0	48
2010	22,500	205	425	630	19%	1,639	50%	1,015	31%	3,284	1,202	13	26	38	± 0	62	± 0	45
2011	22,750	102	296	398	19%	1,122	54%	570	27%	2,090	1,263	9	26	35	± 3	51	± 3	38

Sample size for the postseason classification data was met during all six report years (Table 2). Classification data was obtained susing a combination of aerial surveys (Bell Jet Ranger~ 12 hours survey time) and approximately 40-50 hours ground time. Buck ratios were well above the recreational management range of 20-29 bucks:100 does. However, they have declined over the last six years, prompting concern among managers over deer quality and quantity.

For the past five years, fawn ratios have remained below the level identified by Unsworth et al. (1999) that are needed to increase the population and this ratio decreased further in 2011. The assumption was made that increased precipitation levels during the springs of 2010 and 2011 would translate to increased fawn production. However, wet springs coupled with severe winter conditions and old, decadent shrubs which supply below adequate nutrient requirements for lactating does resulted in poor fawn recruitment.

Graph 1. MD537 Post-season Classification Data, 2006-2011



Fawn and buck ratios trended downward from 2006-2011 (Graph 1). Buck ratios most likely decreased due to poor winter range shrub condition coupled with the severe winters of 2009/10 and 2010/11.

The population simulation using POPII is anchored to observed juvenile ratios and yearling harvest percentages while simulating yearling buck, 2+ bucks, mature bucks ratios at levels higher than observed. . Simulations appear to track observed ratios adequately providing reasonable population estimation.

The WGFD will change the way ungulate populations are estimated starting biological year 2012. POP II will be replaced by Spreadsheet Models that were developed by G. White and B. Lubow, of the Colorado Division of Wildlife. Based on input from T. Morrison of the Wyoming Cooperative Fish and Wildlife Research Unit, the Spreadsheet Model provides a more statistically rigorous way to estimate population sizes and to compare different models (Morrison, 2012).

HUNTING SEASON

LARAMIE MOUNTAINS MULE DEER HERD (MD537)
HUNT AREAS 59, 60, 62, 63, 64, 73
2011 HUNTING SEASONS

HUNT AREA	TYPE	OPENS	CLOSES	LIMITATIONS
*59,*62,*63 *CWD Area	GEN	OCT. 15	OCT. 31	General license; antlered deer, except the Wyoming Game and Fish Commission's Tom Thorne/Beth Williams Wildlife Research Center at Sybille shall be closed
*59 *CWD Area	6	OCT. 15	NOV. 30	L.Q.; ~~25~~ 10 licenses doe or fawn valid south of Laramie County Road 237.
*62,*63, *64 *CWD Area	6	OCT. 15	OCT. 31	L.Q.; 200 licenses doe or fawn, valid on private land
		NOV. 1	DEC. 15	Unused Area 62, 63, 64 Type 6 licenses valid for doe or fawn white-tailed deer
*60 *CWD Area	1	OCT. 20	NOV. 5	L.Q.; 100 licenses antlered deer on national forest, any deer off national forest; All lands within Curt Gowdy State Park, archery only
	2	OCT. 20	NOV. 5	L.Q.; 150 licenses any deer off national forest; all lands within Curt Gowdy State Park, archery only
		NOV. 6	NOV. 30	Unused Area 60 Type 1 and Type 2 licenses valid for doe or fawn white-tailed deer off national forest; all lands within Curt Gowdy State Park, archery only
	6	OCT. 20	NOV. 5	L.Q.; 50 licenses doe or fawn valid in that portion of Area 60 in Laramie County; all lands within Curt Gowdy State Park, archery only
		NOV. 6	NOV. 30	Unused Area 60 Type 6 licenses valid for doe or fawn white-tailed deer; all lands within Curt Gowdy State Park, archery only
*64 *CWD Area	GEN	OCT. 15	OCT. 31	General license; antlered deer, except the Wyoming Game and Fish Commission's Tom Thorne/Beth Williams Wildlife Habitat Management Area and the Laramie Peak Wildlife Habitat Management Area north of the Tunnel Road (Albany County Rd 727), shall be closed
	2	OCT. 15	OCT. 31	L.Q.; 150 licenses antlered deer
*73 *CWD Area	GEN	OCT. 15	OCT. 31	General license; antlered deer
ARCHERY				
59-64,73		SEPT. 1	SEPT. 30	Refer to Section 3 of this Chapter

The 2011 season is designed to take advantage of a surplus number of bucks and focus effort on the females segment in isolated areas. There were a total of 260 type 6 licenses available, which was 11% of total license sales. The population is currently

24% below the objective so the focus is to try and increase the population by implementing a restrictive doe season.

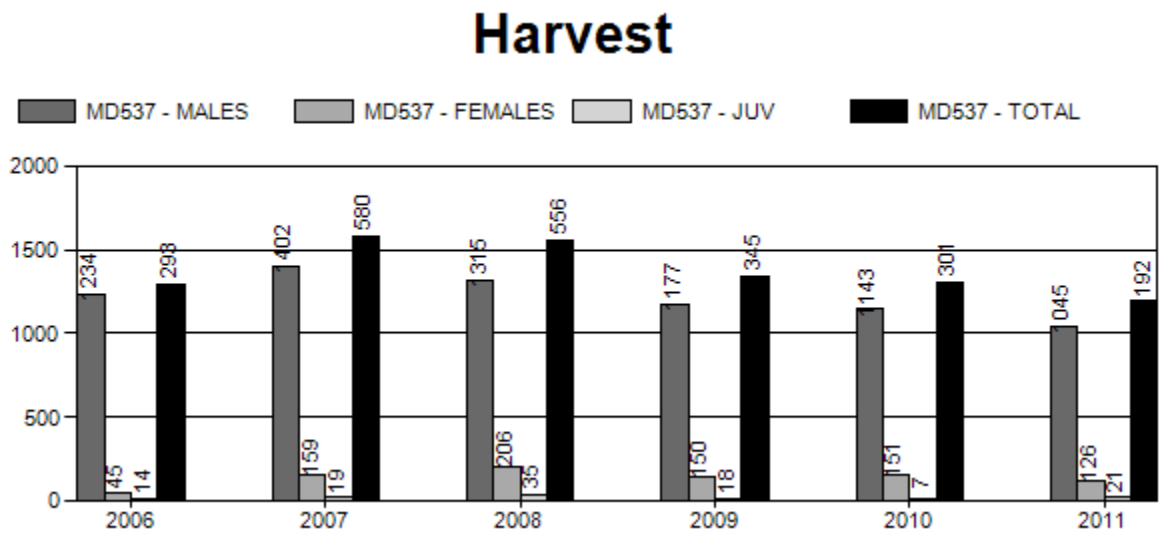
HARVEST

Table 3. MD537 Harvest Data, 2011.

Area	Type	Active Lic/Htrs	Buck	Doe	Fawn	Total	Success	Days/Harvest	Licenses Sold
2011									
59 LITTLE BEAR									
	General	129	54	0	0	54	41.90%	7.8	
	Type 6	7	0	4	0	4	57.10%	4	10
Pooled Total		136	54	4	0	58	42.60%	7.6	
Pooled Resident		101	39	0	0	39	38.60%	8.1	
Pooled Nonresident		35	15	4	0	19	54.30%	6.4	
60 POLE MOUNTAIN									
	Type 1	86	42	2	0	44	51.20%	13	103
	Type 2	121	62	28	4	94	77.70%	5.1	153
	Type 6	23	0	16	2	18	78.30%	6.2	52
Pooled Total		214	104	46	6	156	72.90%	7.4	
Pooled Resident		168	67	46	6	119	70.80%	8.1	
Pooled Nonresident		46	37	0	0	37	80.40%	5.4	
62 IRON MOUNTAIN									
	General	114	59	0	0	59	51.80%	7.5	
	Type 6	13	0	3	3	6	46.20%	15.7	200
Pooled Total		124	59	3	3	65	52.40%	8.2	
Pooled Resident		75	33	0	0	33	44%	8.9	
Pooled Nonresident		49	26	3	3	32	65.30%	7.5	
63 RICHEAU									
	General	245	159	4	0	163	66.50%	6	
	Type 6	19	0	14	3	17	89.50%	1.6	0
Pooled Total		258	159	18	3	180	69.80%	5.6	
Pooled Resident		164	91	15	0	106	64.60%	5.7	
Pooled Nonresident		94	68	3	3	74	78.70%	5.4	
64 LARAMIE PEAK									
	General	1208	552	15	0	567	46.90%	9.7	

Type 2	129	61	0	0	61	47.30%	13.6	153
Type 6	75	0	40	9	49	65.30%	4.7	0
Pooled Total	1377	613	55	9	677	49.20%	9.7	
Pooled Resident	998	430	34	6	470	47.10%	10.2	
Pooled Nonresident	379	183	21	3	207	54.60%	8.7	
73 BOSWELL								
General	201	56	0	0	56	27.90%	15.9	
Pooled Total	201	56	0	0	56	27.90%	15.9	
Pooled Resident	135	34	0	0	34	25.20%	18	
Pooled Nonresident	66	22	0	0	22	33.30%	12.8	
2011 Hunt Area Total	2310	1045	126	21	1192	51.60%	8.9	671
2011 Herd Total	2225	1045	126	21	1192	53.60%	8.9	671
*Active Licenses								

Graph 2. MD537 Harvest Data, 2006-2011

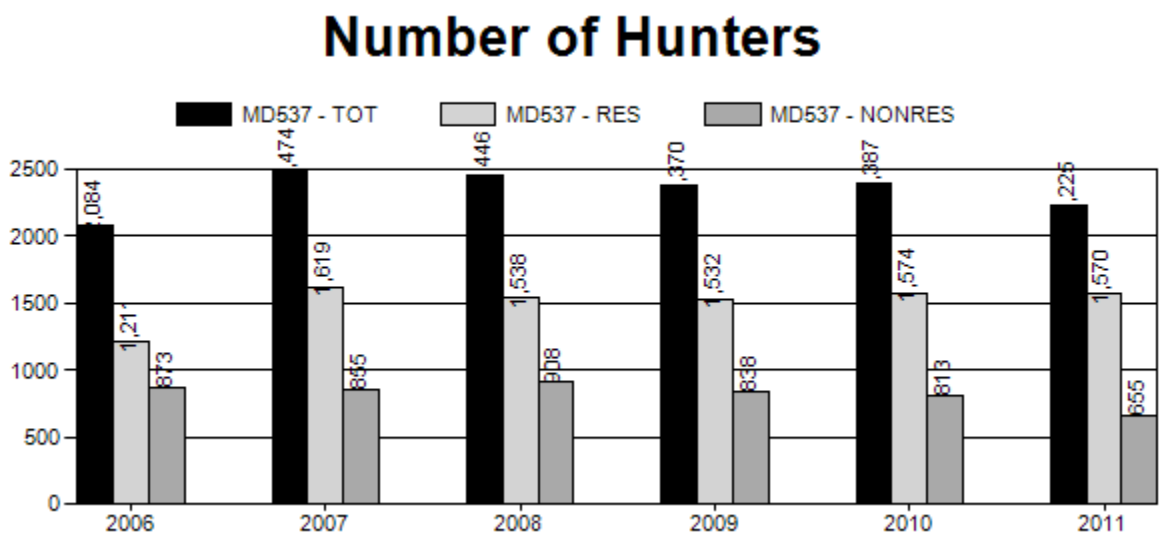


In 2011 mule deer harvest decreased compared to both 2010 data and the five-year average of 1,415 (Graph 2). Doe and fawn harvest made up a very small percentage of the overall harvest (~10%) and was determined by the number of Type 6 licenses issued. Buck harvest in 2011 followed total deer harvest trends and decrease compared to both 2010 results and the five-year average of 1,254 (Graph 2. The same season structure has been in place since 2007 (in 2006 there were more male deer harvested than the 16 day season in 2011) so season length was not an issue. Given 2011 post-season buck ratios decreased compared to the five-year average, fewer male deer harvested seems plausible. It cannot be determined if this decreased buck harvest

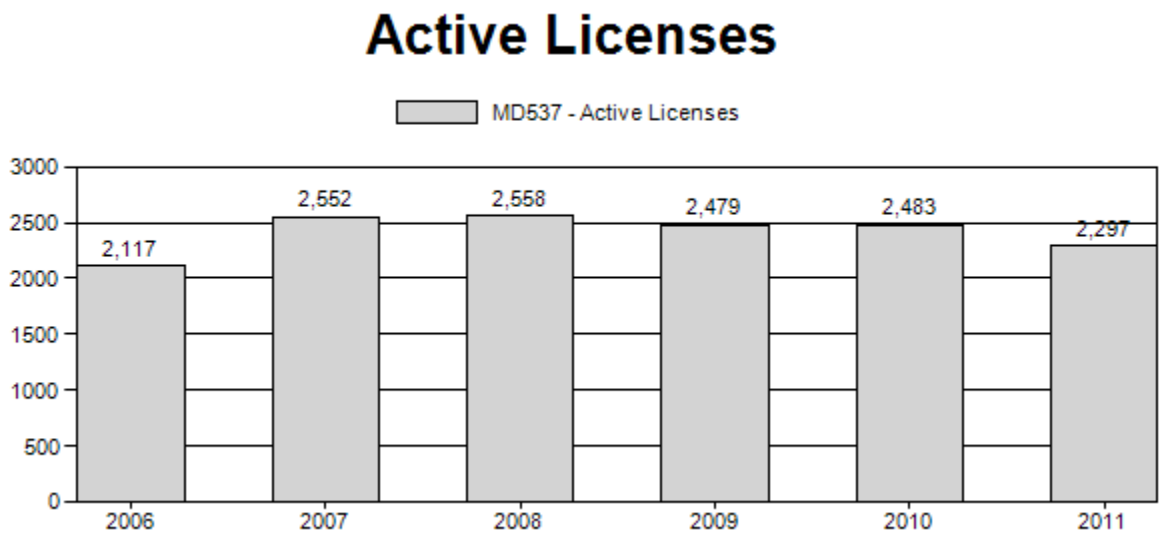
is the result of a decline in the number of males or is a result of abnormally warm temperatures during the season.

In 2011 Hunt Area 63 had the highest success and Hunt Area 64 had the highest harvest (58% of the herd unit), while Hunt Area 73 had the lowest success and Hunt Area 59 had the lowest harvest (Table 3). Hunt Area 73 has very low deer densities, (typically only 5-10% of the post-season classification sample size) and Hunt Area 59 is predominately private land with low deer densities in the eastern half.

Graph 3. MD537 Active License Hunters, 2006-2011.

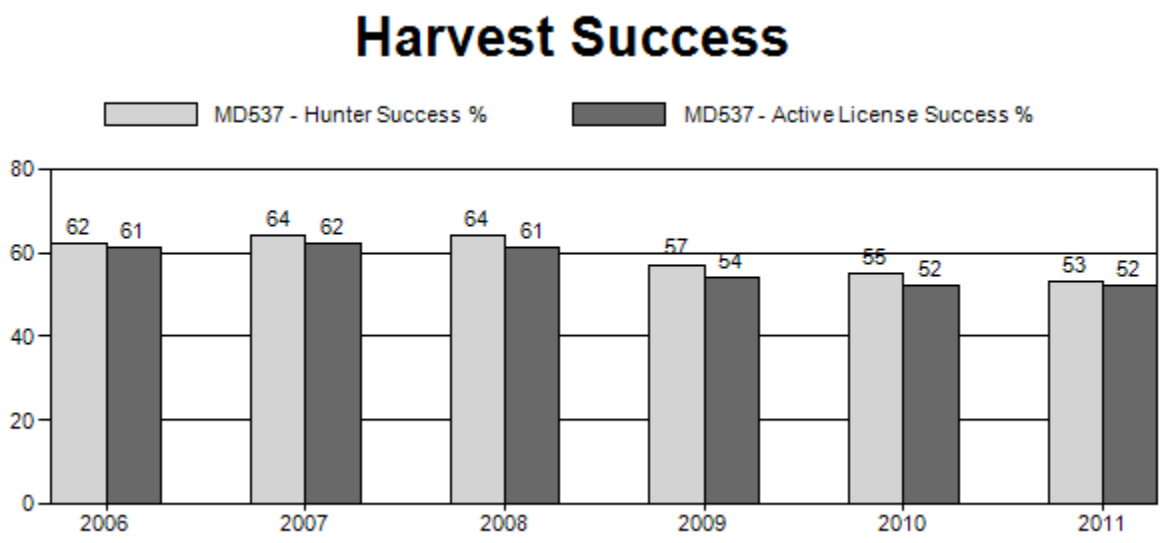


Graph 4. MD537 Hunter Numbers, 2006-2011.

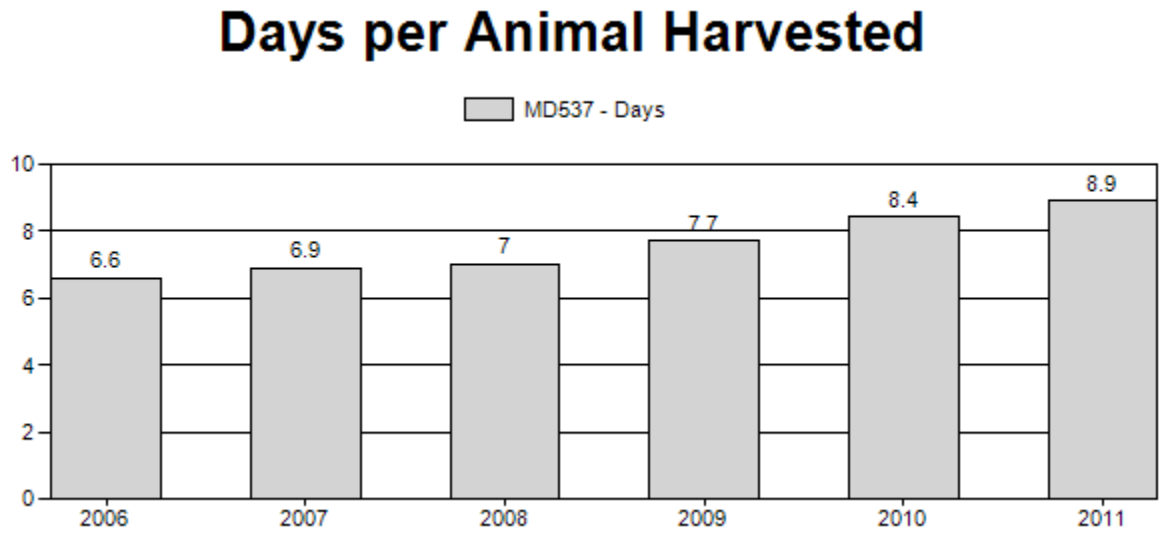


The number of active licenses is slightly higher than hunter numbers due to the small numbers of Type 6 licenses available in conjunction with a general deer license (Graphs 3 and 4). Deer hunters could only obtain a total of two Type 6 licenses in conjunction with a general deer license after the initial draw. Hunter and active license numbers have slowly decreased in the last five years (Graphs 3 and 4). This decrease is most likely a result of loss of access, decreased buck ratios, poor weather conditions comprised of hot and dry weather.

Graph 5. MD537 Success Data, 2006-2011.



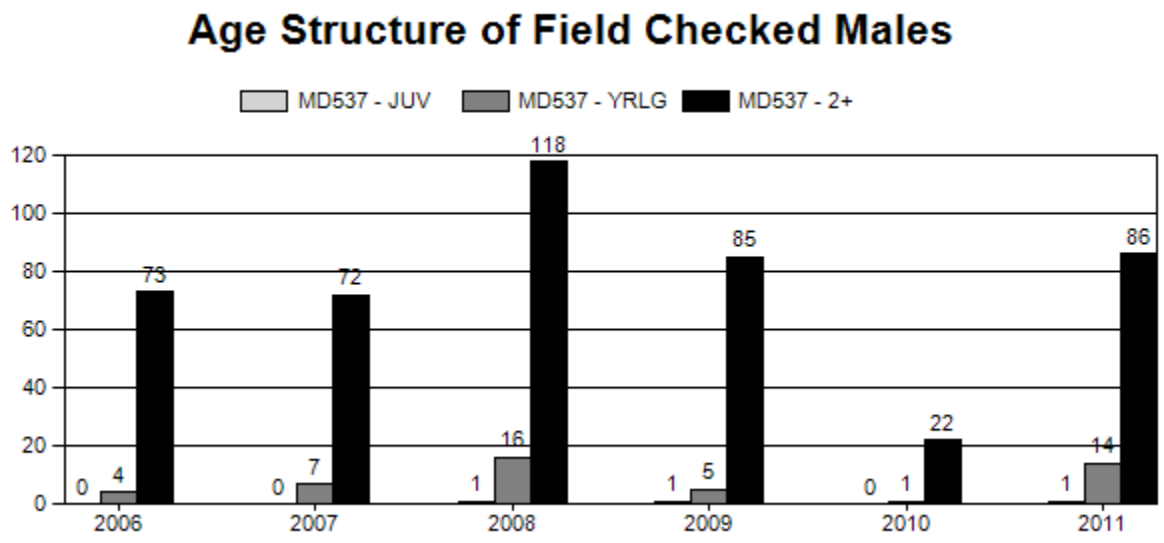
Graph 6. MD537 Days per Animal Harvested Data, 2006-2011.



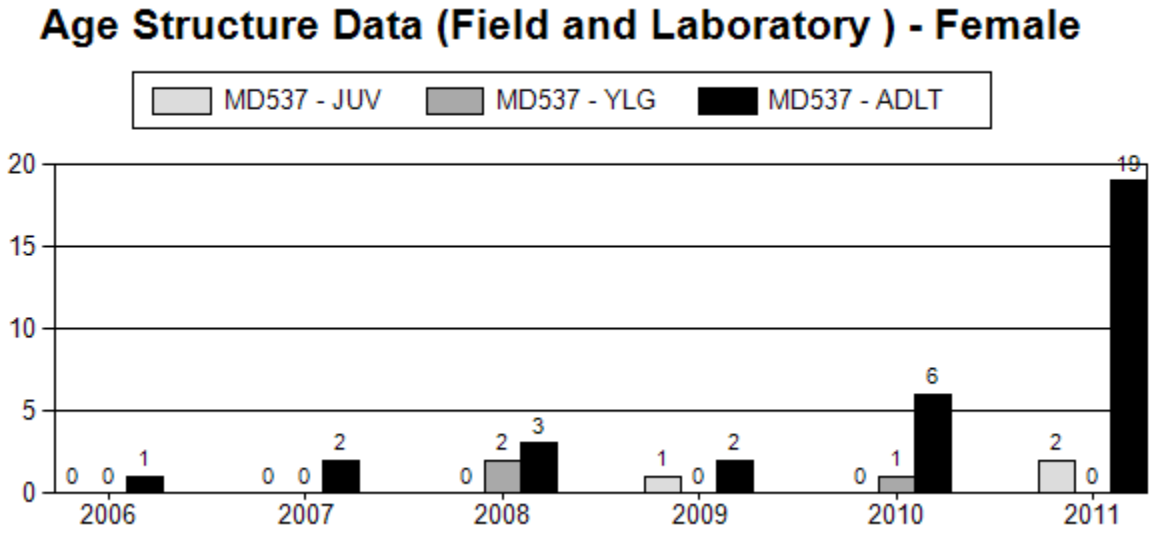
Harvest data clearly indicates that hunters have been having a more difficult time finding mule deer. Success has decreased (Graph 5) while effort has an increased (Graph 6).

These statistics support population simulations along with decreases in observed buck and fawn ratios. There are numerous parameters affecting mule deer within the Laramie Mountains. Drought and poor habitat conditions have resulted in poor fawn survival, which correlates to poor buck recruitment. Chronic Wasting Disease has increased from a prevalence rate of 14% in 1997 to 28% in 2011. However, the actual impact of this increase in CWD prevalence is unknown.

Graph 7. MD537 Hunter Field Checked Males, 2006-2011



Graph 8. MD537 Hunter Field Checked Females, 2006-2011.



The majority of field checked males are greater than two years old, 86% in 2011 and five-year average slightly lower at 8% (Graph 7). Compared to classification data this is

significantly lower than 2011 (32%) and the five-year average of 27% (Table 2). This inconsistency is most likely due to the fact that the majority of hunting occurs on private land where hunters are more selective for older age deer. Check stations are set up on main thoroughfares from public lands. However, many of the deer that are checked also come from private land, as well as outfitter camps. There are very few females checked in the field (Graph 8) due to conservative seasons with very few Type 6 licenses available (n=260, 11% of license sales).

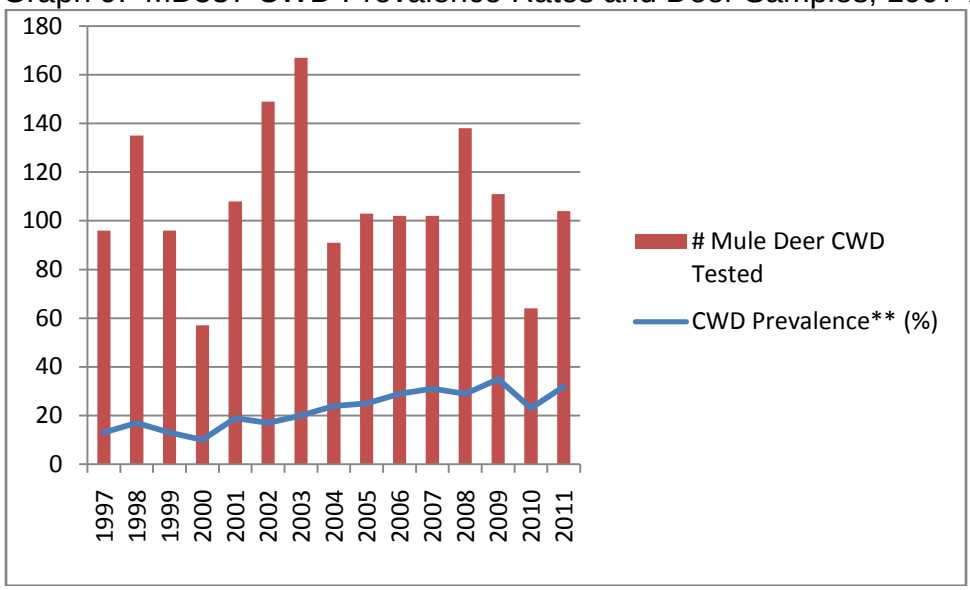
OTHER MANAGEMENT ISSUES

Chronic Wasting Disease

An intensive effort began during the 1997 hunting season to determine the prevalence of chronic wasting disease (CWD), a transmissible spongeform encephalopathy that is fatal to members of the deer family (Williams, 2005). Efforts were increased in 2003 by established check stations in Wheatland, Cheyenne, Tunnel Road and Medicine Bow for the first five days of the season collecting lymph nodes to be tested for CWD, and harvest data. Subsequent check stations were set up during the 2004-11 seasons. Efforts were reduced in ???? by eliminating the Cheyenne check station and reducing staffing on the remaining check stations to two days.

The prevalence rate of CWD has increased since 2000. This increase may be a reflection of increased testing effort rather than a substantial increase in actual prevalence. The cumulative prevalence rate for this Herd Unit is around 19% (Graph 9). All six hunt areas now have at least one documented CWD positive deer. Area 64 continues to have the highest number of deer tested and also the highest CWD prevalence in the herd unit (28% in 2011). The number of animals tested dropped after 2003 due to the focus of surveillance efforts shifting to other areas of the state. With the exception of 2010 sample submission has remained at around 100 animals. Testing decreased in 2010 due to a lack a biologist presence.

Graph 9. MD537 CWD Prevalence Rates and Deer Samples, 1997-2011



There are two research projects taking place at this time to study the effects of CWD on mule deer population performance. One study is occurring on the front range of Colorado, the other is taking place in the South Converse Mule Deer Herd Unit. The overall objective of the South Converse Mule Deer Herd Unit five year study is to determine if and how chronic wasting disease (CWD) impacts mule deer at the population level. CWD-positive and CWD-negative mule deer (*Odocoileus hemionus*) will be monitored in a geographic area of Wyoming with very high (>40%) CWD prevalence to determine the following parameters among the two sub-populations: a) disease status (at capture, annually, and/or at death); b) survival rate; c) fecundity/recruitment; d) finite rate of population growth; e) condition indices; f) home range size and habitat use; g) dispersal rates; and h) genetic susceptibility to CWD.

HABITAT

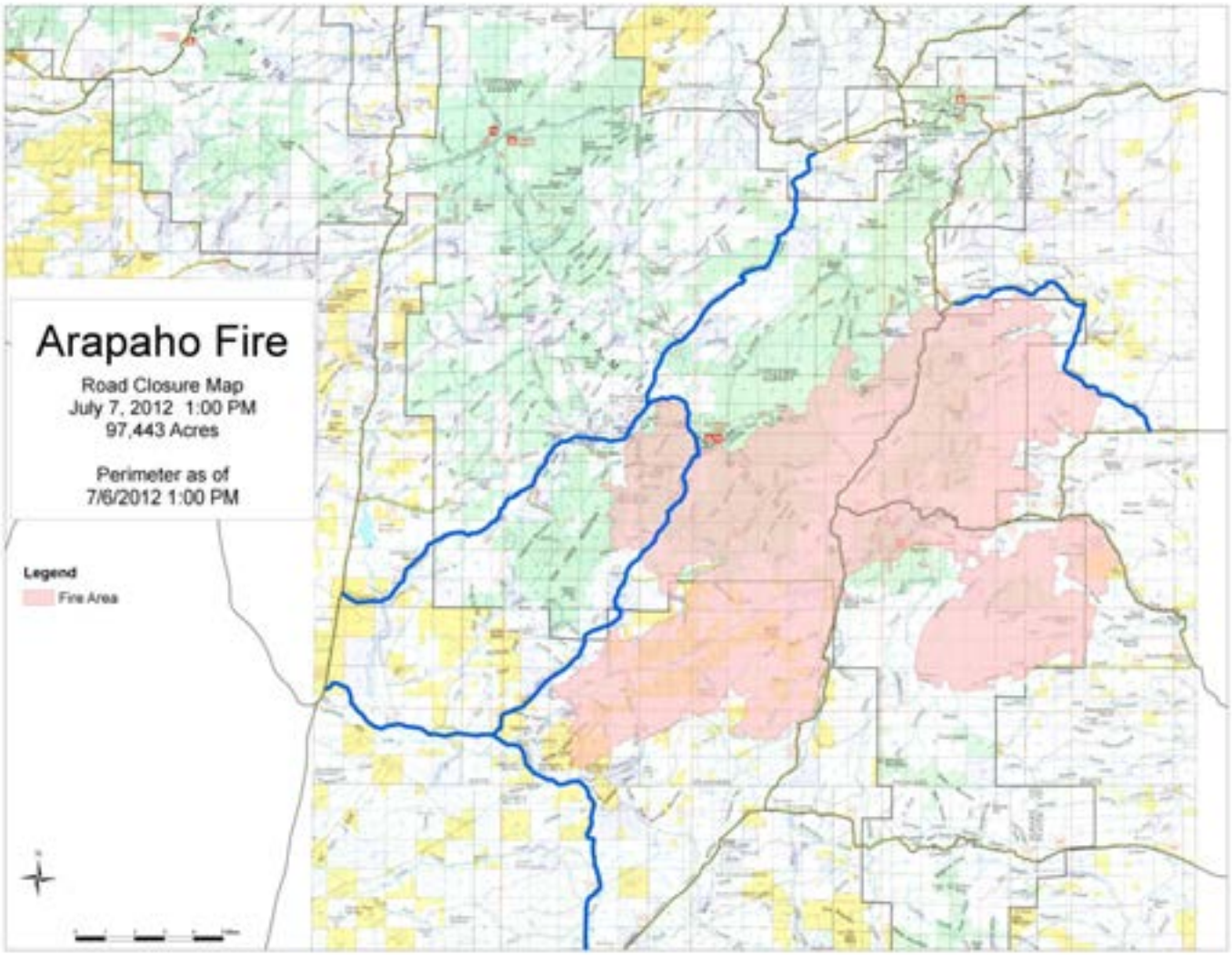
There is currently one habitat project within the Laramie Mountains Mule Deer Herd Unit. This is the Iron Mountain Prescribed Burn Project (Attachment A). Phase 1 has been completed and phase 2 is scheduled for fall of 2012. Total acres burned in the Laramie Mountains since 1997 are approximately 7,500.

In addition there have been approximately 130,000 acres burned by wildfires since 2011. Approximately 12,000 acres burned in 2011 in Hunt Area 64. Areas that burned include Poe Mountain and Squaw Mountain. Tentatively a portion of those areas are scheduled for cheatgrass (*Bromus tectorum*) control aerial treatment fall of 2012.

The wildfires during 2012 have so far all burned in Hunt Area 64, which includes: 1) Arapahoe Fire~100,000 acres (Figure 1), 2) Cow Camp Fire~8,500 acres, 3) Russell Camp Fire~5,400 acres. A majority of mule deer occupied habitat burned in these fires. Mule deer mortality was also noted by fire fighters but to what extent is unknown.

Long-term effects will be positive by setting climax plant communities back to early seral stages. Nutrient and digestibility will greatly be enhanced. Short-term effects will be loss of thermal/security/fawning cover and winter browse. Increased noxious weed outbreaks will most likely occur in areas that burned intensely. Vegetation rehabilitation plans will be cooperatively designed with federal, state and private land managers.

Figure 1. Arapahoe Fire, July, 2012



RECOMMENDATIONS

1. Continue to monitor CWD for the 2012 season. Apply any data resulting from the Colorado and South Converse Mule Deer Studies.

2. Continue to use prescribed fire as a tool to set back shrub communities to early successional plant communities to improve overall habitat conditions. Work with federal, state and private land managers to rehabilitate areas burned from 2011 and 2012 wild fires.

3. Increase data collection throughout the herd unit in order to use it as a benchmark for other similar herd units where there is little management ability and lacking data.

4. Work with non-government organizations and private landowners to establish conservation easements on private land to preclude development and conserve wildlife habitat.

Literature Cited:

deVos, Jr. J. C, M. R. Conover, and N.E. Headrick. 2003. Mule Deer Conservation: Issues and Management Strategies. Berryman Institute Press, Utah State University, Logan

Morrison, T. 2012. User Guide: Spreadsheet Model for Ungulate Population Data, Wyoming Cooperative Fish and Wildlife Research Unit, 4.

Unsworth, JW, Pac DF, White GC, and Bartmann BC: Mule deer survival in Colorado, Montana, and Idaho. J. Wildl. Manage. 63(1):315-326, 1999

Williams ES: Review Article, Chronic Wasting Disease. Vet Pathology 42:530-549, 2005

Iron Mountain Prescribed Burn

Project Description

The project is a prescribed fire treatment in the central portion of the Iron Mountain allotment. The burn is planned to be apply in two phases, Phase 1 treatment contains approximately 2,200 acres and Phase 2 approximately 1,500 acres (Table 1). The first phase will be conducted in the spring or fall of 2009 and/or in later years whenever conditions, funding, and manpower allow implementation. Once Phase 1 is completed and has been determined to meet the burn objectives then Phase 2 will be implemented to the north. Ignitions will be accomplished primarily by use of a vehicle-mounted terra-torch from existing roads and two-tracks and by hand carried drip-torches in areas where more close control of lighting operations is required.

Phase 1- Completed

Treat (blacken) 1,320 to 2,200 acres (or 60 to 100%) of the dense mountain mahogany and bitter brush communities with 40% or higher canopy cover. This Phase contains a much higher percentage of mountain mahogany to bitterbrush as compared to the Phase 2 site. The prescribed burn perimeter is bordered by two-track or improved roads on all sides. The north border follows a pasture fence and two-track road.

Phase 2- Scheduled for Fall of 2012

Treat (blacken) 900 to 1,500 acres (or 60 to 100%) of the dense mountain mahogany and bitter brush communities with 40% or higher canopy cover. As a result of the increase amount of bitterbrush in this phase, resource objectives would include minimal soil heating. This would improve bitterbrush resprouting post burning. The south and east sides of this phase are bordered by two tracts and/or improved roads on the west side. The east side is also bounded by Spring Creek. The north side is bordered by lighter fuels but does not have a road as a boundary.

Table 1 below lists the land status for the project area.

Table 2	BLM acres	Private Acres	Totals
Total Burn Acres	1,129	2,473	**3,602**
Phase1	676	1,451	2127
Phase2	453	1,022	1475
% of total project	31%	69%	
% of Phase 1	32%	68%	
% of Phase 2	31%	69%	

Goals

The proposed action would treat vegetation by prescribed burning to achieve a more natural mixture of grasses and shrubs, as well as stratifying successional stages of upland shrub communities measured by overall shrub composition, density, aerial cover, and age class structure.

The primary goals of this project are to: 1) Reduce fuel loading and reintroduce fire into a fire dependant ecosystem 2) increase the quality of true mountain mahogany communities available to mule deer on crucial winter ranges; 3) increase the quantity and quality of herbaceous forages available to mule deer on crucial winter ranges; 4) setback succession in true mountain mahogany communities allowing for recruitment of young plants and creating uneven aged stands across the landscape; 4) improve habitat diversity for other wildlife species (i.e., small game, upland gamebirds, etc.); and 5) improve livestock grazing distribution by increasing the quality, quantity and availability of herbaceous forage 6) increase vigor of mountain mahogany, bitterbrush, and mountain shrubs and to improve the composition of grasses and forbs, leading to an increase in vigor and cover of the entire plant community.

The canopy cover in sites most likely to carry fire varies from 40 to 50% shrub cover, with an increase in cover towards the upper slopes near the rim. Pre-treatment conditions have been documented and post-treatment succession will be monitored through photo-points and transects.

In order to improve area that is used by big game, the burn plan would call for burning in a mosaic pattern leaving areas of unburned mountain mahogany and bitterbrush, and providing for a natural edge effect between treated and untreated polygons.

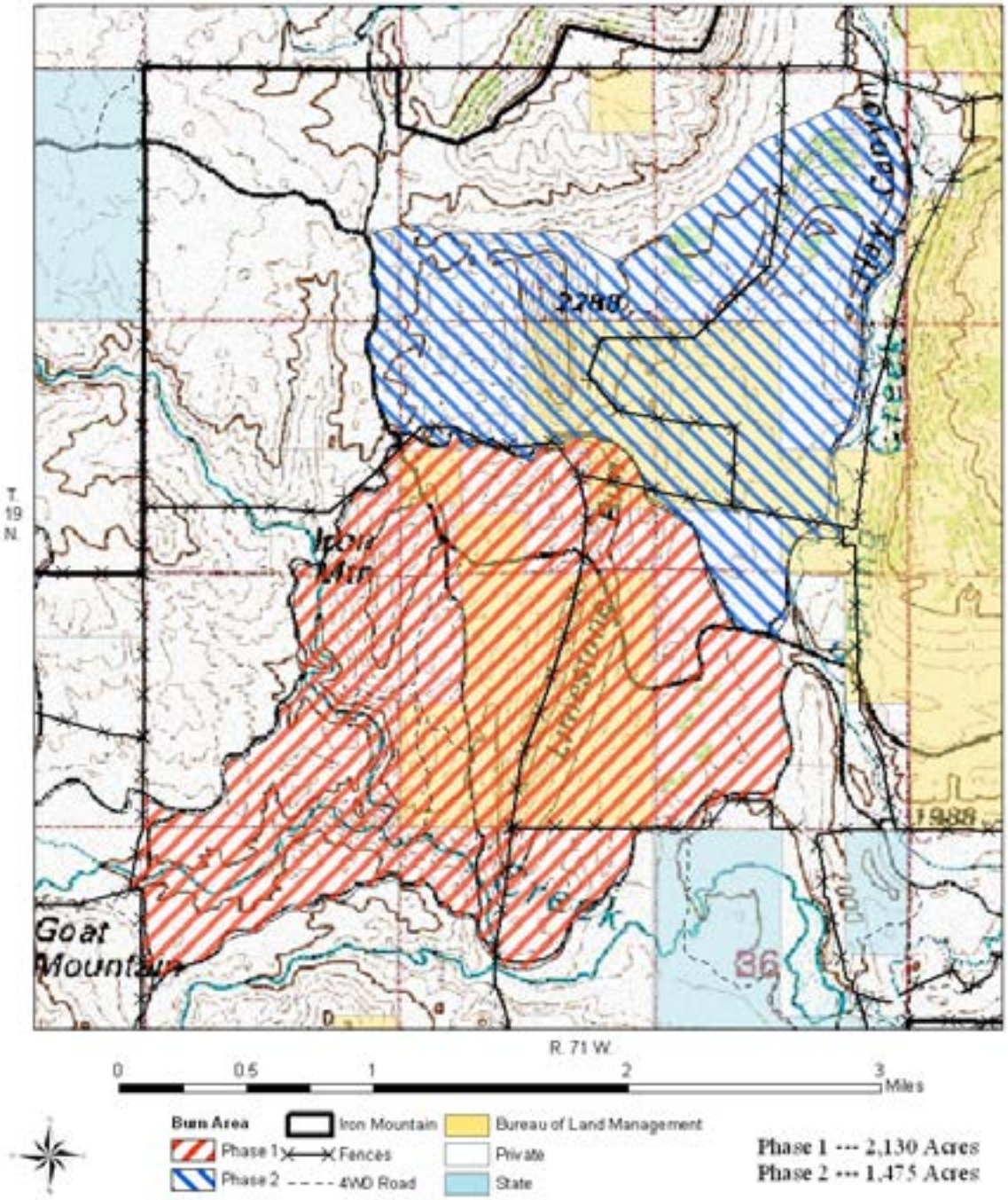
Special management constraints:

1) *Minimize smoke impacts or other safety considerations to the town of Chugwater.*
2) *Mitigate the safety concerns for one aerial powerline that cross through the project.*

Post-treatment livestock grazing will be authorized following current State guidance to provide for two growing seasons deferment. Livestock grazing use would not be authorized prior to August 1 or when seed set of upland grasses has occurred. Livestock grazing use would be authorized in the Phase 1 project area prior to burning, with the stipulation that livestock grazing would be managed to allow for enough of the fine fuel to be in place once livestock are removed. Livestock use will be shifted to other pastures or allotments to ensure rest from grazing post treatment. This practice may be continued for a third year or longer if needed to provide vegetative recovery of burned locations. Livestock use of the treated pasture within the two grazing seasons following treatment would be warranted during dormant season in this instance by the desire to stimulate mountain shrub regeneration, while precluding adverse impacts to herbaceous vegetation and overall watershed health.

The proposed action would be monitored by the range/wildlife and fuels staff of the Rawlins Field Office and the livestock operator. Monitoring includes pre-burn shrub canopy cover and mountain shrub density transects and post-burn vegetation response. Photo-points have been established to help document baseline information and future changes following treatment.

Map 1
Iron Mountain Prescribed Burn



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2012 HUNTING SEASONS

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		NOV. 6	NOV. 30	Unused Area 60 Type 1, Type 2 and Type 6 licenses valid for doe or fawn white-tailed deer; all lands within Curt Gowdy State Park, archery only
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*73 *CWD Area	GEN	OCT. 15	OCT. ~~31~~25	General license; antlered deer
ARCHERY 59-64,73		SEPT. 1	SEPT. 30	Refer to Section 3 of this Chapter

CHANGES FOR 2012

- Eliminate Hunt Area 59 Type 6 Licenses
- Decrease season length in General Hunt Areas 59, 62, 63, 64, 73 and Hunt Area 64 Type 2 from Oct. 15 – Oct. 31 to Oct. 15 - Oct 25
- Decrease Hunt Area 64 Type 2 licenses from 150 to 100
- Have a any white-tailed deer season in Genera Hunt Areas 59, 62, 63, 64
- Decrease the Region J Licenses from 1,800 to 1,000

Hunt Area	License Type	Proposed Change
59,62,63,64,73	General License	Decrease season closing date from Oct. 31 to Oct. 25
59	6	Remove license type
64	2	-50 licenses; decrease season closing date from Oct. 31 to Oct. 25
62-64	6	-50 licenses
Region J	Nonresident General	-800 licenses

2012 Season

- The 2011 post-season population of 22,750 is 22% below objective of 29,000.
- Buck ratios have decreased since 2006.
- Herd Unit Success and effort have mimicked Hunt Area 64, which has 50% of the harvest, hunters and majority of access. These harvest statistics indicate the population has decreased with an increase in effort and a decrease in success over a five-year period.
- Continue to have a limited number of doe/fawn licenses available in areas where there is crop damage
- CWD continues to affect this population (five-year average prevalence rate of 29% and in 2011 it was 32%), but to what existent is unknown. There are two CWD studies going on at this time, one in northern Colorado and the second in hunt area 65 that should shed light on CWD prevalence rates and how the disease is affecting the population.
- Reduce regulation confusion by adding "to general license hunters" at the end of the limitations portion of Hunt Area 64 General license.
- Region J licenses; We propose to reduce the Region J licenses from 1,800 to 1,000. Regions A, B and D are proposed to reduce their quotas. Anticipating hunters that are unsuccessful in the license draw for Regions A, B and D will pick up a Region J license, thus increasing hunting pressure on public lands, where we are proposing to reduce pressure with a earlier season. Licenses sales since 2007are the following: **2007**-1,360, **2008**-1,393, **2009**-1,225, **2010**-1188, **2011**-949.
- The 2012 proposed season is expected to harvest around 955 bucks, 125 does, and 20 fawns for a total of 1,100 mule deer in 2012, with a post-season population estimate around 20,000 mule deer.

Data Set: MD537 2012 ten year graph.GN102/29/2012 11:17 am Page 1

Laramie Mountians Mule Deer Model
Data from 1990 to 2012 Simulation from 2002 to 2012

Age Class	Init Pop. Male	Init Pop. Female	Presn Male	Mort% Female	Postsn Mort% Male	Postsn Mort% Female	Effort Set 1 Male	Effort Set 1 Female	Effort Set 2 Male	Effort Set 2 Female
0	142.0	142.0	50.0	50.0	35.0	35.0	1.00	1.00	1.00	1.00
1	45.0	45.0	2.0	2.0	5.0	5.0	0.35	1.00	1.40	1.00
2	30.0	40.0	2.0	2.0	6.0	5.0	1.00	1.00	1.00	1.00
3	20.0	25.0	2.0	2.0	6.0	5.0	1.00	1.00	1.00	1.00
4	15.0	20.0	2.0	2.0	6.0	5.0	1.00	1.00	1.00	1.00
5	10.0	19.0	2.0	2.0	10.0	5.0	1.00	1.00	1.00	1.00
6	8.0	18.0	2.0	2.0	15.0	10.0	1.00	1.00	1.00	1.00
7	6.0	16.0	2.0	2.0	25.0	20.0	1.00	1.00	1.00	1.00
8	4.0	14.0	2.0	2.0	40.0	30.0	1.00	1.00	1.00	1.00
9	2.0	12.0	2.0	2.0	65.0	40.0	1.00	1.00	1.00	1.00
10	1.0	10.0	2.0	2.0	80.0	50.0	1.00	1.00	1.00	1.00
11	0.0	5.0	2.0	2.0	95.0	60.0	1.00	1.00	1.00	1.00
12	0.0	3.0	2.0	2.0	100.0	75.0	1.00	1.00	1.00	1.00
13	0.0	1.0	2.0	2.0	100.0	100.0	1.00	1.00	1.00	1.00

Sum = 653.0 Estimated Sum = 31000 Subadults: Ages 0 to 0

Data Set: MD537 2012 ten year graph.GN102/29/2012 11:17 am Page 2

MSI Function is Linear

Bio-Year	Preseason MSI	Harvest // Des. Pop Size in NA Subadults#	Males#	Females#	Postseason MSI	Effort & Wound Set Used
1990	0.86	48	1614	679	0.80	0
1991	1.11	44	1891	643	1.00	1
1992	1.21	74	1737	1041	2.00	1
1993	1.46	43	1344	758	1.00	1
1994	1.40	0	1188	194	1.00	1
1995	1.20	5	963	38	1.00	2
1996	1.22	7	824	20	0.80	1
1997	1.00	3	714	18	0.80	0
1998	0.97	0	890	18	1.00	1
1999	1.03	0	1386	12	2.00	1
2000	1.06	2	1170	18	0.10	2
2001	1.16	0	1013	37	1.50	1
2002	1.40	0	929	27	2.00	2
2003	1.06	0	1002	29	1.50	2
2004	1.12	13	1010	103	0.02	0
2005	0.97	3	1109	49	1.00	1
2006	1.13	14	1244	45	1.30	1
2007	1.24	19	1402	159	1.10	1
2008	1.19	35	1315	206	1.10	1
2009	1.10	17	1192	156	1.10	1
2010	1.14	7	1143	151	1.40	1
2011	1.31	21	1049	124	1.90	1
2012	1.26	20	955	125	1.70	1

Set 1	Wounding Loss	10.%	10.%	10.%	Yearling Male 10.%
Set 2	Wounding Loss	10.%	10.%	10.%	Yearling Male 10.%

Bio-Year	Young/100 Fems Age 1 - 1	Young/100 Fems Age 2 - 13	Young/100 Fems Disabled	Sex Ratio: 50 : 50
1991	0.0	170.0	0.0	
1992	0.0	170.0	0.0	
1993	0.0	170.0	0.0	
1994	0.0	170.0	0.0	
1995	0.0	170.0	0.0	
1996	0.0	170.0	0.0	
1997	0.0	170.0	0.0	
1998	0.0	170.0	0.0	
1999	0.0	170.0	0.0	
2000	0.0	170.0	0.0	
2001	0.0	170.0	0.0	
2002	0.0	170.0	0.0	
2003	0.0	170.0	0.0	
2004	0.0	170.0	0.0	
2005	0.0	170.0	0.0	
2006	0.0	170.0	0.0	
2007	0.0	170.0	0.0	
2008	0.0	170.0	0.0	
2009	0.0	170.0	0.0	
2010	0.0	170.0	0.0	
2011	0.0	170.0	0.0	
2012	0.0	170.0	0.0	
2013	0.0	0.0	0.0	

Table 1. Population Size During Bio-Year for MD537 2012 ten year graph.GN1 02/29/2012 11:17 am

Bio-Year	Start	Pre-Season	Post Season	End	%Growth
2002	31000	21072	20020	13324	-15.1
2003	26316	19148	18014	13119	-5.8
2004	24799	17965	16726	16668	22.1
2005	30278	23354	22077	18073	11.1
2006	33644	24438	23005	17795	1.1
2007	34020	23519	21781	17729	0.3
2008	34117	23944	22233	17990	1.1
2009	34481	25015	23514	18960	4.2
2010	35923	25822	24391	18571	-0.6
2011	35720	24001	22688	15821	-11.6
2012	31593	21258	20048	14331	-54.6

Table 2. Preseason Natural Mortality for MD537 2012 ten year graph.GN1 02/29/2012 11:17 am

Bio-Year	Sub-Adults	Adult Males	Adult Females	Total	% of Pop
2002	9438	187	303	9928	32.0
2003	6886	108	175	7169	27.2
2004	6541	107	186	6835	27.6
2005	6601	119	205	6924	22.9
2006	8797	150	258	9206	27.4
2007	10059	159	282	10501	30.9
2008	9751	148	274	10173	29.8
2009	9070	138	258	9466	27.5
2010	9669	153	279	10101	28.1
2011	11233	174	313	11719	32.8
2012	9937	140	259	10335	32.7

Table 3. Harvest Mortality for MD537 2012 ten year graph.GN1 02/29/2012 11:17 am

Bio-Year	Sub-Adults	Adult Males	Adult Females	Total	% of Pop
2002	0	929	27	956	4.5
2003	0	1002	29	1031	5.4
2004	13	1010	103	1126	6.3
2005	3	1109	49	1161	5.0
2006	14	1244	45	1303	5.3
2007	19	1402	159	1580	6.7
2008	35	1315	206	1556	6.5
2009	17	1192	156	1365	5.5
2010	7	1143	151	1301	5.0
2011	21	1049	124	1194	5.0
2012	20	955	125	1100	5.2

Table 4. Harvest Percentages for MD537 2012 ten year graph.GN1 02/29/2012 11:17 am

Bio-Year	Sub-Adults	Adult Males	Adult Females	Total	Yearling Males
2002	0.0	14.3	0.3	4.54	39.6
2003	0.0	20.2	0.4	5.38	16.0
2004	0.3	21.5	1.3	6.27	30.2
2005	0.0	18.5	0.5	4.97	20.0
2006	0.2	19.2	0.4	5.33	15.5
2007	0.3	22.4	1.4	6.72	12.4
2008	0.5	21.7	1.8	6.50	13.3
2009	0.2	19.5	1.4	5.46	14.4
2010	0.1	17.4	1.3	5.04	15.2
2011	0.4	16.3	1.1	4.97	12.0
2012	0.3	17.6	1.2	5.17	7.0

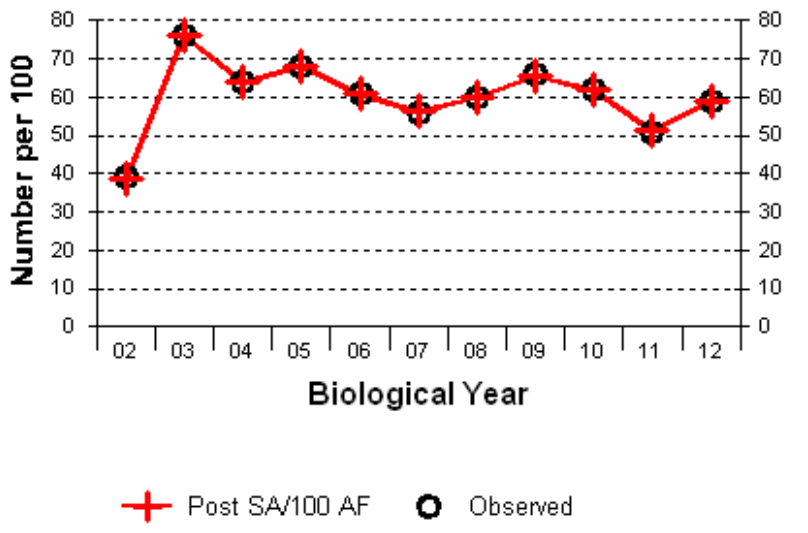
Table 5. Postseason Natural Mortality for MD537 2012 ten year graph.GN1 02/29/2012 11:17 am

Bio-Year	Sub-Adults	Adult Males	Adult Females	Total	% of Pop
2002	2831	1017	2848	6697	33.4
2003	3206	516	1172	4894	27.2
2004	36	6	16	58	0.3
2005	2452	419	1133	4003	18.1
2006	3075	551	1584	5210	22.6
2007	2366	398	1288	4052	18.6
2008	2540	375	1328	4243	19.1
2009	2850	382	1322	4554	19.4
2010	3570	528	1721	5820	23.9
2011	3919	729	2218	6867	30.3
2012	3459	572	1685	5717	28.5

Table 7. Postseason Ratios for MD537 2012 ten year graph.GN1 02/29/2012 11:17 am

Bio-Year	Subadults /100 1+F	2+ Males /100 1+F	Yr. Males /100 1+F	Ad Males /100 1+F
2002	38.6	36.3	15.9	52.3
2003	75.9	42.9	5.2	48.0
2004	63.9	31.1	13.5	44.6
2005	68.1	24.6	21.9	46.4
2006	60.7	27.9	18.1	46.0
2007	56.2	28.4	14.7	43.1
2008	59.8	26.8	15.0	41.8
2009	65.5	26.7	15.9	42.6
2010	61.7	27.6	17.2	44.8
2011	51.3	31.5	14.5	46.1
2012	58.9	35.2	9.0	44.2

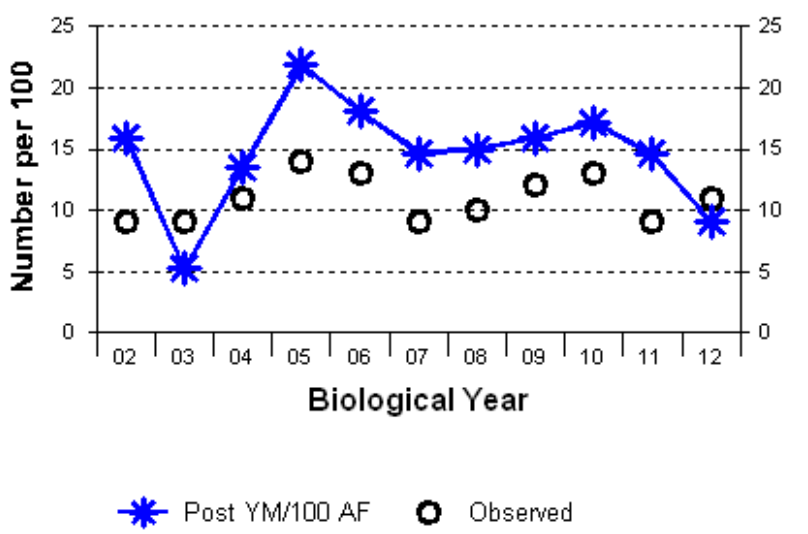
POP-II (V1.2.9) Graph 7. Postseason Ratios



'12 ten year graph.GN1, 02/29/2012 11:17 am, Correlation (R) = 1, GOF = 0.996

YR	SIM	OBS
02	39	39
03	76	76
04	64	64
05	68	68
06	61	61
07	56	56
08	60	60
09	66	66
10	62	62
11	51	51
12	59	59
	AVERAGES	
of Col.	60	
of Pair	60	60

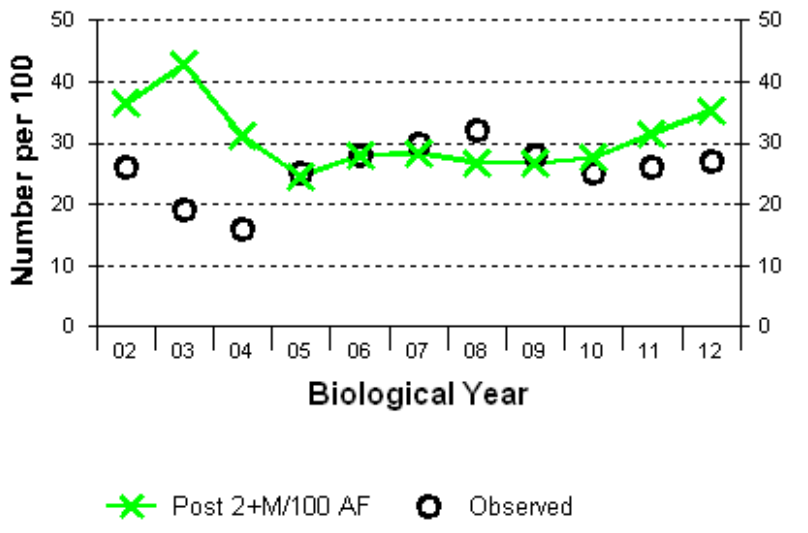
POP-II (V1.2.9) Graph 7. Postseason Ratios



en year graph.GN1, 02/29/2012 11:17 am, Correlation (R) = 0.617, GOF = 0.536

YR	SIM	OBS
02	16	9
03	5	9
04	13	11
05	22	14
06	18	13
07	15	9
08	15	10
09	16	12
10	17	13
11	15	9
12	9	11
	AVERAGES	
of Col.	15	
of Pair	15	11

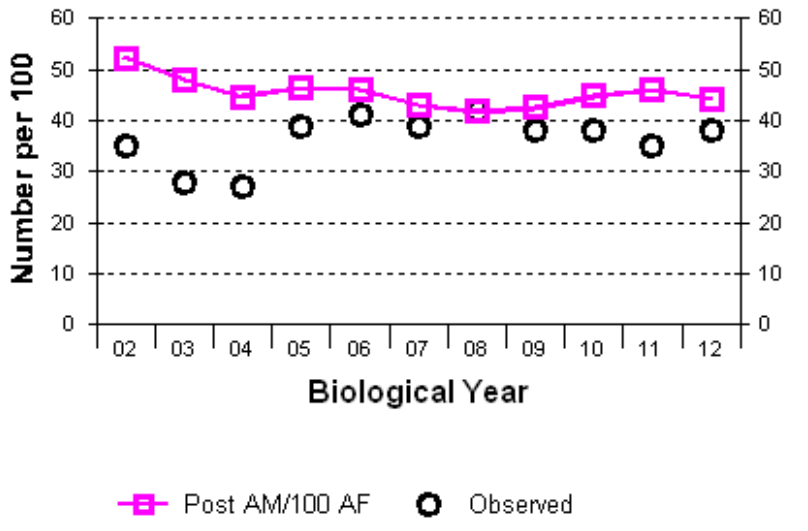
POP-II (V1.2.9) Graph 7. Postseason Ratios



: ten year graph.GN1, 02/29/2012 11:17 am, Correlation (R) = -0.49, GOF = 0.62

YR	SIM	OBS
02	36	26
03	43	19
04	31	16
05	25	25
06	28	28
07	28	30
08	27	32
09	27	28
10	28	25
11	32	26
12	35	27
	AVERAGES	
of Col.	31	
of Pair	31	26

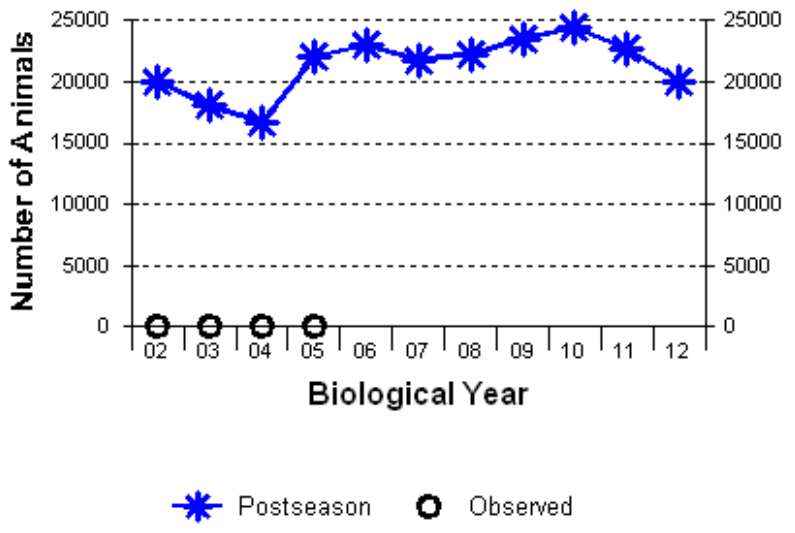
POP-II (V1.2.9) Graph 7. Postseason Ratios



n year graph.GN1, 02/29/2012 11:17 am, Correlation (R) = -0.379, GOF = 0.697

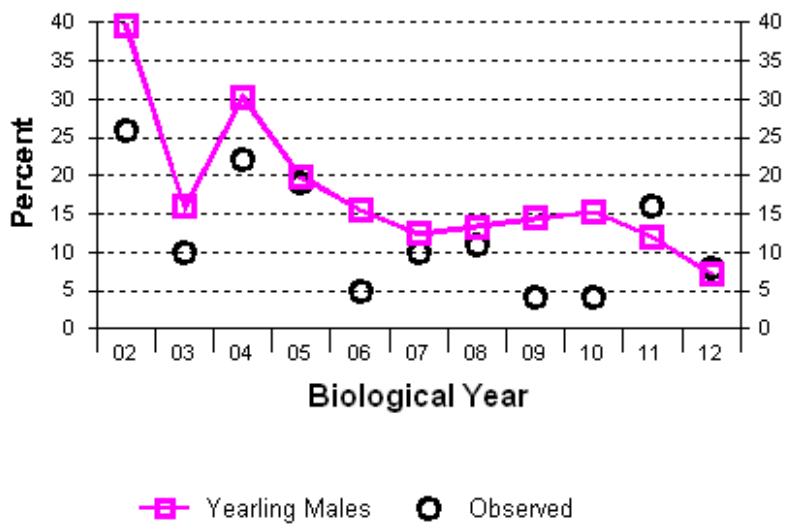
YR	SIM	OBS
02	52	35
03	48	28
04	45	27
05	46	39
06	46	41
07	43	39
08	42	42
09	43	38
10	45	38
11	46	35
12	44	38
	AVERAGES	
of Col.	45	
of Pair	45	36

POP-II (V1.2.9) Graph 1. Population Size During Bio-Year

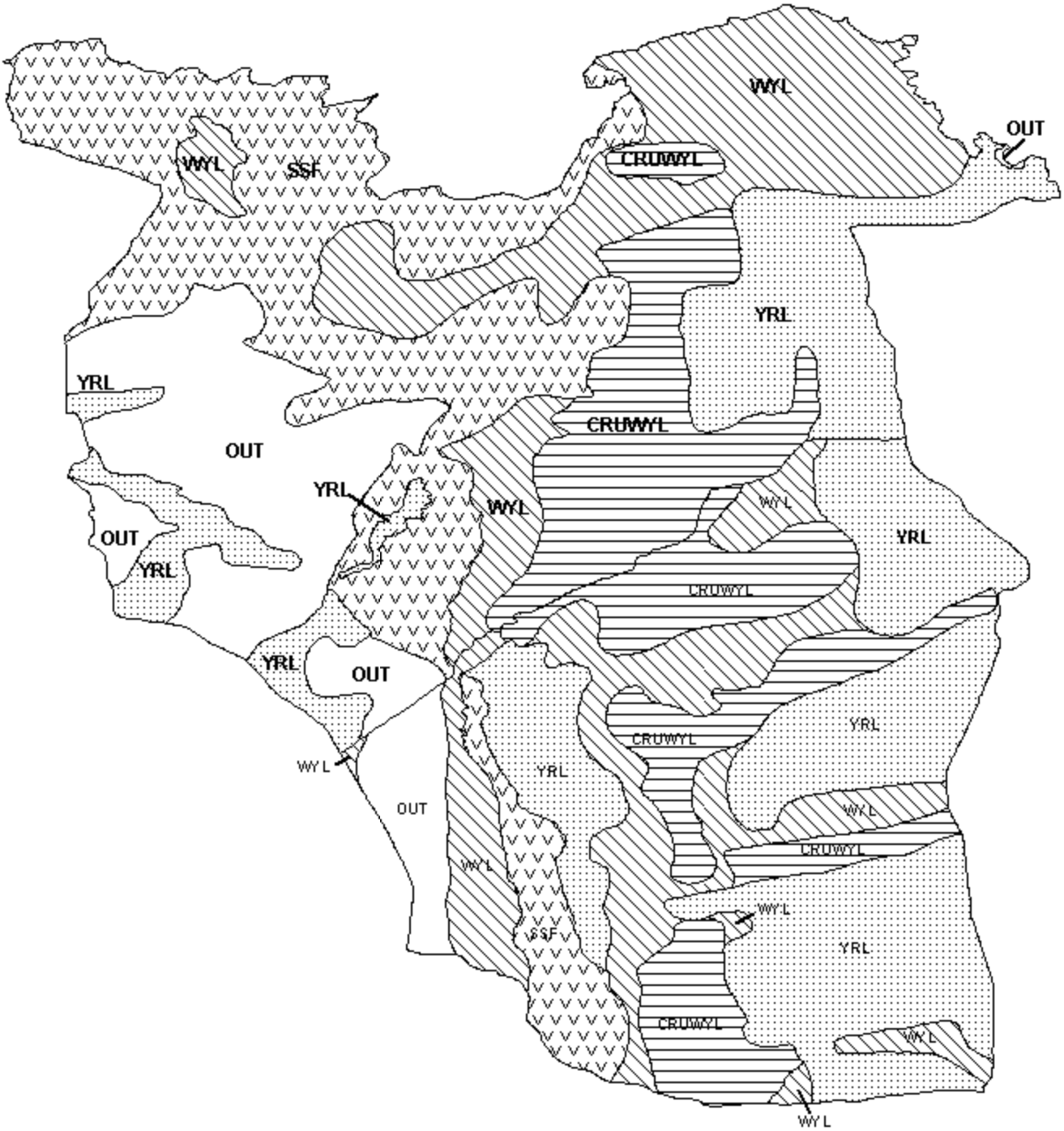


YR	SIM	OBS
02	20020	0
03	18014	0
04	16726	0
05	22077	0
06	23005	-----
07	21781	-----
08	22233	-----
09	23514	-----
10	24391	-----
11	22688	-----
12	20048	-----
	AVERAGES	
of Col.	21318	
of Pair	19209	0

POP-II (V1.2.9) Graph 4. Harvest Percentages



YR	SIM	OBS
02	40	26
03	16	10
04	30	22
05	20	19
06	15	5
07	12	10
08	13	11
09	14	4
10	15	4
11	12	16
12	7	8
	AVERAGES	
of Col.	18	
of Pair	18	12



Mule Deer (MD537) - Laramie Mountains
HA 59, 60, 62-64, 73
Revised - 3/04

2011 - JCR Evaluation Form

SPECIES: Mule Deer | PERIOD: 6/1/2011 - 5/31/2012

HERD: MD539 - SHEEP MOUNTAIN

HUNT AREAS: 61, 74-77 | PREPARED BY: LEE KNOX

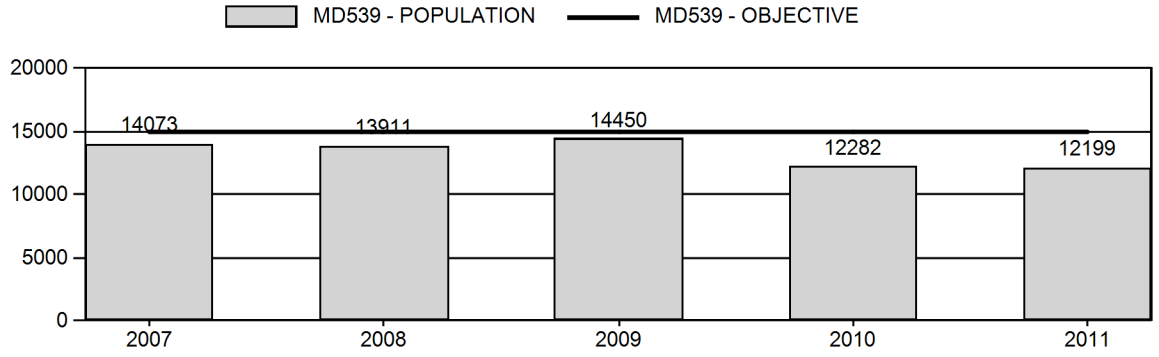
	2006 - 2010 Average	2011	2012 Proposed
Population:	13,655	12,199	13,408
Harvest:	560	328	175
Hunters:	1,999	1,827	1,600
Hunter Success:	28%	18%	11%
Active Licenses:	1,999	1,827	1,600
Active License Percent:	28%	18%	11%
Recreation Days:	9,600	8,768	4,500
Days Per Animal:	17.1	26.7	25.7
Males per 100 Females	29	30	
Juveniles per 100 Females	62	55	

Population Objective:	15,000
Management Strategy:	Recreational
Percent population is above (+) or below (-) objective:	-18.7%
Number of years population has been + or - objective in recent trend:	11
Model Date:	03/02/2012

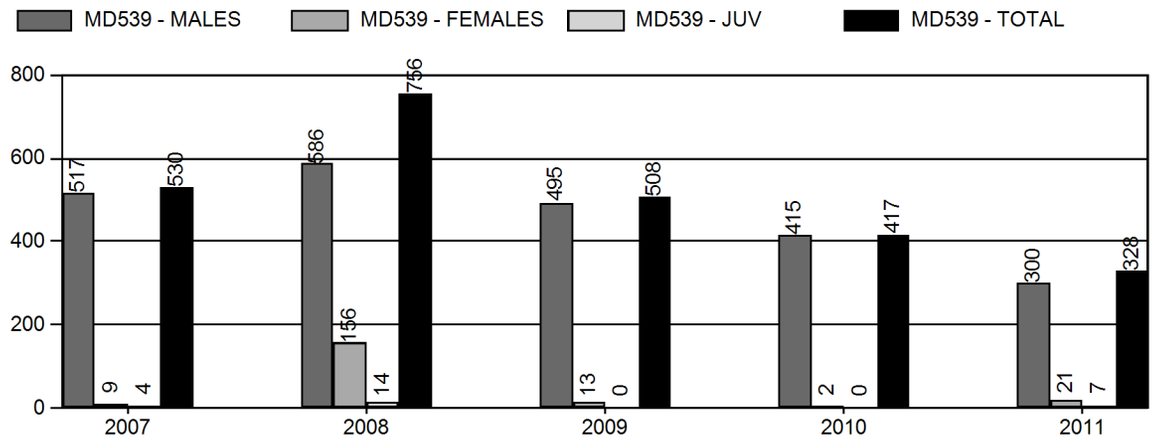
Proposed harvest rates (percent of pre-season estimate for each sex/age group):

	JCR Year	Proposed
Females ≥ 1 year old:	0.0%	0.1%
Males ≥ 1 year old:	13.3%	6.8%
Juveniles (< 1 year old):	0.0%	0.0%
Total:	2.45%	1.32%
Proposed change in post-season population:	1.7%	5.3%

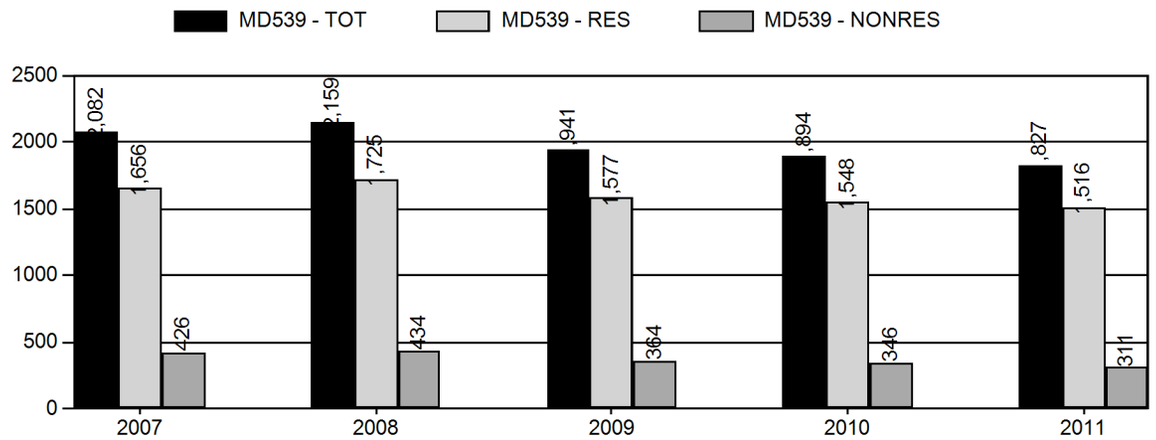
Population Size - Postseason



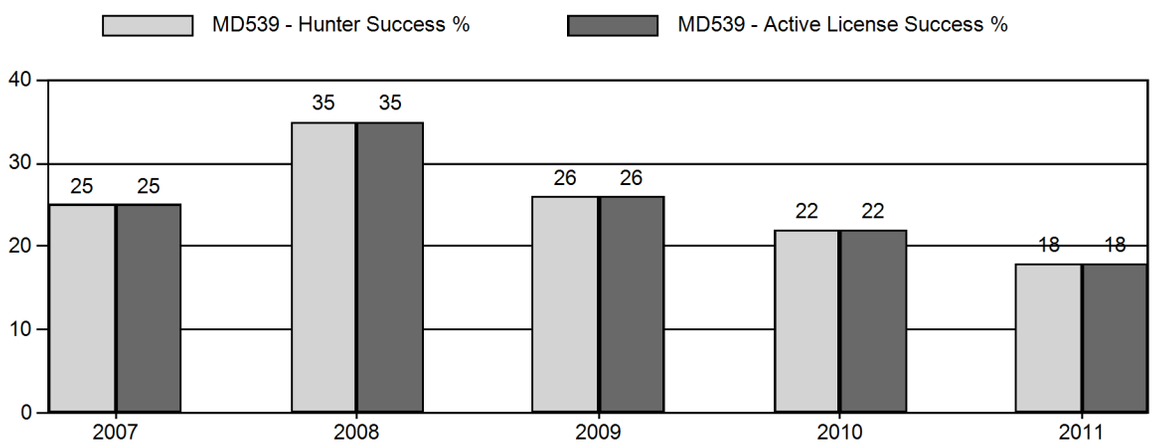
Harvest



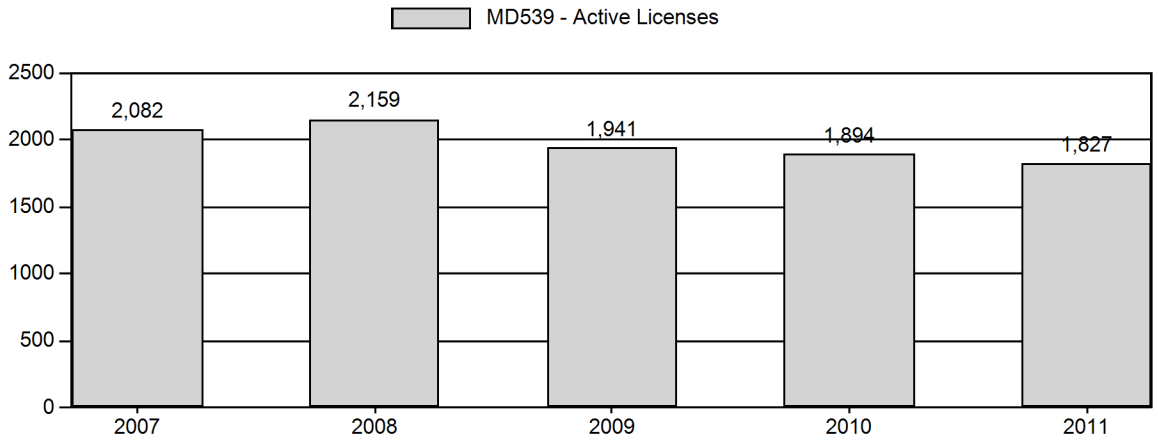
Number of Hunters



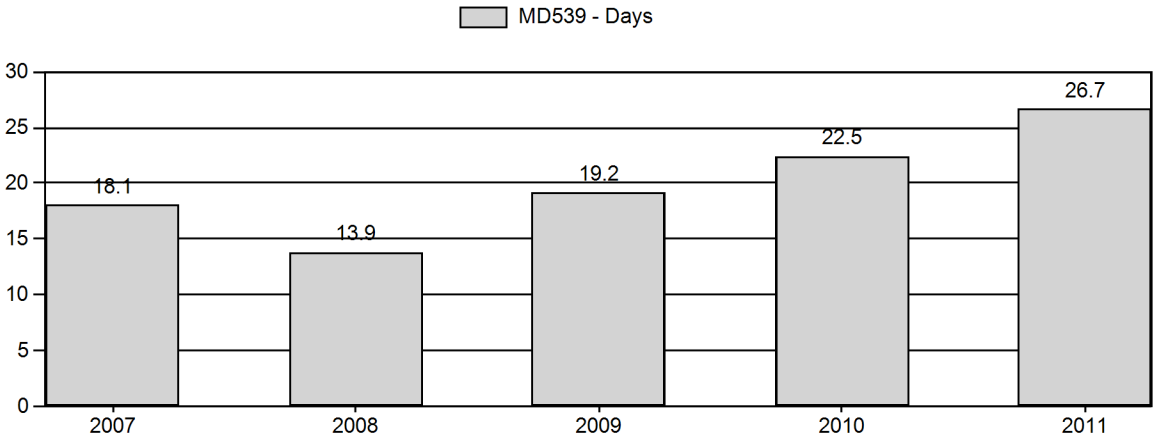
Harvest Success



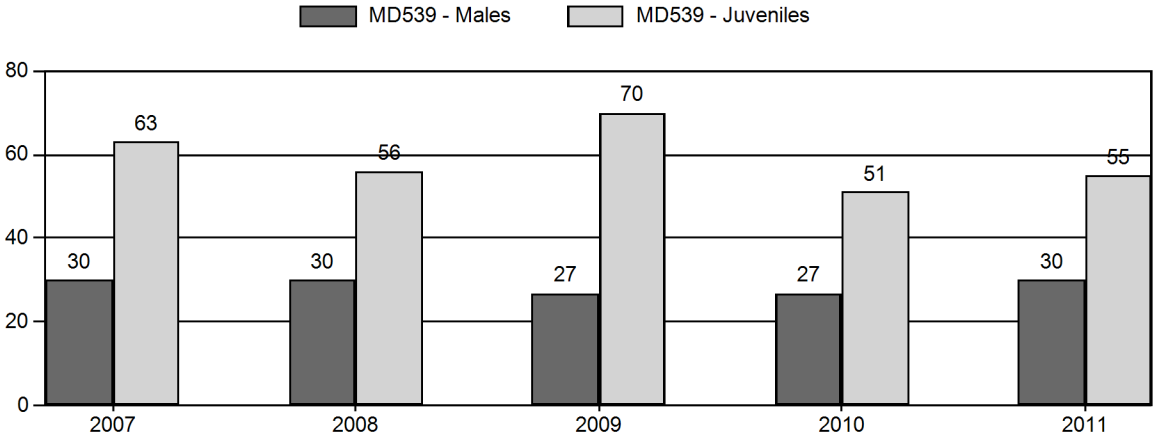
Active Licenses



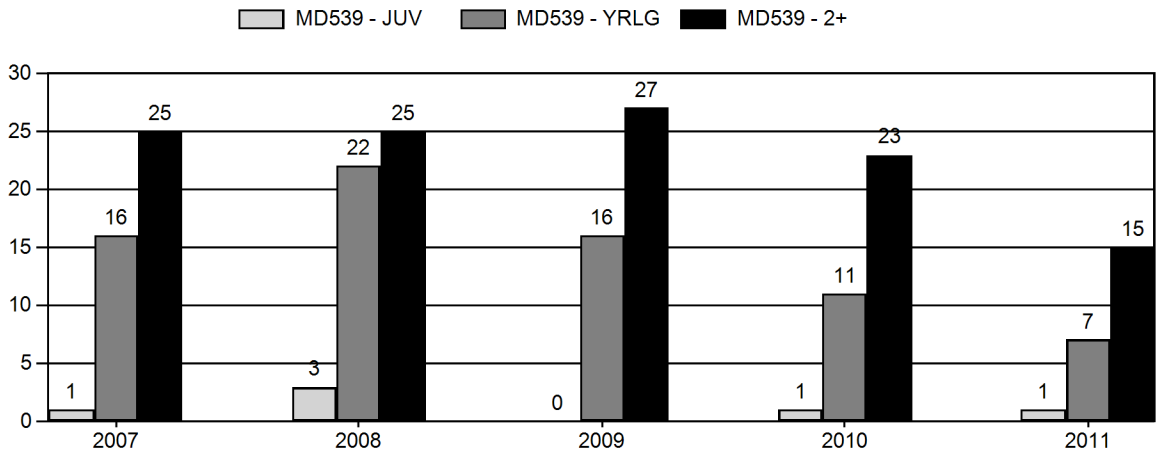
Days per Animal Harvested



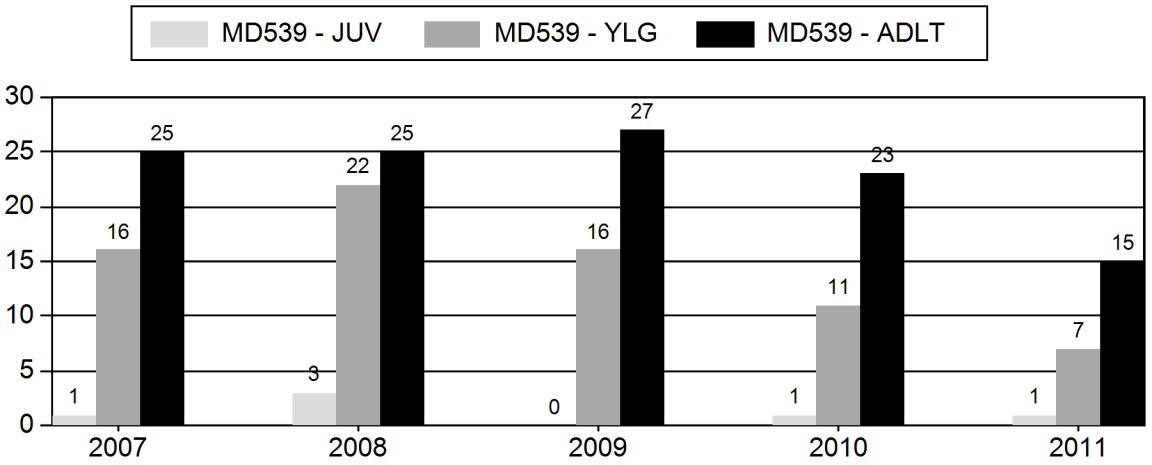
Postseason Animals per 100 Females



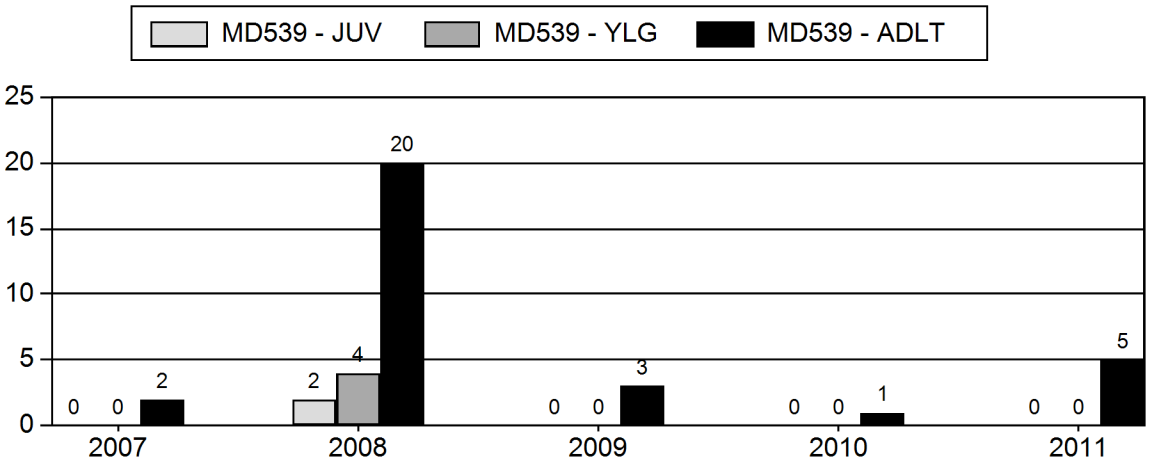
Age Structure of Field Checked Males



Age Structure Data (Field and Laboratory) - Male



Age Structure Data (Field and Laboratory) - Female



INTRODUCTION

The Sheep Mountain Mule Deer Herd (MD539) is managed under recreational guidelines and includes Deer Hunt Areas 61, 74, 75, 76 and 77. The Sheep Mountain Herd is located in Southeastern Wyoming ranging from the east slope of the Snowy Range to U.S. Highway 30, Interstate Highway 80 (I-80) and Interstate Highway 25 at Cheyenne. It extends north from the Wyoming-Colorado line to the town of Medicine Bow. The herd occupies about 2,253 square miles within this area. Segments of this deer herd are also part of the Poudre Herd of Colorado.

The 2009 - 2011 post season population average of 12, 977 is down from the previous 3 year average of 13,800. Poor forage production and severe winter conditions reduced the herd in 2010 and again in 2011. During the period between 2009 and 2011 hunter numbers averaged 1,887 with an average success of 22% and 23 days per harvest. Buck and fawn ratios averaged 28 per 100 does and 59 per 100 does respectively.

The reduced quality of important seasonal habitats appears to be the major factor limiting the growth of this population. Other management issues in the Sheep Mountain Herd include nonhunting mortalities from road kill and loss of migration routes due to major highways and interstates creating barriers. Subdivisions have expanded on winter ranges, particularly south of Laramie in Area 61, the Sheep Mountain, Woods Creek, and Centennial Valley in Areas 75 and 76, and near Jelm and Boulder Ridge in Area 77. Wind energy, gravel pits, mining, and oil and gas development have also caused loss of winter range habitat within the herd unit. CWD was first documented in the Sheep Mountain Mule Deer Herd through hunter harvest in 2002. The Sheep Mountain Mule Deer Herd ranges from 1.1% in hunt area 76 to 3.4% in hunt area 77 with a mean of 2.5%. This is a cooperatively low prevalence and likely has a limited impact on this deer herd on a population level.

WEATHER

No data was collected for this reporting period

HABITAT CONDITIONS/ASSESSMENT

Procedures for habitat monitoring were described in the 2002 Annual Report in some detail. Readers are referred to that discussion and to Appendix A of this and previous Laramie Region Big Game Completion Reports for more background on monitoring goals, data collection and analyses. The monitoring focuses on key browse species representative of certain locations within the herd. Data for some transects in the Sheep Mountain Mule Deer Herd are incomplete due to changes in personnel and other assignments.

Appendix A includes tables summarizing habitat assessments from transects on important ranges for the Sheep Mountain Herd. Utilization data cover the 2005/2006 through 2010/2011 winters and production data range from 2004 through 20011.

We have been concerned about the age structure, condition and vigor of browse stands on winter ranges. Overutilization of important shrub species appears to be more prevalent in the northern part of the Sheep Mountain Herd, and along the Wyoming Highway 230 corridor along Woods Creek. Some habitat treatments have been conducted within the herd to improve habitat quality. Observed fawn:doe ratios suggest recruitment is declining. Although the herd is below objective, there is some concern that wintering deer densities are higher than what the habitat can currently support.

POPULATION

Classification Data

During the 2009-2011 period sample sizes varied among hunt areas and among years, based upon deer distributions and sampling effort (Table 1). We did find some differences in proportions of the herd's sample among hunt areas (Table 2). Hunt Area 74, which maintains higher ratios than the rest of the herd, consists of 49% of the classification data in 2011. In some years, large samples are collected in Areas 76 and 77 and normally few deer are classified in Area 61 as most winter in Colorado. Buck to doe ratios have remained near 27 per 100 except in 2011 when they were 30 per 100 (figure 1.). Fawn to doe ratios decreased from 63 per 100 in 2009 to 51 per 100 in 2010 and remained low in 2011 with 55 per 100, due to poor forage and harsh winter conditions.

2007 - 2011 Postseason Classification Summary

for Mule Deer Herd MD539 - SHEEP MOUNTAIN

		MALES				FEMALES		JUVENILES				Males to 100 Females				Young to		
Year	Post Pop	Ylg	Adult	Total	%	Total	%	Total	%	Tot Cls	Cls Obj	Ylng	Adult	Total	Conf Int	100 Fem	Conf Int	100 Adult
2007	14,073	76	147	223	15%	754	52%	472	33%	1,449	1,162	10	19	30	± 3	63	± 4	48
2008	13,911	38	93	131	16%	441	54%	247	30%	819	993	9	21	30	± 4	56	± 6	43
2009	14,450	91	134	225	14%	843	51%	593	36%	1,661	1,391	11	16	27	± 0	70	± 0	56
2010	12,282	63	63	126	15%	474	56%	243	29%	843	840	13	13	27	± 0	51	± 0	40
2011	12,199	48	98	146	16%	480	54%	263	30%	889	1,087	10	20	30	± 4	55	± 5	42

Table 1. Postseason classification summary in the Sheep Mountain Mule Deer Herd, 2009-2011.

Hunt Area	2009		2010		2011	
	Number	%	Number	%	Number	%
61	33	**2**	10	**1**	0	**0**
74	725	**44**	225	**26**	435	**49**
75	94	**6**	39	**5**	26	**3**
76	604	**36**	443	**53**	239	**27**
77	205	**12**	126	**15**	189	**21**
Total	***1661***	***100***	***843***	***100***	***889***	***100***

Table 2. Distribution of classification samples among Hunt Areas in the Sheep Mountain Mule Deer Herd, 2009-2011.

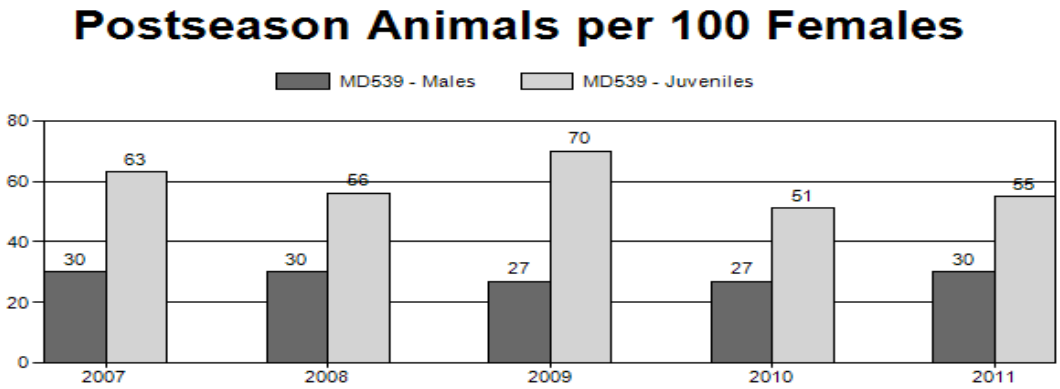


Figure 1. Animals per 100 Females Postseason, Sheep Mountain Mule Deer Herd, 2009-2011.

Population Modeling

The current postseason population objective for the Sheep Mountain Mule Deer Herd is 15,000 deer. The herd has remained below the population objective for over 21 years and is currently estimated at 12,199 (Figure 2.). The 2009 post season population estimate was 14,450. It appears that each time this herd grows near the objective the population declines shortly after. It is questionable with the current state of habitat quality, if a population of 15,000 can be obtained or if it is sustainable without irreparable damage to the habitat. Others issues with modeling this herd include a segment of deer in Hunt Area 61 winter in Colorado and are not in Wyoming during classifications. Conversely a large segment of deer from Colorado winter in Wyoming in Hunt Area 76 and 77 are present during classifications but not during the fall.

All information regarding population modeling was derived using the program POP II. The 2011 JCR will be the last year the Wyoming Game and Fish Department uses POP II and will be switching to a spread sheet model for 2012.

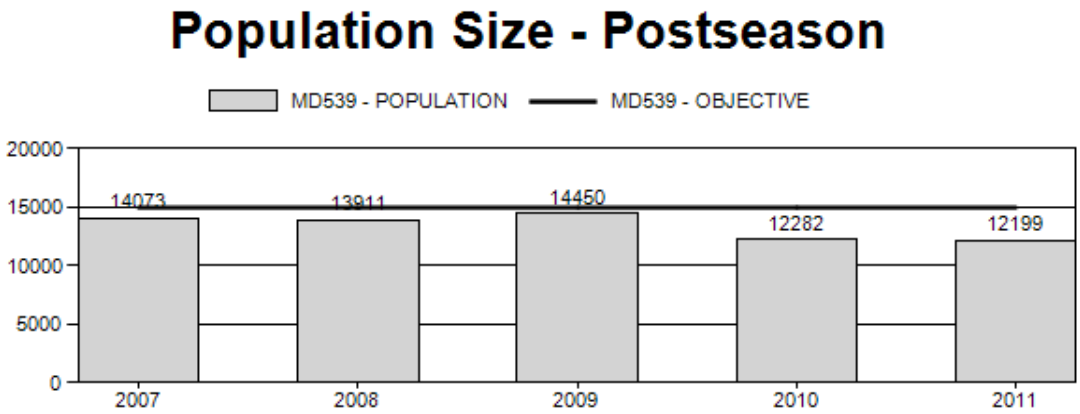


Figure 2. Population Postseason Sheep Mountain Mule Deer Herd, 2009-2011.

HUNTING SEASON

2011 HUNTING SEASONS

MD539 - SHEEP MOUNTAIN

Hunt Area	Add'l Hunt Areas	Type	Quota	Season Dates	Limitations
61	74,75,76,77	ARCH		09/01 - 09/30	Refer to Section 3 of this Chapter
61		GEN		10/01 - 10/14	any deer
74	75,76,77	GEN		10/01 - 10/14	antlered mule deer or any white-tailed deer

The 2009-2011 hunting seasons have been fairly consistent offering antlered only deer hunting on general license for 14 days in Hunt Areas 74,75,76,77 in an attempt to increase the herd towards objective. Area 61 remained any deer to increase CWD sampling along the Colorado border but few deer were harvested in 61 due to the area being predominately private with little public access and few samples were gathered.

Harvest

Mule deer harvests in the Sheep Mountain Herd are somewhat dependent upon weather and habitat conditions during the hunting season, and the willingness of hunters to hunt on foot away from roads. Hunt Areas 75 and 76 contain the majority of the accessible public land in the herd unit and had 66% of the hunters with 54% of the harvest and a success rate of 12% in 2011. Throughout the Sheep Mountain Herd unit buck harvests have been declining with a total of 495 bucks harvested in 2009, 415 in 2010, and 300 in 2011 (Figure 3). Doe harvest was minimal with fewer than 25 does taken annually with the majority harvested in Area 61.

Area	Type	Active Lic/Htrs		Buck	Doe	Fawn	Total	Success		Days/Harvest	Days	Licenses Sold
2011												
61 HARRIMAN												
	General	263		57	21	7	85	32.30%		10.1	858	
Pooled Total		263	(263)*	57	21	7	85	32.30%	(32.3%)*	10.1	858	
Pooled Resident		243		46	21	7	74	30.50%		10.5	779	
Pooled Nonresident		20		11	0	0	11	55%		7.2	79	
74 KYLE												
	General	215		54	0	0	54	25.10%		14.7	796	
Pooled Total		215	(215)*	54	0	0	54	25.10%	(25.1%)*	14.7	796	
Pooled Resident		171		41	0	0	41	24.00%		15.5	637	
Pooled Nonresident		44		13	0	0	13	29.50%		12.2	159	
75 FOUR MILE												
	General	627		81	0	0	81	12.90%		39.1	3170	
Pooled Total		627	(627)*	81	0	0	81	12.90%	(12.9%)*	39.1	3170	
Pooled Resident		516		54	0	0	54	10.50%		47.7	2578	
Pooled Nonresident		111		27	0	0	27	24.30%		21.9	592	
76 SHEEP MOUNTAIN												
	General	704		80	0	0	80	11.40%		36.9	2950	
Pooled Total		704	(704)*	80	0	0	80	11.40%	(11.4%)*	36.9	2950	
Pooled Resident		580		50	0	0	50	8.60%		46.3	2316	
Pooled Nonresident		124		30	0	0	30	24.20%		21.1	634	
77 BOULDER RIDGE												
	General	205		28	0	0	28	13.70%		35.5	994	
Pooled Total		205	(205)*	28	0	0	28	13.70%	(13.7%)*	35.5	994	
Pooled Resident		161		15	0	0	15	9.30%		53.9	809	
Pooled Nonresident		44		13	0	0	13	29.50%		14.2	185	
2011 Hunt Area Total		2014	(2014)*	300	21	7	328	16.30%	(16.3%)*	26.7	8768	0
2011 Herd Total		1827	(1827)*	300	21	7	328	18.00%	(18.0%)*	26.7	8768	0

Table 3. Harvest in the Sheep Mountain Herd Unit by Hunt Area, 2011.

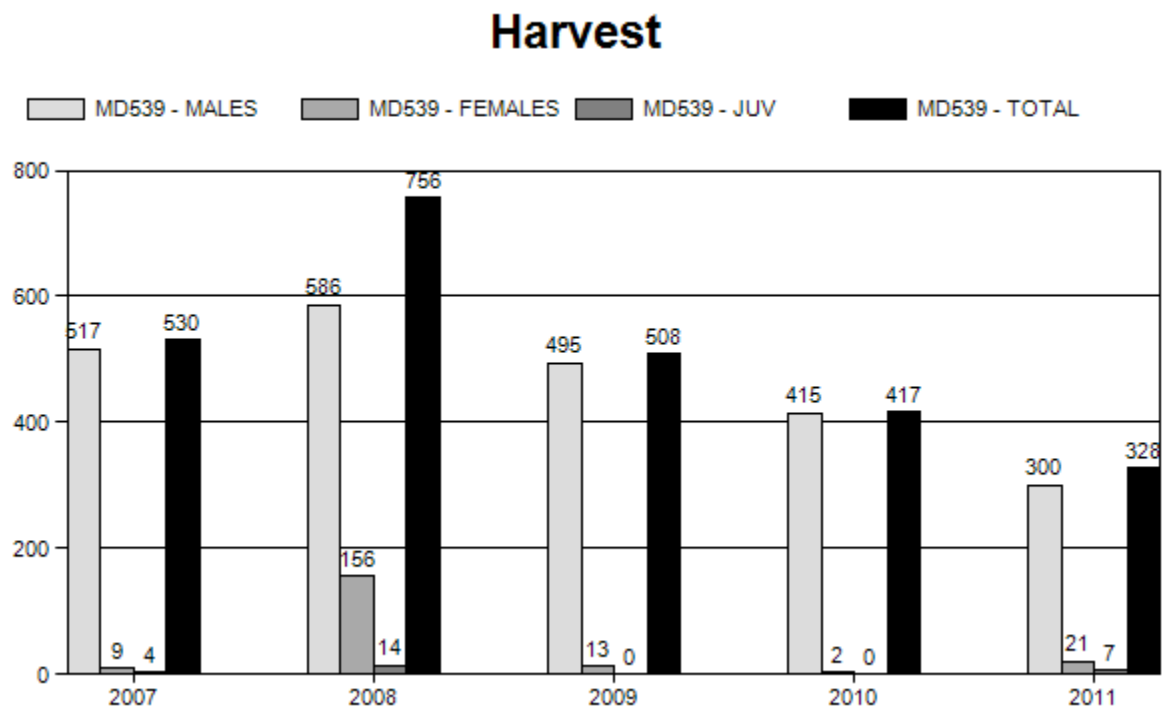


Figure 3. Sheep Mountain Mule Deer Harvest, Wyoming 2007-2011

Harvest Statistics

Hunter numbers declined from 2009 to 2011 by 140 resident hunters and 115 nonresident hunters for a total loss of 255 hunters (Figure 5). This decline may be attributed to fewer nonresident wanting to travel due to the economy or the low success rates the last few years. Success in the Sheep Mountain Herd declined from 26 % in 2009 to 18 % in 2011. Days per animal harvested went from 19 days in 2007 to 28 days in 2011. A 3 day any deer season was implemented in 2008 and is most likely the reason success increased as well as days per harvest decreased that year.

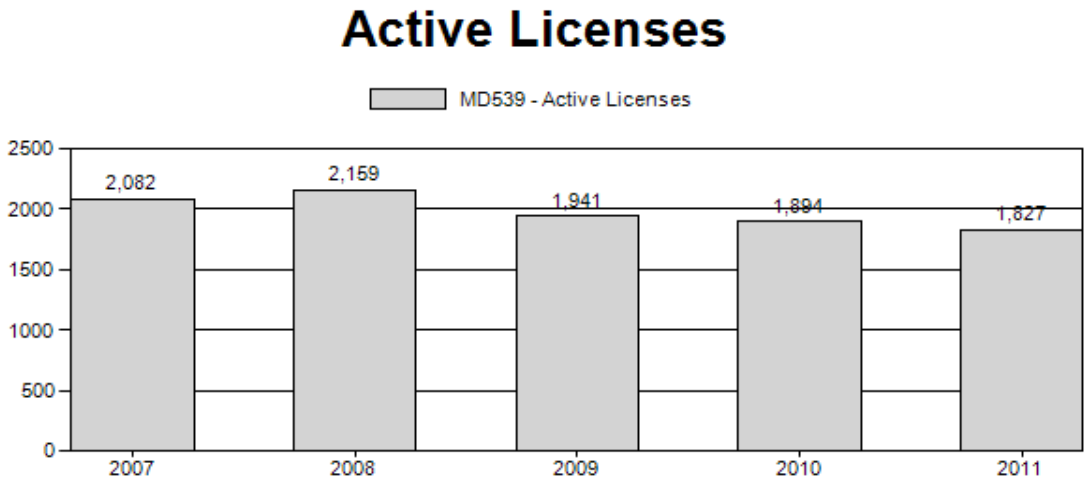
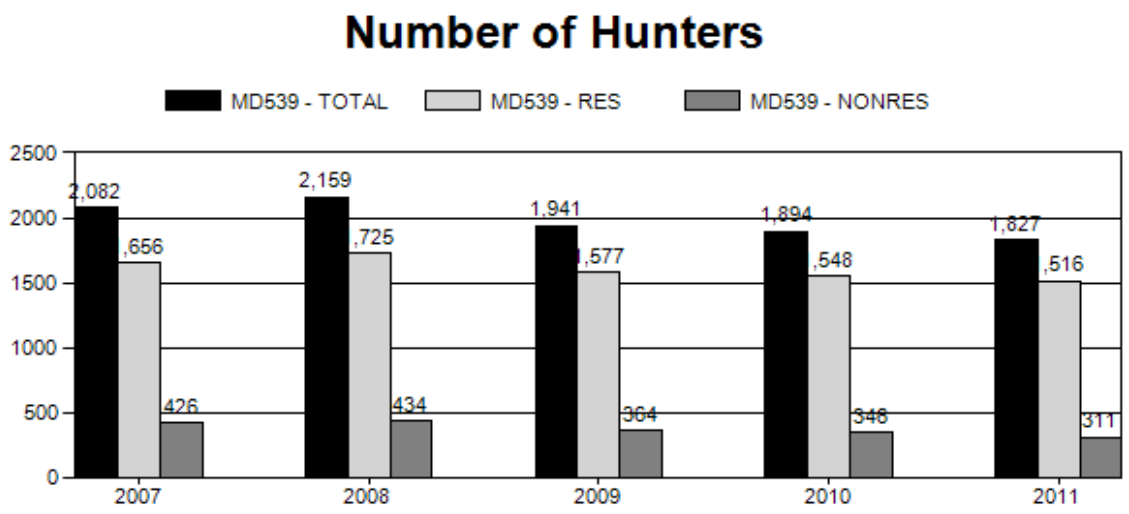


Figure 4. Active licenses in the Sheep Mountain deer herd, Wyoming 2007-2011



(Figure 5.) Number of hunters in the Sheep Mountain Herd Unit, 2007-2011

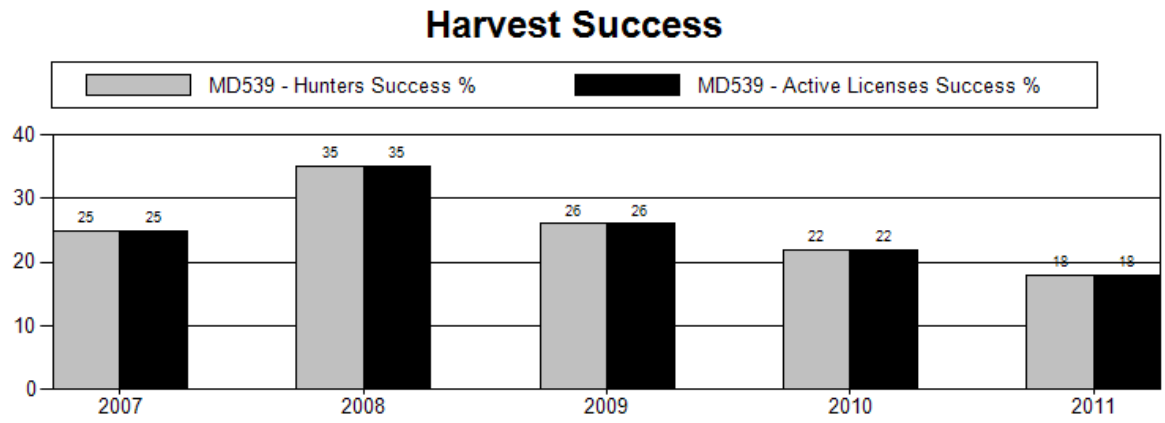


Figure 6. Harvest Success in the Sheep Mountain Herd Unit, 2007-2011

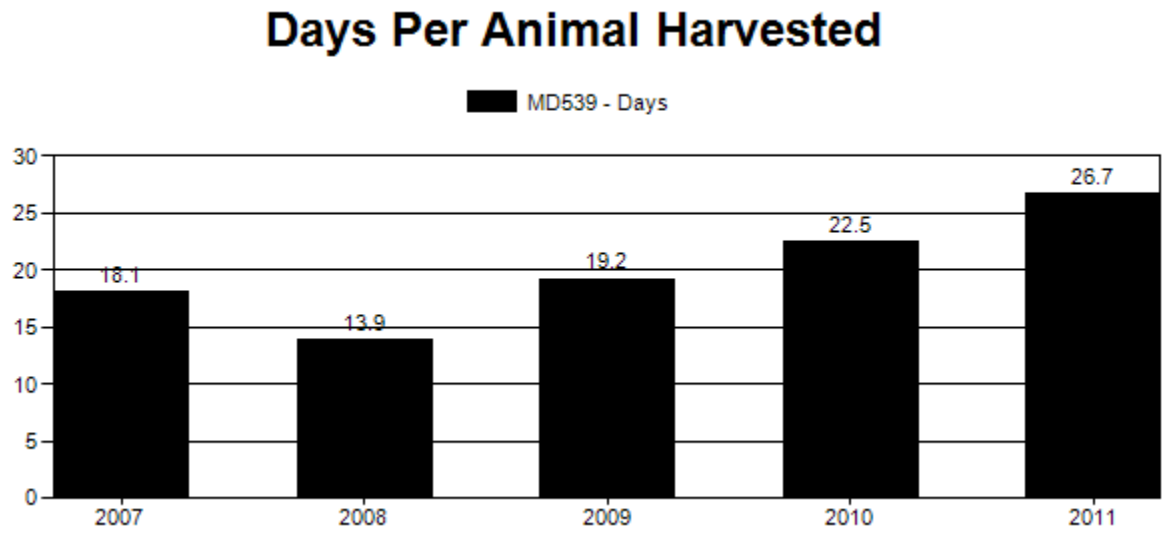


Figure 7. Days per animal harvested in the Sheep Mountain Herd Unit, 2007-2011

Hunter Field Checks

Obtaining a large sample size in this herd unit is difficult due to areas 74, 77 and 61 being predominately private with limited access. Samples size for field checked males was consistent from 2007 to 2010 with around 25 mature males checked. The drop in 2011 to 15 is reasonable considering the low hunter success but may also be contributed to change in personnel at that time. Yearling buck harvest appears proportional to the mature buck harvest except in 2008 when it was almost equal.

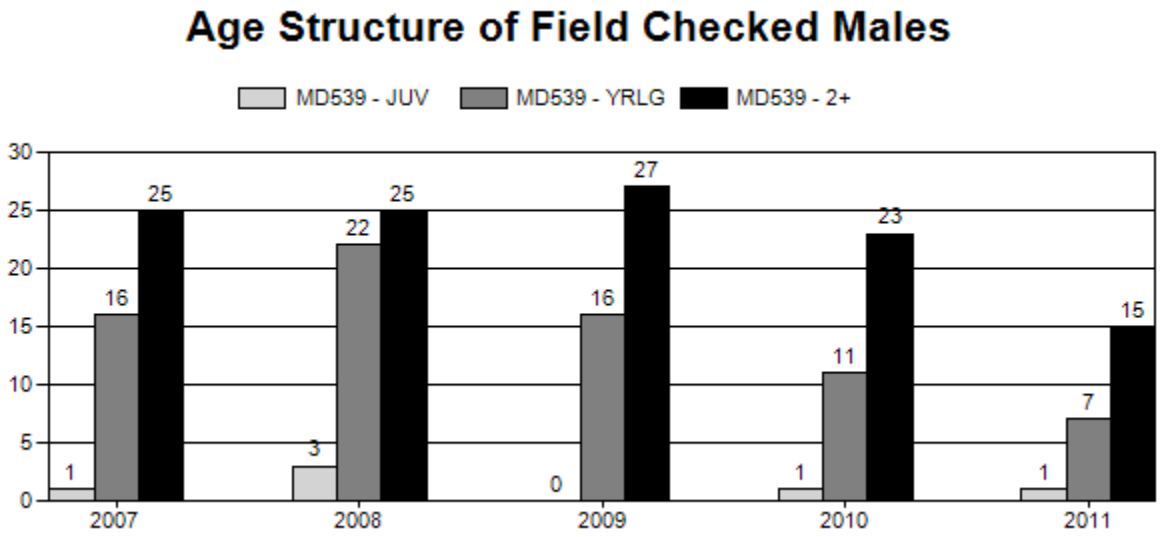


Figure 8. Age Structure of field checked males in the Sheep Mountain Herd Unit, 2007-2011

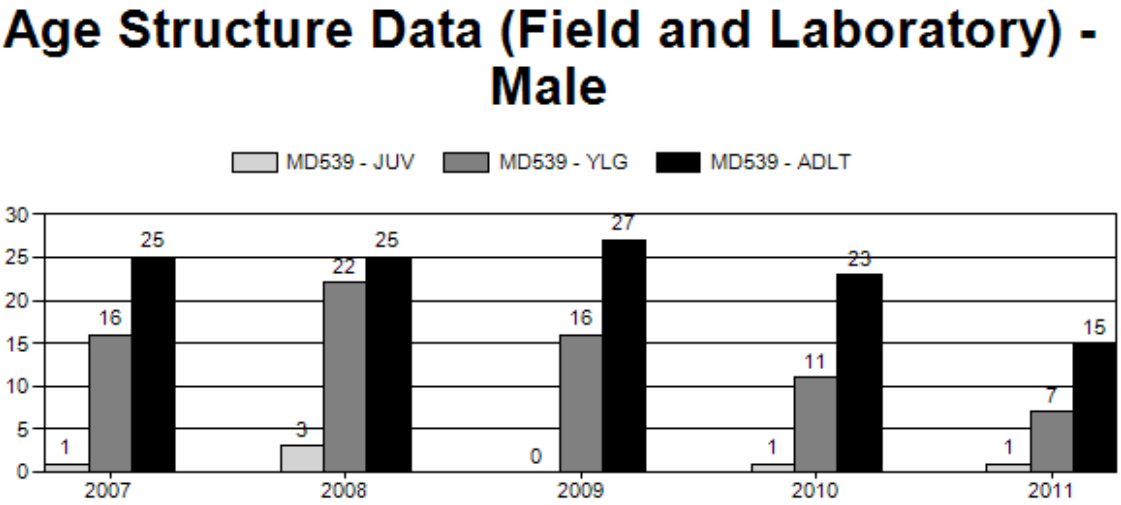


Figure 9. Combined Field and Laboratory age structure of male deer in the Sheep Mountain Herd Unit 2007-2011

OTHER MANAGEMENT ISSUES

Management of the Sheep Mountain Mule Deer Herd is affected by several management issues. These include but are not limited to increased motorized and non-motorized recreation, grazing, logging, highways, fences, gravel quarrying, subdivisions, poaching, energy development (coal mining, oil and gas, and wind farms) and other land use changes which cumulative result in a substantial impact on the deer herd.

This is an interstate herd. The Department has discussed development of compatible management strategies, monitoring and hunting seasons for this interstate population with the Colorado Division of Wildlife. Chronic

Wasting Disease occurs throughout the population. With an average prevalence of 2.5% it is unlikely that CWD poses a population level threat to this deer herd.

Harvest management is complicated by increased crowding on public lands with reduced access on private lands. Hunters seem less willing to hunt remote areas on foot. One difficulty is the lack of reliable, independent population assessment techniques to better determine the status of the herd. Obtaining adequate herd composition samples is another problem that limits simulation performance. Despite the concerns about habitat, the public is less interested in increasing harvest to reduce pressure on the important winter ranges and other seasonal habitats.

HABITAT

ON-GOING/COMPLETED PROJECTS

Currently, no new, major habitat projects are underway. We are currently meeting with the USFS on improving mule deer habitat in the Snowy Range.

ISSUES DISCUSSION

We have concerns about the habitat conditions on important ranges within the Sheep Mountain Mule Deer Herd. The age structure, condition, and productivity of key browse species on winter and transitional ranges are less than desired to support the herd at the desired level. The situation is worsened by drought and climatic change. It remains to be seen how deer will be impacted by the mountain pine beetle epidemic running through the Snowy Range. Encroachment by subdivisions and wind farms are some of the major issues threatening mule deer habitat within the herd.

MANAGEMENT RECOMMENDATIONS

1. The spreadsheet model should be validated to determine if it is a reasonable simulation of the assumed dynamics of this herd. Techniques for independently validating model predictions such as quadrat sampling, sightability models, mark-resight, or catch-effort should be evaluated.

2. The Department should promote the long-term habitat treatments among the general public, land management agencies and private landowners. Efforts should be increased to educate the public on the role the need for large-scale efforts to rejuvenate habitats and increase the age class diversity of vegetative stands on important deer habitats. Treatments should be monitored to assure that desired goals are achieved.

3. The Department should encourage responsible use of ATVs and greater enforcement or existing land use regulations. ATV use is becoming a greater issue in maintaining quality hunting opportunities.

4. The Department should find more effective ways to promote conservation of wildlife habitats on private and public lands.

5. The Department should continue efforts to educate the public on managing herds within the capacity of their habitats.

SPECIAL STUDIES

FINAL REPORTS/ON-GOING PROJECTS

Currently, no new or recent investigations have been completed or other projects are underway.

Sheep Mountain Mule Deer
(MD539)
Hunt Areas 61, 74, 75, 76, 77
2012 Hunting Seasons

Hunt Area	Type	Date of Seasons Opens	Closes	Limitations
*61 *CWD Area		Oct. 1	Oct 7	General license; antlered mule deer or any white-tailed deer
*74, *75, *76, *77 *CWD Area		Oct. 1	Oct 7	General license; antlered mule deer or any white-tailed deer
Archery		Sept. 1	Sept 30	Refer to Section 3 of this Chapter

Changes for 2012

- End dates in all hunt areas shortened by 7 days to address low recruitment and low hunter success.
- Changed Area 61 from any deer to antlered mule deer or any white-tailed deer

Management Evaluation

The Sheep Mountain Mule Deer Herd is managed under recreation management guidelines. The herd has remained below objective. Although the herd has shown a slight increase in recent years, it declined slightly in 2010 and continued to decline in 2011. Harsh winter conditions the last two years that have lasted late into spring have increased winter mortalities in fawns and some adult age clases. Drought and reduced habitat productivity have also contributed to the slow growth of this herd. For 2012, we will maintain the antlered mule deer hunt in 74-77 and extend this regulation to Area 61. Doe harvest was allowed in Area 61 to increase CWD sampling on the Colorado border but it is not longer warranted. For 2012 we are reducing the season length to 7 days herd unit wide to mirror season dates in adjacent herd units. This will alleviate increased hunting pressure from displaced hunters later in the season.

Population: The Sheep Mountain Mule Deer Herd was simulated at 12,199 animals following the 2011 hunt. Reduced fawn recruitment coupled with somewhat harsher winter and spring weather contributed to the decline. With the proposed conservative season, the herd is projected

to increase slightly to 13,408 after the 2012 season, if normal conditions return. The buck:doe ratio of 30:100 is in line with the 5 year average and is at the top end of the recreational management threshold, however hunter success is extremely low. The 2011 fawn:doe ratio is 55:100. Doe:fawn ratios have declined during the past 2 years and the five year average remains below 65:100. Current weather and habitat conditions seem to limit the herd's ability to reach objective. The winters of 2007-2008 and 2010-2011 were harsher than previous winters with more persistent and deeper snow cover and extended periods of extreme cold and high winds. The 2011-2012 winter and spring was mild overall with high survival and deer moving to transition ranges in good condition. However, extreme drought and associated wildfires during the summer of 2012 will have a negative impact on the habitat in all seasonal ranges.

Harvest: A total of 1800 hunters harvested 333 deer in 2011 for an overall success rate of 18%. Harvest, hunter numbers and success have been decreasing in recent years even though buck ratios appear to be high. Weather conditions have been warm and dry and have been less favorable for harvest as well. National economic conditions are probably also impacted hunting. Harvest in 2012 should decline due to the shortened season.

POP-II (V1.2.9) Simulation Output Tables for MD539_10.GN1, 03/02/2012 06:39 am

Table 1. Population Size During Bio-Year for MD539_10.GN1 03/02/2012 06:39 am

Bio-Year	Start	Pre-Season	Post Season	End	%Growth
2000	20000	15412	14747	9043	-10.0
2001	18008	12132	11500	9489	5.6
2002	19014	13418	12700	9761	2.9
2003	19559	13650	12658	9798	0.4
2004	19635	12935	11853	9615	-0.3
2005	19568	12073	11068	9627	1.1
2006	19792	13778	13127	10048	2.0
2007	20194	14234	13625	10510	4.6
2008	21128	14339	13522	9951	-3.2
2009	20462	14680	14121	9819	-2.1
2010	20034	13139	12708	9128	-3.9
2011	19246	12536	12199	9585	1.7
2012	19563	13606	13408	10396	5.3

Table 2. Preseason Natural Mortality for MD539_10.GN1 03/02/2012 06:39 am

Bio-Year	Sub-Adults	Adult Males	Adult Females	Total	% of Pop
2000	4391	59	138	4588	22.9
2001	5648	67	161	5876	32.6
2002	5382	62	152	5596	29.4
2003	5683	64	163	5909	30.2
2004	6443	73	184	6700	34.1
2005	7216	78	201	7495	38.3
2006	5794	60	159	6014	30.4
2007	5732	63	165	5960	29.5
2008	6529	72	186	6788	32.1
2009	5571	57	154	5782	28.3
2010	6640	68	187	6895	34.4
2011	6475	60	173	6709	34.9
2012	5737	60	160	5958	30.5

Table 3. Harvest Mortality for MD539_10.GN1 03/02/2012 06:39 am

Bio-Year	Sub-Adults	Adult Males	Adult Females	Total	% of Pop
2000	0	594	11	605	3.9
2001	0	564	11	575	4.7
2002	0	645	8	653	4.9
2003	33	599	269	901	6.6
2004	62	639	283	984	7.6
2005	17	666	231	914	7.6
2006	0	588	4	592	4.3
2007	5	542	7	554	3.9
2008	14	579	150	743	5.2
2009	0	495	13	508	3.5
2010	0	389	3	392	3.0
2011	0	305	2	307	2.4
2012	0	175	5	180	1.3

Table 4. Harvest Percentages for MD539_10.GN1 03/02/2012 06:39 am

Bio-Year	Sub-Adults	Adult Males	Adult Females	Total	Yearling Males

2000	0.0	19.2	0.2	3.93	52.6
2001	0.0	21.8	0.2	4.74	30.5
2002	0.0	23.9	0.1	4.87	38.3
2003	0.8	22.3	3.9	6.60	39.9
2004	1.8	23.5	4.1	7.61	38.8
2005	0.6	25.4	3.4	7.57	48.0
2006	0.0	22.8	0.1	4.30	36.9
2007	0.1	20.0	0.1	3.89	41.8
2008	0.3	20.2	2.0	5.18	39.7
2009	0.0	18.7	0.2	3.46	32.1
2010	0.0	15.2	0.0	2.98	35.1
2011	0.0	13.3	0.0	2.45	26.5
2012	0.0	6.8	0.1	1.32	36.9

Table 5. Postseason Natural Mortality for MD539_10.GN1 03/02/2012 06:39 am

Bio-Year	Sub-Adults	Adult Males	Adult Females	Total	% of Pop
2000	3183	533	1987	5704	38.7
2001	1194	207	609	2011	17.5
2002	1865	267	807	2939	23.1
2003	1835	264	761	2860	22.6
2004	1347	230	661	2238	18.9
2005	795	161	485	1441	13.0
2006	1967	259	853	3079	23.5
2007	1984	269	862	3114	22.9
2008	2199	338	1034	3571	26.4
2009	2890	348	1065	4303	30.5
2010	2172	355	1053	3580	28.2
2011	1639	245	729	2613	21.4
2012	1908	313	791	3012	22.5

Table 6. Preseason Ratios for MD539_10.GN1 03/02/2012 06:39 am

Bio-Year	Subadults /100 1+F	2+ Males /100 1+F	Yr. Males /100 1+F	Ad Males /100 1+F
2000	69.5	26.2	16.2	42.4
2001	53.3	29.8	11.9	41.6
2002	63.0	26.2	14.8	41.0
2003	60.1	24.5	14.8	39.3
2004	49.7	25.2	14.5	39.8
2005	40.7	25.8	13.2	39.0
2006	64.0	24.7	13.1	37.8
2007	62.0	23.0	15.0	38.0
2008	55.4	24.3	14.6	38.9
2009	69.7	26.2	11.2	37.4
2010	51.0	24.5	12.0	36.5
2011	55.2	26.2	8.6	34.7
2012	62.3	24.6	13.1	37.7

Table 7. Postseason Ratios for MD539_10.GN1 03/02/2012 06:39 am

Bio-Year	Subadults /100 1+F	2+ Males /100 1+F	Yr. Males /100 1+F	Ad Males /100 1+F
2000	69.6	22.0	11.5	33.5
2001	53.4	22.9	8.8	31.7
2002	63.1	19.6	10.7	30.2
2003	62.3	19.6	11.4	31.0
2004	51.0	19.8	11.1	30.9
2005	42.1	20.9	8.3	29.2

2006	64.1	18.7	9.6	28.4
2007	62.0	18.2	11.5	29.7
2008	56.4	19.6	11.4	30.9
2009	69.8	21.0	8.8	29.8
2010	51.0	20.5	9.9	30.4
2011	55.2	22.4	7.2	29.7
2012	62.4	22.8	12.0	34.9

Table 8. End of Year Ratios for MD539_10.GN1 03/02/2012 06:39 am

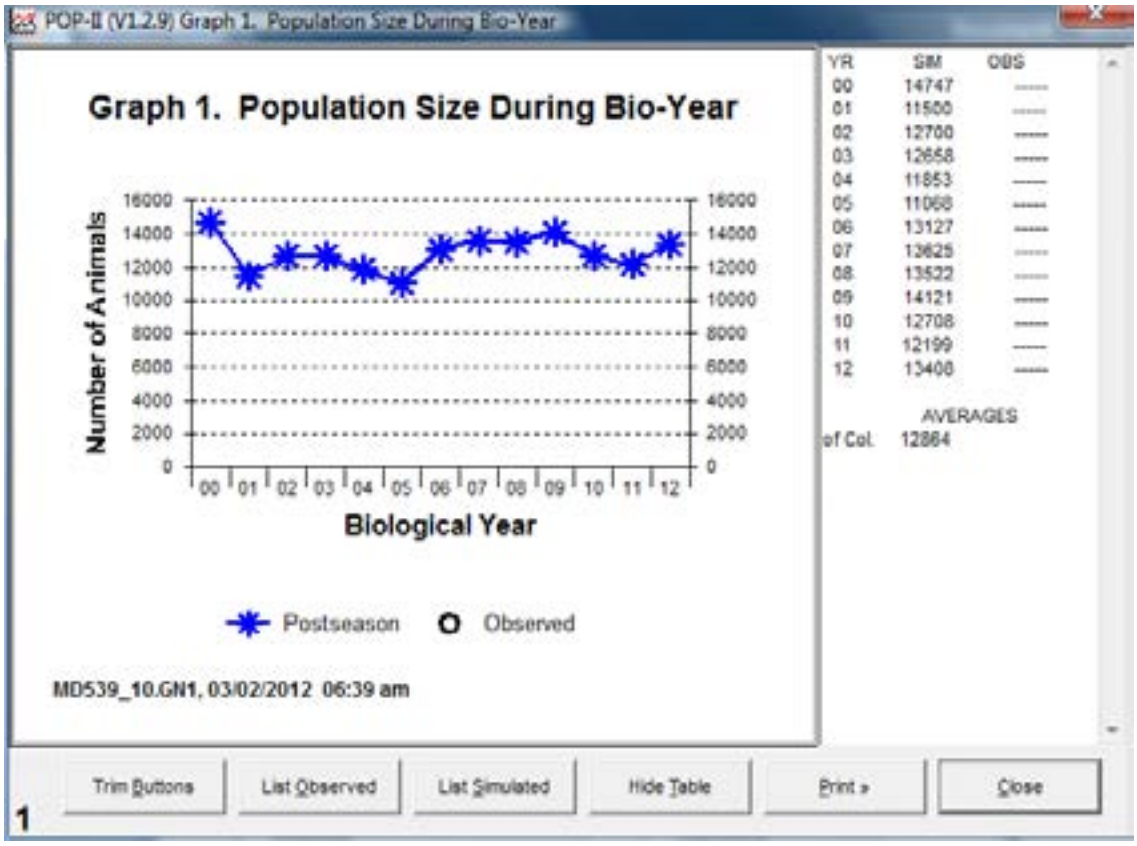
Bio-Year	Subadults /100 Adlts	Subadults /100 1+F	Yr. Males /100 1+F	Ad Males /100 1+F
2000	26.1	35.4	13.6	36.0
2001	28.8	37.9	9.0	31.5
2002	30.5	39.5	10.9	29.8
2003	29.7	38.8	11.7	30.6
2004	25.9	33.8	11.2	30.4
2005	25.0	32.2	8.4	28.8
2006	31.5	40.3	9.9	28.1
2007	30.0	38.8	11.8	29.5
2008	23.2	30.3	11.7	30.7
2009	26.4	34.1	9.0	29.3
2010	18.2	23.6	10.1	29.8
2011	26.4	34.1	7.3	29.2
2012	28.9	38.8	12.3	34.3

Table 9. Reproduction at Start of Bio-Year for MD539_10.GN1 03/02/2012 06:39 am

Bio-Year	Young / 100 AF 1 +	Sub-Ad. / 100 AF 1 +	Total Young	Total Sub-Adult	Total Females 1 +
2000	127	127	9444	9444	7411
2001	140	140	8965	8965	6385
2002	142	142	9525	9525	6731
2003	140	140	9798	9798	7006
2004	140	140	9837	9837	7010
2005	144	144	9953	9953	6919
2006	146	146	10165	10165	6985
2007	139	139	10146	10146	7280
2008	140	140	10617	10617	7568
2009	145	145	10511	10511	7242
2010	142	142	10215	10215	7195
2011	149	149	10118	10118	6774
2012	143	143	9978	9978	6962

Table A. Intra-Annual Natural Survival(%) for MD539_10.GN1 03/02/2012 06:39 am

Bio-Years	Sub Adults	Adult Males	Adult Females	Overall Survival
2000-2001	36.07	76.11	70.80	59.78
2001-2002	62.55	87.45	88.15	80.65
2002-2003	53.72	84.53	85.69	75.08
2003-2004	53.56	84.74	86.06	75.38
2004-2005	57.77	85.99	87.25	78.77
2005-2006	69.14	89.35	90.39	85.00
2006-2007	53.76	84.66	85.51	74.81
2007-2008	53.65	85.12	85.71	75.25
2008-2009	45.02	83.05	83.86	72.03
2009-2010	40.42	81.32	82.74	67.72
2010-2011	38.25	81.17	82.80	69.99
2011-2012	53.73	85.47	86.91	76.77


POP-II (V1.2.9) Graph 1. Population Size During Bio-Year
Graph 1. Population Size During Bio-Year
Number of Animals
Biological Year
Postseason
Observed
MD539_10.GN1, 03/02/2012 06:39 am
YR SIM OBS
00 14747 -----
01 11500 -----
02 12700 -----
03 12658 -----
04 11853 -----
05 11068 -----
06 13127 -----
07 13625 -----
08 13522 -----
09 14121 -----
10 12708 -----
11 12199 -----
12 13400 -----
AVERAGES
of Col. 12864
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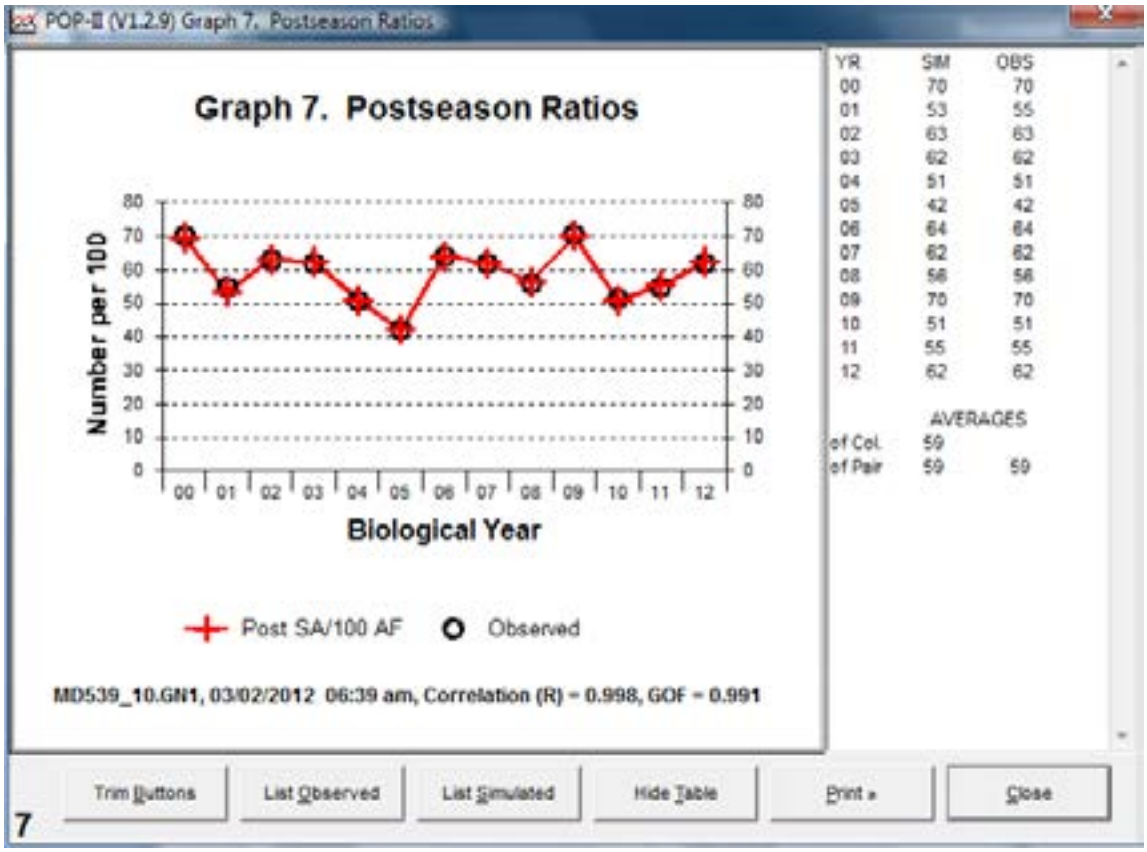
POP-II (V1.2.9) Graph 7. Postseason Ratios
Graph 7. Postseason Ratios
Number per 100
Biological Year
Post SA/100 AF
Observed
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YR SIM OBS
00 70 70
01 53 55
02 63 63
03 62 62
04 51 51
05 42 42
06 64 64
07 62 62
08 56 56
09 70 70
10 51 51
11 55 55
12 62 62
AVERAGES
of Col. 59
of Pair 59 59
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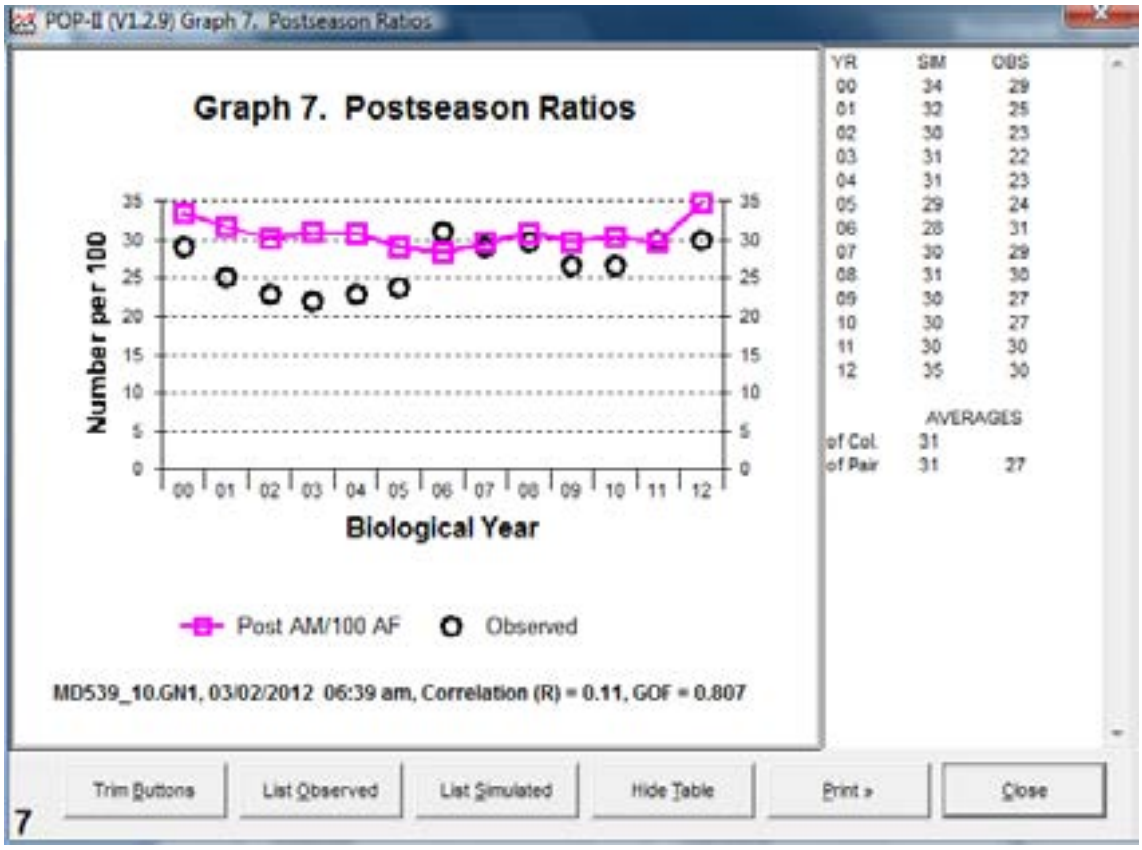
POP-II (V1.2.9) Graph 7. Postseason Ratios
Graph 7. Postseason Ratios
Number per 100
Biological Year
Post AM/100 AF
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01 32 25
02 30 23
03 31 22
04 31 23
05 29 24
06 28 31
07 30 29
08 31 30
09 30 27
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11 30 30
12 35 30
AVERAGES
of Col. 31
of Pair 31 27
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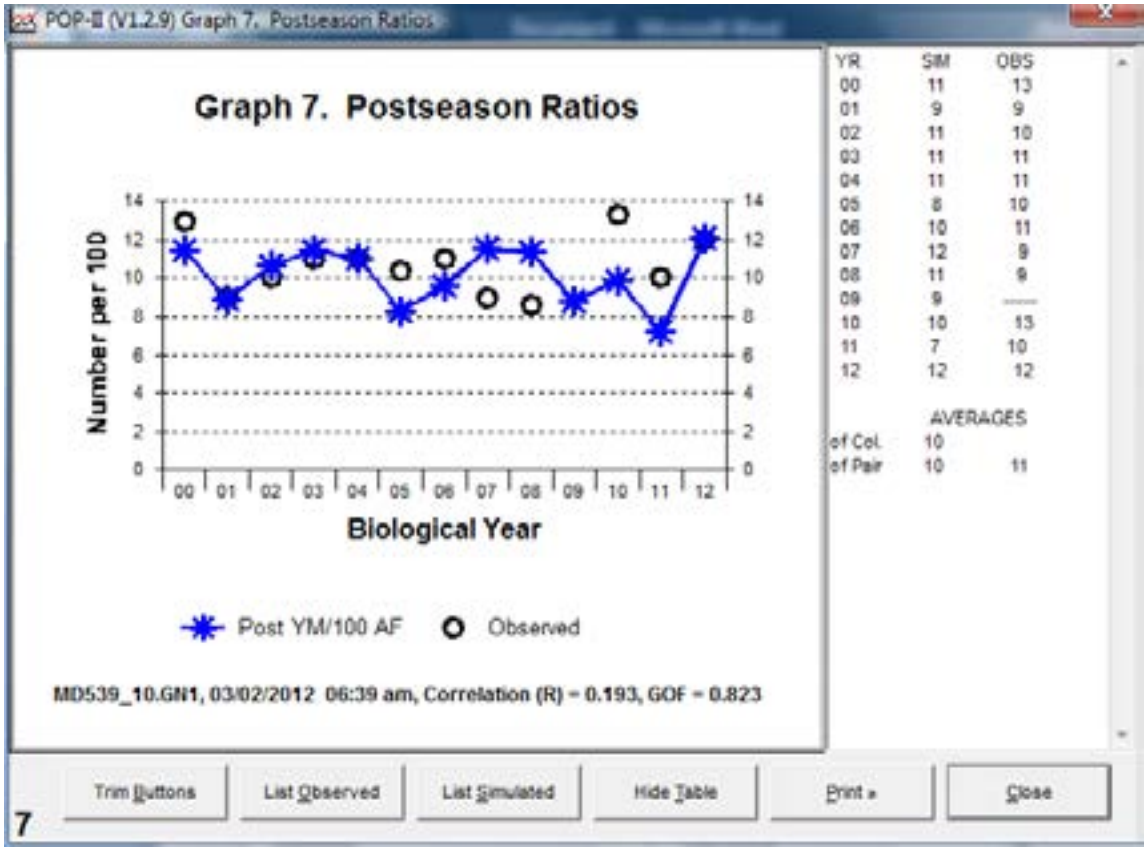
POP-II (V1.2.9) Graph 7. Postseason Ratios
Graph 7. Postseason Ratios
Number per 100
Biological Year
Post YM/100 AF
Observed
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01 9 9
02 11 10
03 11 11
04 11 11
05 8 10
06 10 11
07 12 9
08 11 9
09 9 ----
10 10 13
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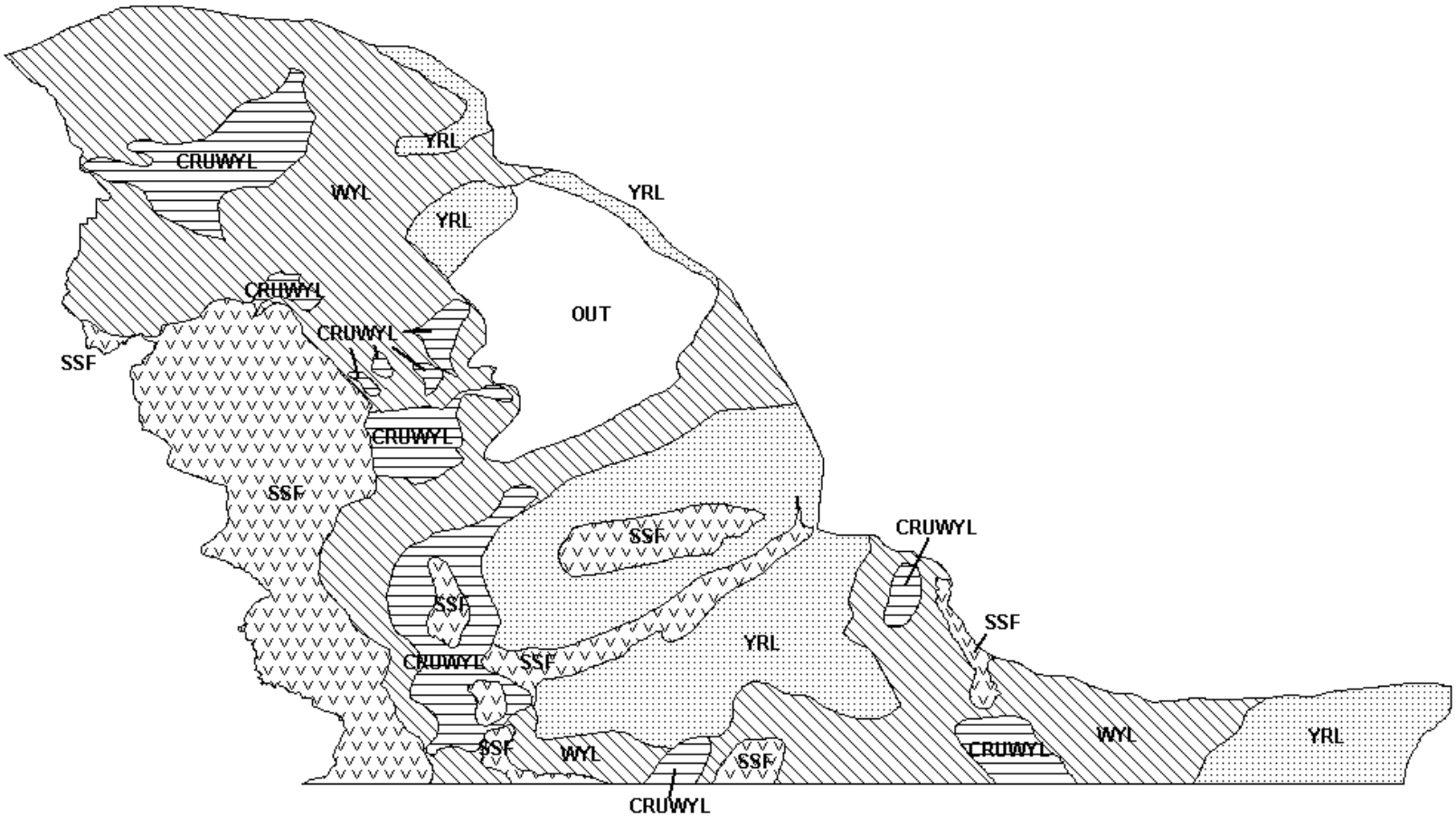


Mule Deer (MD539) - Sheep Mountain
HA 61, 74-77
Revised - 8/88

2011 - JCR Evaluation Form

SPECIES: Mule Deer | PERIOD: 6/1/2011 - 5/31/2012

HERD: MD540 - SHIRLEY MOUNTAIN

HUNT AREAS: 70 | PREPARED BY: WILL SCHULTZ

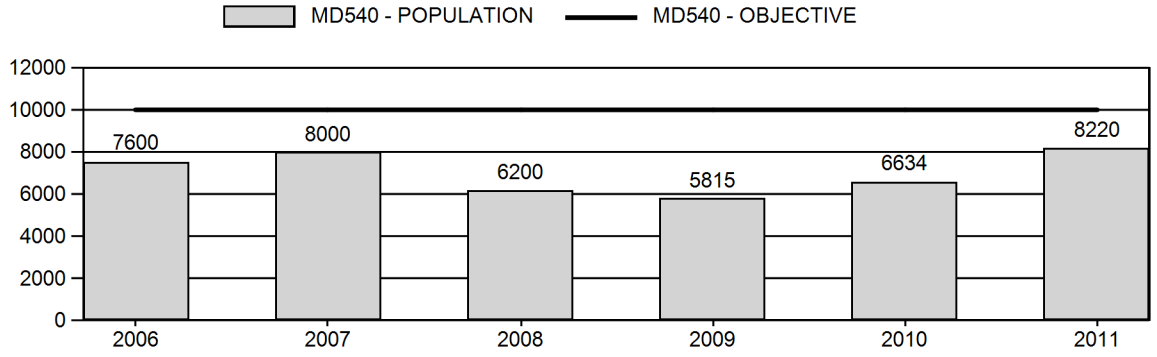
	2006 - 2010 Average	2011	2012 Proposed
Population:	6,850	8,220	8,288
Harvest:	461	353	300
Hunters:	850	806	800
Hunter Success:	54%	44%	38%
Active Licenses:	877	812	800
Active License Percent:	53%	43%	38%
Recreation Days:	3,220	3,657	3,500
Days Per Animal:	7.0	10.4	11.7
Males per 100 Females	27	41	
Juveniles per 100 Females	60	58	

Population Objective:	10,000
Management Strategy:	Recreational
Percent population is above (+) or below (-) objective:	-17.8%
Number of years population has been + or - objective in recent trend:	25
Model Date:	03/02/2012

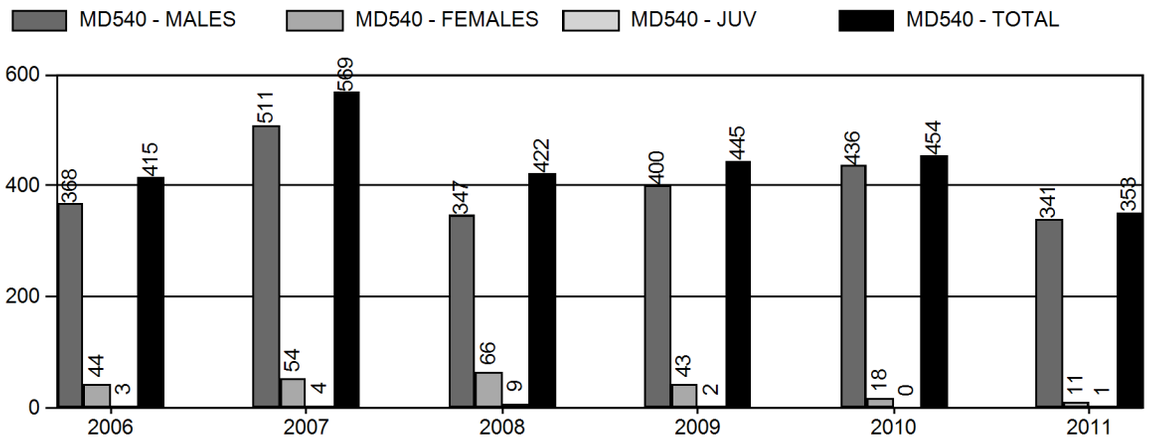
Proposed harvest rates (percent of pre-season estimate for each sex/age group):

	JCR Year	Proposed
Females ≥ 1 year old:	0.3%	0.0%
Males ≥ 1 year old:	18.1%	15.9%
Juveniles (< 1 year old):	0.0%	0.0%
Total:	5.98%	3.48%
Proposed change in post-season population:	-4.4%	-3.8%

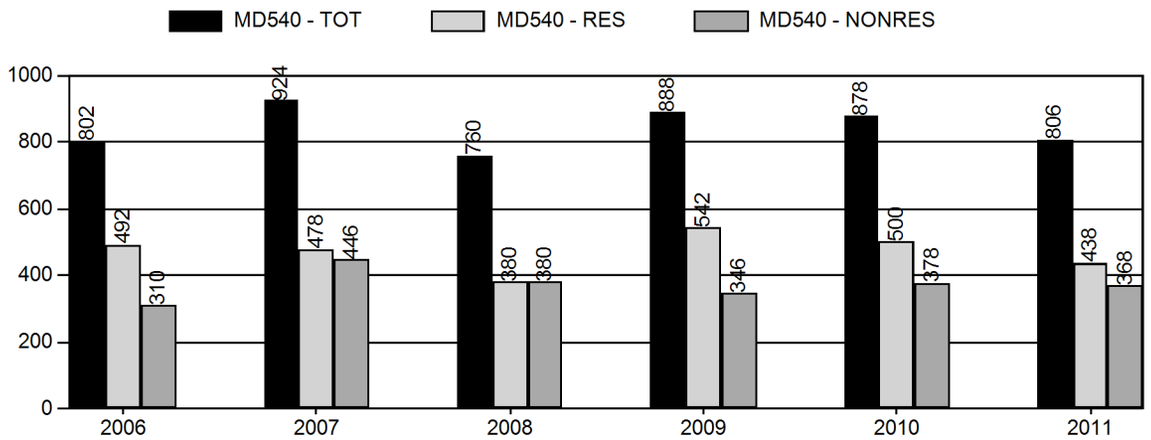
Population Size - Postseason



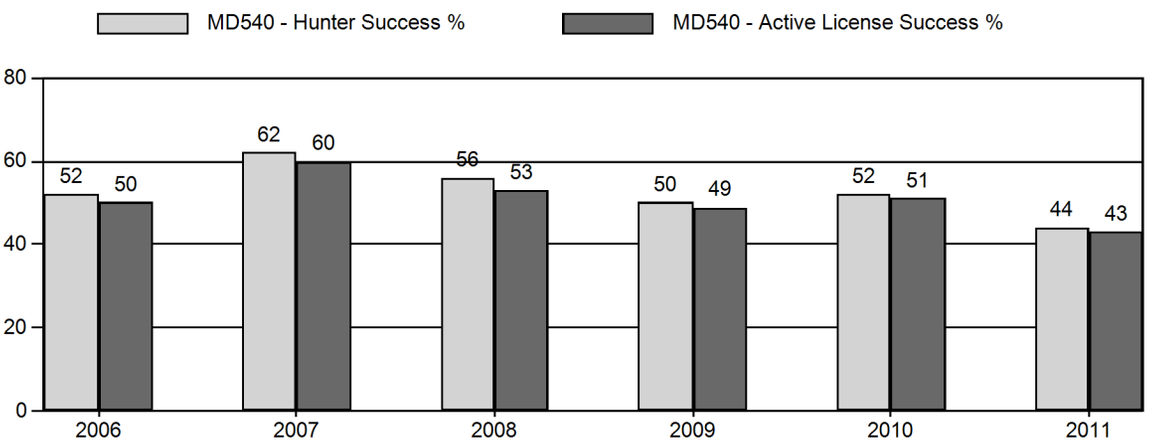
Harvest



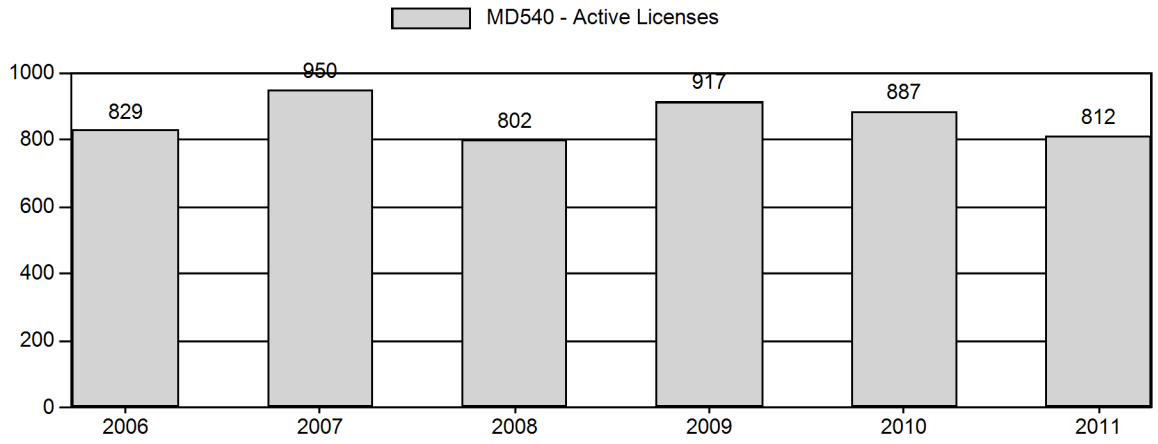
Number of Hunters



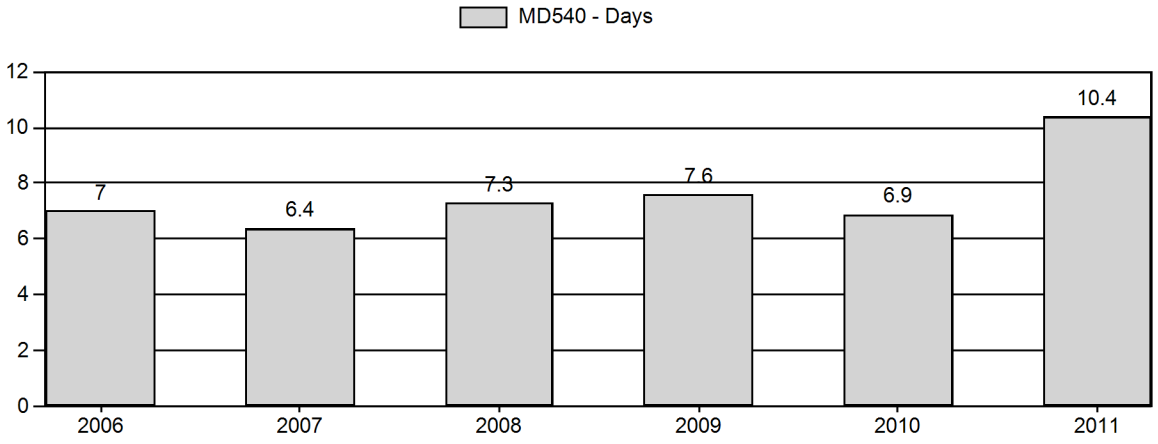
Harvest Success



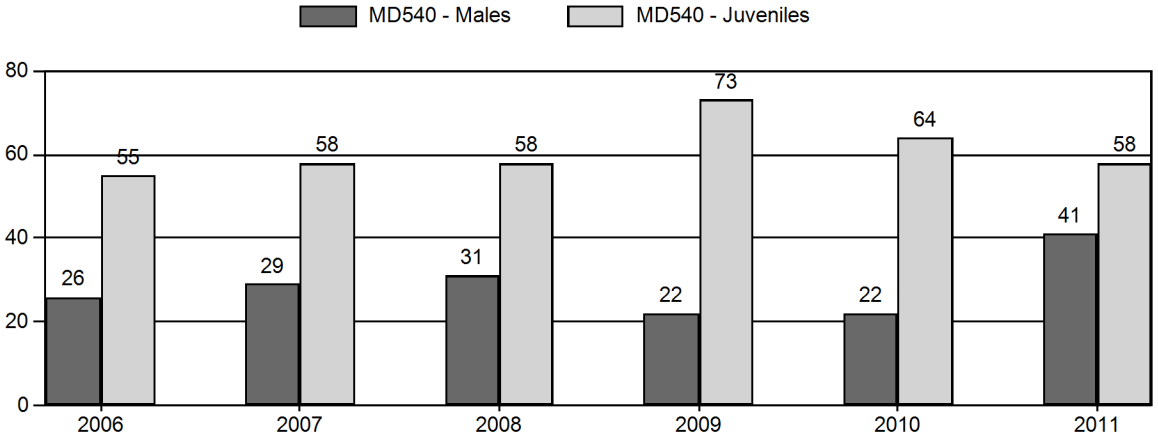
Active Licenses



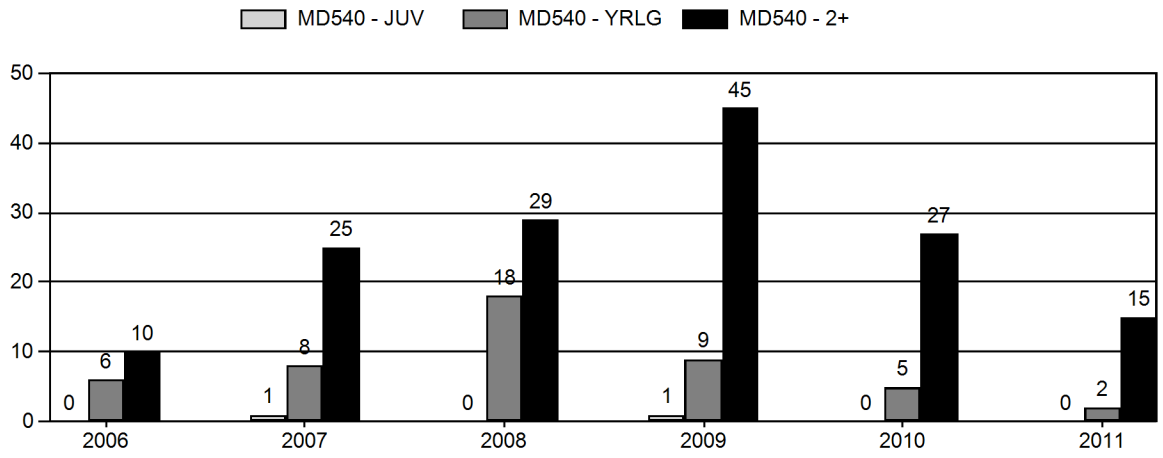
Days per Animal Harvested



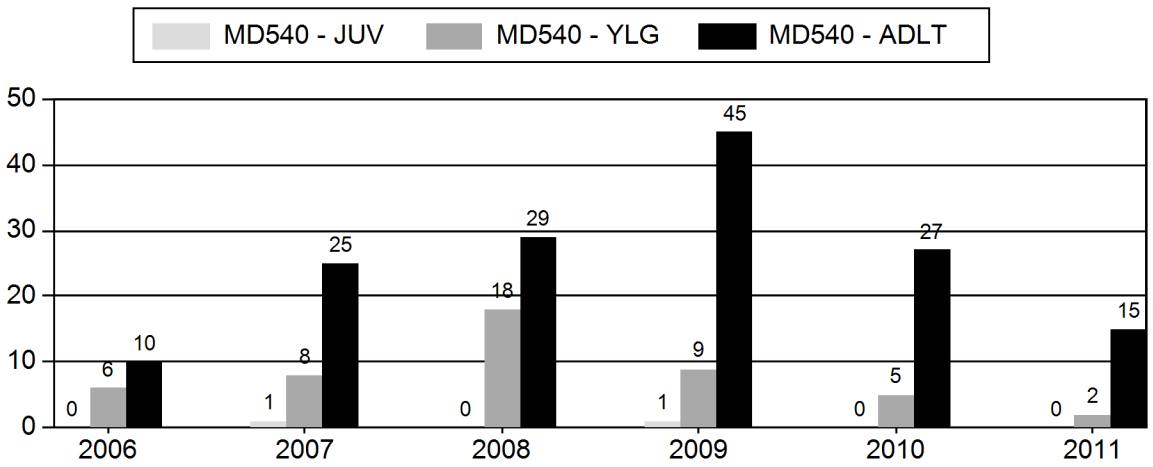
Postseason Animals per 100 Females



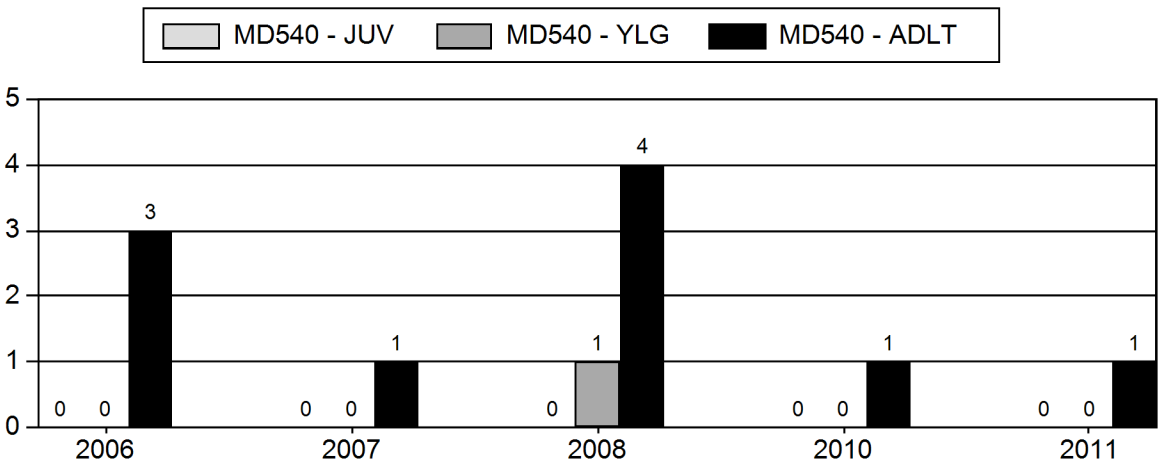
Age Structure of Field Checked Males



Age Structure Data (Field and Laboratory) - Male



Age Structure Data (Field and Laboratory) - Female



INTRODUCTION

This report focuses on the management of the Shirley Mountain Mule Deer Herd Unit (MD540) during the bio-years of 2009 through 2011. It is intended to provide the reviewer with information regarding the habitat, population and hunting status for this herd unit. Additionally, future management recommendations and the 2009 hunting season proposal for this herd unit are also included in this report.

During the period of 2006-2008 drought conditions subsided somewhat in the Shirley Mountain Mule Deer Herd Unit allowing for a slight increase in forage production for most shrub communities within the traditional winter ranges. During this period, the estimated postseason population averaged approximately 6,890 deer. Between 2009 and 2011 hunter numbers and harvest success averaged 857 and 49% respectively. Postseason classification ratios averaged 28 bucks and 65 fawns per 100 does from surveys with less than adequate sample sizes. Surveillance for Chronic Wasting Disease (CWD) continued with limited sampling effort and a low prevalence rate (3.9%) was observed. The construction of a wind farm occurred with more wind energy development being proposed within this herd unit and the surrounding areas.

BACKGROUND

The Shirley Mountain Mule Deer Herd Unit consists of Hunt Area 70, which lies north of U. S. Highway 30, west of Wyoming Highway 487 and east of the North Platte River. Hunt Areas 70, 71, and 72 were combined into Hunt Area 70 in 1999. The eastern boundary of this herd unit and the Region D boundary were changed from the Fetterman Road to Highway 487 in 1999. The Herd contains the Shirley, Bennett (Seminoe), Freezeout, and Pedro Mountains. Elevation ranges from approximately 5,900 feet to over 8,800 feet. Habitats include montane forests (primarily lodgepole pine), aspen, mountain shrub, sagebrush-grasslands, grasslands, riparian, agricultural croplands, and reclaimed mine lands. Topographic relief can be dramatic and can offer quality hiding and escape terrain for mule deer.

The Shirley Mountain Herd Unit encompasses 1,442.6 square miles of occupied mule deer habitat. Land ownership consists of 48% private, 9% state lands, and 43% mixed federal lands, primarily BLM lands managed by the Rawlins Field Office. The southern half of the herd unit is mostly a checkerboard of private, state, and BLM lands as a result of land grants to railroads in the 1800's. The northern half contains more single owner blocks of land with large areas of accessible public land. In recent years, one ranch corporation has purchased an extensive amount of private land in and around the Shirley Mountains, and controls access to a substantial amount of the mule deer habitat.

The population objective for the Shirley Mountain herd unit is 10,000 mule deer. A recreational management strategy has been prescribed for this herd unit. This strategy attempts to maintain postseason buck ratios at 20-29 bucks per 100 does (WGFD 2007).

Past management of this herd has been inconsistent (WGFD 2005). Management fluctuated between attempting to increase deer numbers and then trying to reduce deer causing damage to alfalfa crops. Most landowners, including several who sustain damage, as well as the general public, would like to see deer numbers increase for this herd unit. Some landowners support point restriction or limited quota season strategies. This population has declined in recent years due to reduced fawn production and recruitment. Restrictive seasons have been recommended to allow habitat conditions, fawn production, and natural mortality to determine the increase of this herd towards objective. However, old aged browse strands,

drought and foraging pressure from other herbivores raise concern over the habitat's long term ability to sustain higher numbers of deer.

The Nonresident Region D boundary was modified in 2006 to exclude the west slope of the Sierra Madres. This action was made in response to hunter crowding issues on the west side of the Continental Divide. This change has resulted in an increase in the number of nonresident Region D hunters that have chosen to hunt in the Shirley Mountain Herd Unit.

WEATHER

Weather data for Upper Platte Climatic Division 10 which is normally appended to this report was unavailable this year. Generally, precipitation increased during this period. The average high temperatures also increased. Severe winter weather was experienced in this area during the winter of 2010-2011, and may have negatively influenced over-winter survival for mule deer.

HABITAT CONDITIONS

Production/utilization transects data for this herd unit which is normally appended to this report was unavailable this year. The Habitat Branch has established 3 production/utilization transects to represent 1,442.6 square miles of occupied mule deer habitat in this herd unit. The limited production/utilization data available for this herd unit limits any inferences regarding the condition status of the Shirley Mountain Herd Unit habitat. Generally, production improved slightly during this period due to an increase in precipitation. Utilization still appeared to be excessive due to high densities of mule deer and other ungulates in the vicinity of the production/utilization transects.

POPULATION

CLASSIFICATION DATA

Observed buck ratios increased over the 2009-2011 period (Figure 1). The postseason fawn ratio increased in 2009 and 2010, and then declined in 2011. The winter of 2010-2011 was quite severe in much of this herd unit and may have contributed to reducing fawn ratios in 2011 back to the high fifties observed during the last decade.

Postseason classifications were conducted from the ground during this period. Since the same personnel conducted the surveys for the period of 2009-2011 as in the past reporting period, it could be assumed that the knowledge of deer distribution should have resulted in a similar sample sizes for 2009-2011. However, although deer distribution appeared similar to that observed during the 2006-2008 surveys, observations of individual group sizes were noticeably smaller in 2009 through 2011. Again, these smaller sample sizes were attributed to a decrease in the population due to reduced over-winter survival due to winter severity.

The classifications surveys prior to 2005 were conducted from the ground with very inadequate sample sizes being collected (Table1). The 2005 classification survey was conducted from a helicopter with a better sample size being obtained. Postseason classifications were again conducted from the ground in late November for the period of 2006-2008. Overall, sample sizes were improved even more during this period. However, the sample sizes were still below the classification objective required for an adequate sample at the 80% confidence level. During the 2009-2011 period this trend in below adequate sample sizes continued.

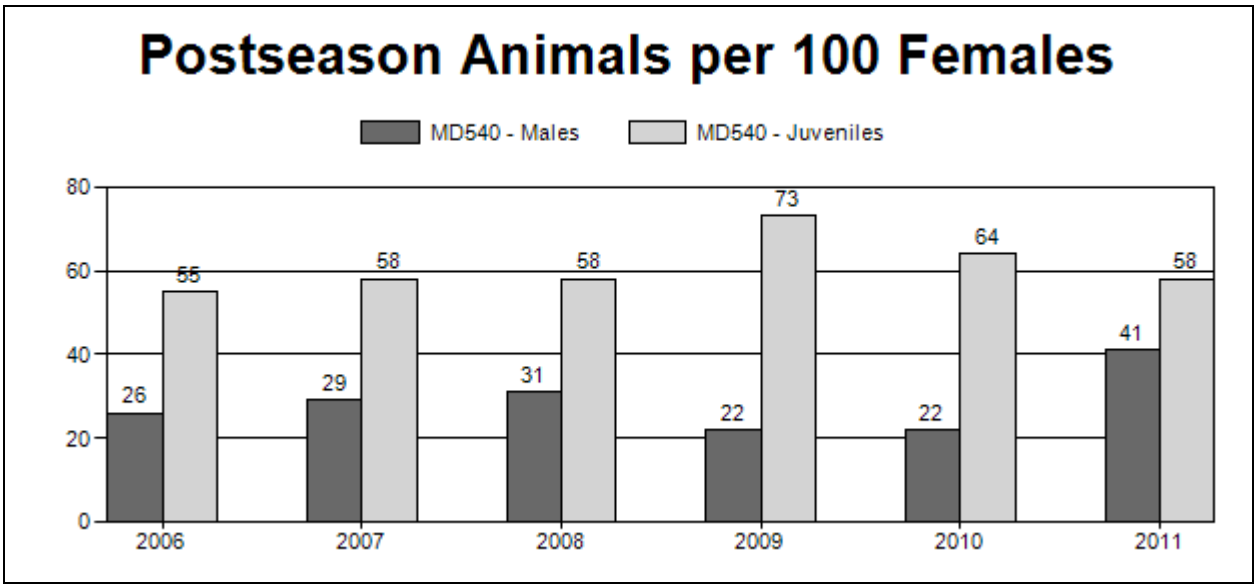


Figure 1. Shirley Mountain Mule Deer Postseason Animals per 100 Female, Wyoming, 2006-2011.

2006 - 2011 Postseason Classification Summary
for Mule Deer Herd MD540 - SHIRLEY MOUNTAIN

		MALES				FEMALES		JUVENILES				Males to 100 Females				Young to		
Year	Post Pop	Ylg	Adult	Total	%	Total	%	Total	%	Tot Cls	Cls Obj	Ylng	Adult	Total	Conf Int	100 Fem	Conf Int	100 Adult
2006	7,600	48	68	116	14%	454	56%	248	30%	818	884	11	15	26	± 3	55	± 5	44
2007	8,000	45	74	119	15%	410	53%	239	31%	768	995	11	18	29	± 4	58	± 6	45
2008	6,200	26	60	86	17%	276	53%	159	31%	521	963	9	22	31	± 5	58	± 7	44
2009	5,815	10	38	48	11%	216	51%	157	37%	421	913	5	18	22	± 4	73	± 9	59
2010	6,634	24	18	42	12%	190	54%	122	34%	354	958	13	9	22	± 5	64	± 9	53
2011	8,220	29	37	66	20%	162	50%	94	29%	322	1,079	18	23	41	± 7	58	± 9	41

Table 1. Shirley Mountain Mule Deer Postseason Summary, Wyoming, 2006-2011.

POPULATION MODELING

The lack of adequate classification sample sizes and harvest information for this herd unit has hindered the ability of managers to develop POP-II population models that provide consistent trends between the observed and simulated ratios. Because the classification data collected prior to 2005 was derived from very small sample sizes, a revised POP-II simulation has been developed excluding these earlier data in an attempt to produce a simulation that is uninfluenced by the extreme swings in observed values during the earlier portion of this decade.

The POP-II simulation presented later in this report was constructed using only the observed values for bio-years 2005 through 2011, and is projected through 2013 with those projections based on averages of the observed values from 2005-2011. Traditionally, managers have aligned the simulated fawn ratios precisely with the observed fawn ratio, and aligned the buck ratio simulation at a level well above the observed ratio. This is done because of an assumption that mature bucks will be under represented in the survey and that observers will misclassify yearlings bucks as does. However, this current model attempts to align the simulated buck ratios in close proximity to the observed values in an effort to minimize biases introduced into the model from the potential overestimation of bucks. The current model's postseason population

estimate for 2011 is higher (19%) than that produced with previous POP-II model revisions (Figure 2). The 2011 postseason estimate of 8,220 deer is questionable. Fewer deer are observed in this herd unit than previously. However, this higher suspect estimate is required in order to simulate a population level needed to support the harvest and the subsequent ratio of bucks observed in classification for this herd unit.

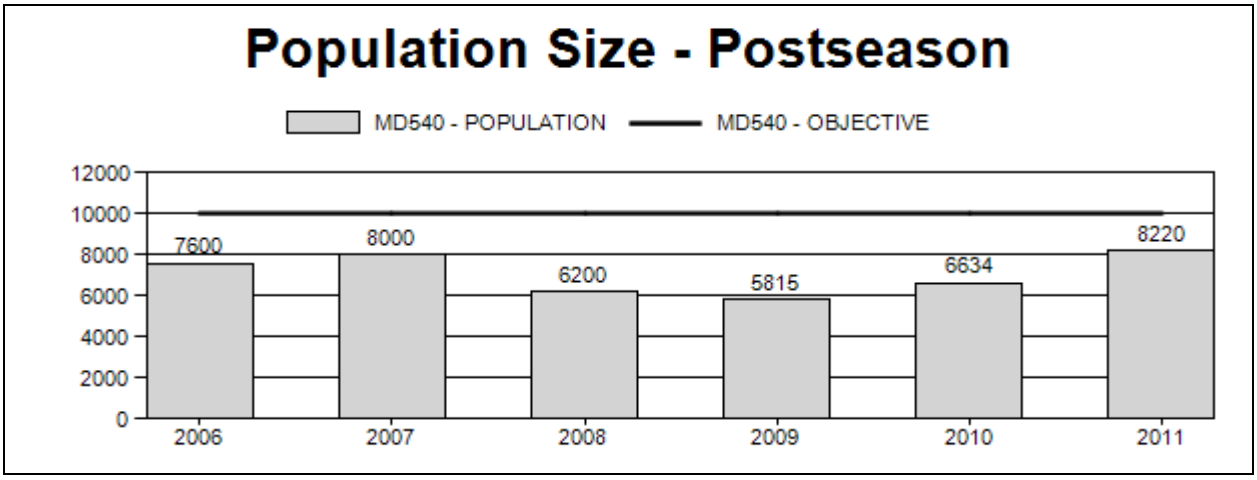


Figure 2. Shirley Mountain Mule Deer Population Size - Postseason, Wyoming, 2006-2011.

HUNTING SEASON

The 2011 hunting season structure is described in Figure 3.

2011 HUNTING SEASONS

MD540 - SHIRLEY MOUNTAIN

Hunt Area	Add'l Hunt Areas	Type	Quota	Season Dates	Limitations
70		GEN		10/15 - 10/21	antlered mule deer or any white-tailed deer
70		Type 6	25	10/15 - 11/30	valid on private land

Figure 3. Shirley Mountain Mule Deer 2011 Hunting Season, Wyoming.

HARVEST

Antlered only General hunting seasons have been implemented the Shirley Mountain herd unit since 1994. In 2004, antlerless harvest was re-instituted for the first time since the 1993 season with the issuance of a reduced price doe or fawn license type. This license continued to be offered through the period of 2009-2011. The doe/fawn harvest was focused locally, by limitation, in the Leo area to reduce depredation on alfalfa crops and to improve shrub health in the Sage Creek basin.

HUNTER STATISTICS

As illustrated in Figure 3, hunters harvested 400, 436 and 341 bucks during the hunting seasons of 2009, 2010 and 2011 respectively. The harvest of 341 bucks in 2011 was the lowest number reported in this herd unit since 2005. In Table 2, the difference between the numbers listed in the Licensed Hunters column and

the numbers listed in parentheses in the following column represented the number of hunters who actually hunted both the General season and also hunted in the doe/fawn season. Figure 4 illustrates the active licensed hunter numbers for this herd unit. For years 2006-2011, the number of Active Licenses increased slightly over the Hunter numbers because many of the General licensed hunters also hunted with reduced priced doe/fawn licenses in this herd unit.

Since 2006 the number of nonresident Region D Licensed hunters that chose to hunt in this herd unit remained fairly consistent in proportion to the resident hunter numbers (Figure 5). The overall quota for nonresident hunters in Region D was reduced from 2,500 licenses in 2008, to 2,200 in 2009, and to 2,100 in 2010.

General license harvest success for bucks has typically been good in this herd unit. During the past 3 years buck harvest has ranged from a low of 43% in 2011 to the high of 51% in 2010 (Figure 6). Harvest success for the reduced price doe/fawn license was approximately 60%, which is typical for this license type. Although the doe/fawn harvest has not significantly impacted the overall population of this herd unit, it has aided in reducing damage to alfalfa crops and appeasing the landowners in the Leo area.

The hunting season length was 11 days in 2009; 8 days in 2010; and 7 days in 2011. This reduction in days was implemented to reduce overall buck harvest. The days per animal harvested increased in 2011 to a high of 10.3 days (Figure 7). This was attributed to not only an assumed lower over-winter survival in 2010-2011, but also to very mild harvest conditions.

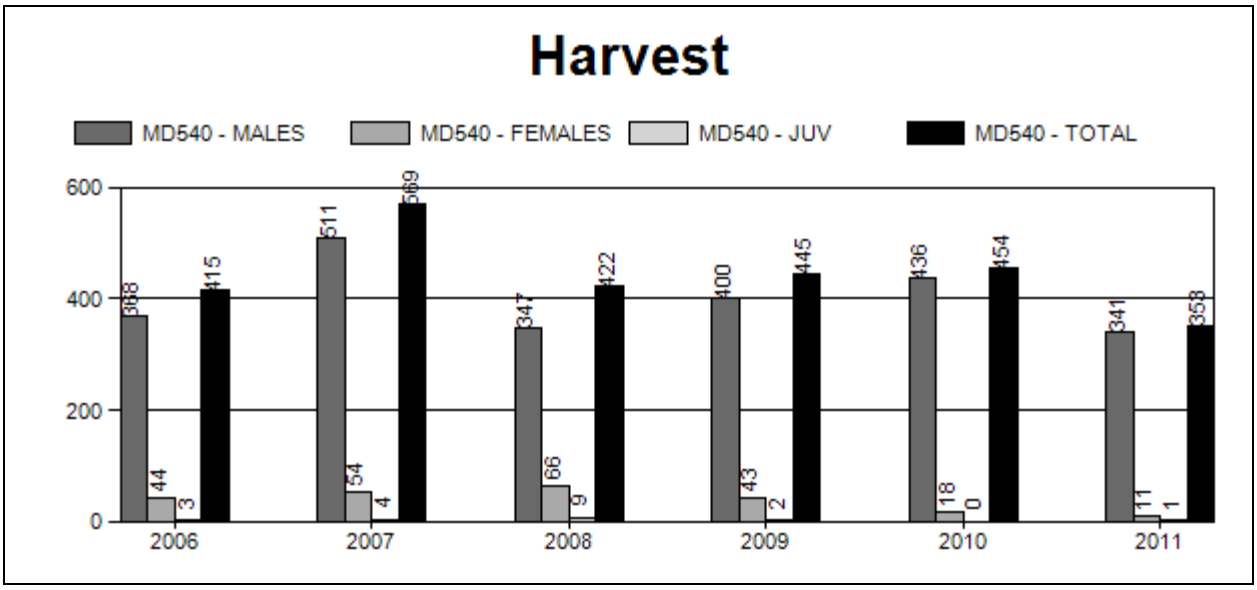


Figure 4. Shirley Mountain Mule Deer Harvest, Wyoming, 2006-2011.

Area	Type	Active Lic/Htrs		Buck	Doe	Fawn	Total	Success		Days/ Harvest	Days	Licenses Sold
2011												
70 SHIRLEY MOUNTAIN												
	General	799		341	0	0	341	42.7%		10.7	3637	
	Type 6	13		0	11	1	12	92.3%		1.7	20	25
Pooled Total		806	(812)*	341	11	1	353	43.8%	(43.5%)*	10.4	3657	
Pooled Resident		438		143	11	1	155	35.4%		11.9	1852	
Pooled Nonresident		368		198	0	0	198	53.8%		9.1	1805	
2011 Hunt Area Total		806	(812)*	341	11	1	353	43.8%	(43.5%)*	10.4	3657	25

*Active Licenses

Table 2. Shirley Mountain Mule Deer Harvest by Hunt Area Summary, Wyoming, 2011.

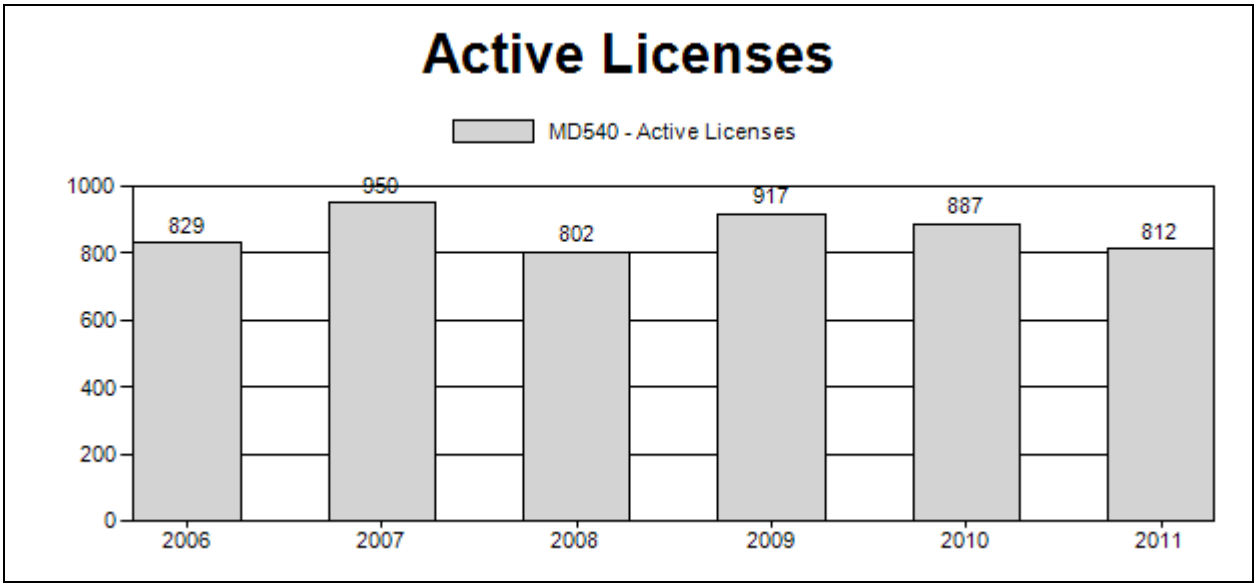


Figure 5. Shirley Mountain Mule Deer Active Licenses, Wyoming, 2006-2011.

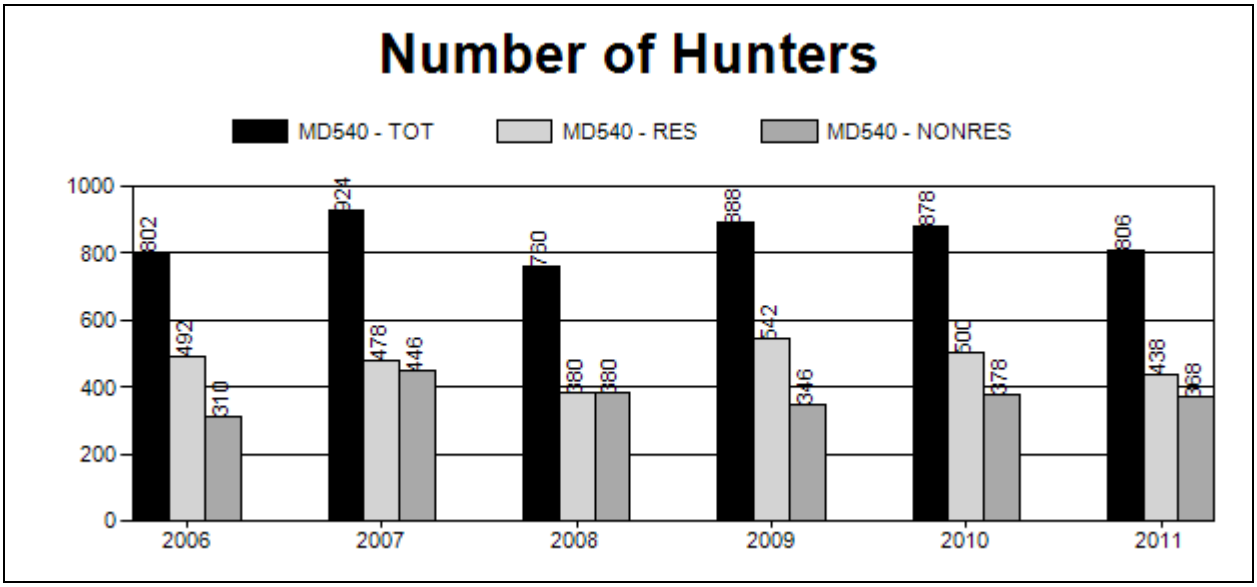


Figure 6. **Shirley Mountain Mule Deer Number of Hunters, Wyoming, 1999-2008.**

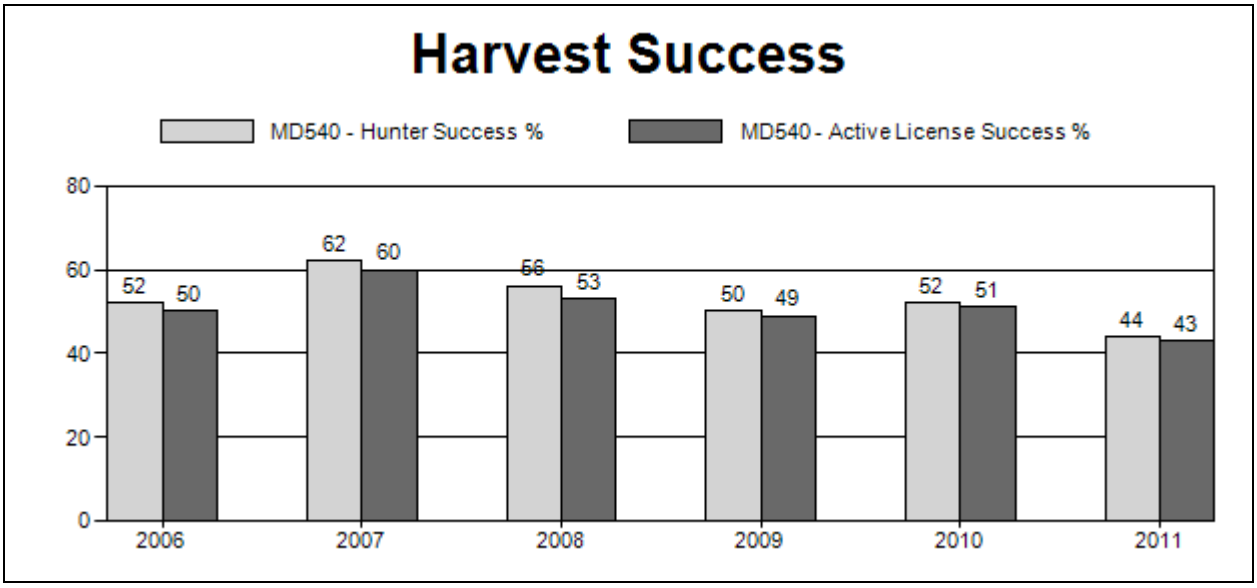


Figure 7. **Shirley Mountain Mule Deer Harvest Success, Wyoming, 2006-2011.**

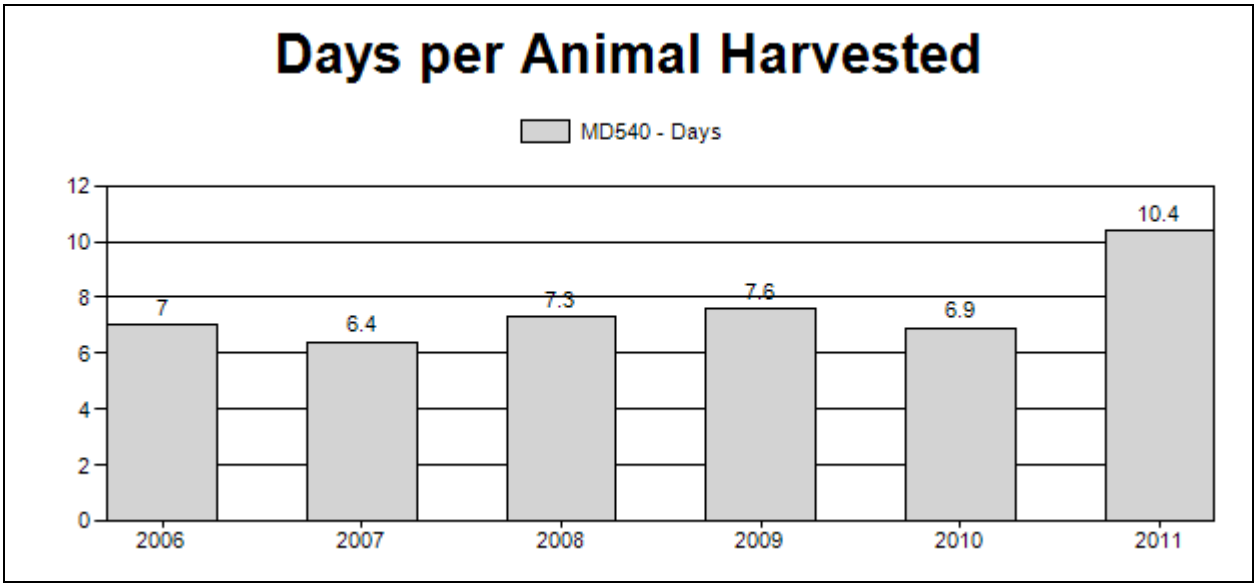


Figure 8. Shirley Mountain Mule Deer Days Per Animal Harvested, Wyoming, 2006-2011.

HUNTER FIELD CHECKS

Figures 8 and 9 indicate that all age structure data for males was collected from field checks. The highest percentage (10%) of total buck harvest checked for age occurred in 2009 and can be directly attributed to setting up a temporary check station in Medicine Bow in an effort to increase CWD surveillance in this area. Otherwise field check efforts in this herd unit have been poor. Figure 10 indicates female deer were seldom checked in this herd unit. Despite the poor sample sizes reported, yearling buck harvest appeared to be consistent with other herd units in Wyoming with similar postseason fawn ratios. Since the age data presented in this report is not specific beyond the age of 1 year, no inferences about the adult age structure for deer harvested in this herd unit can be determined.

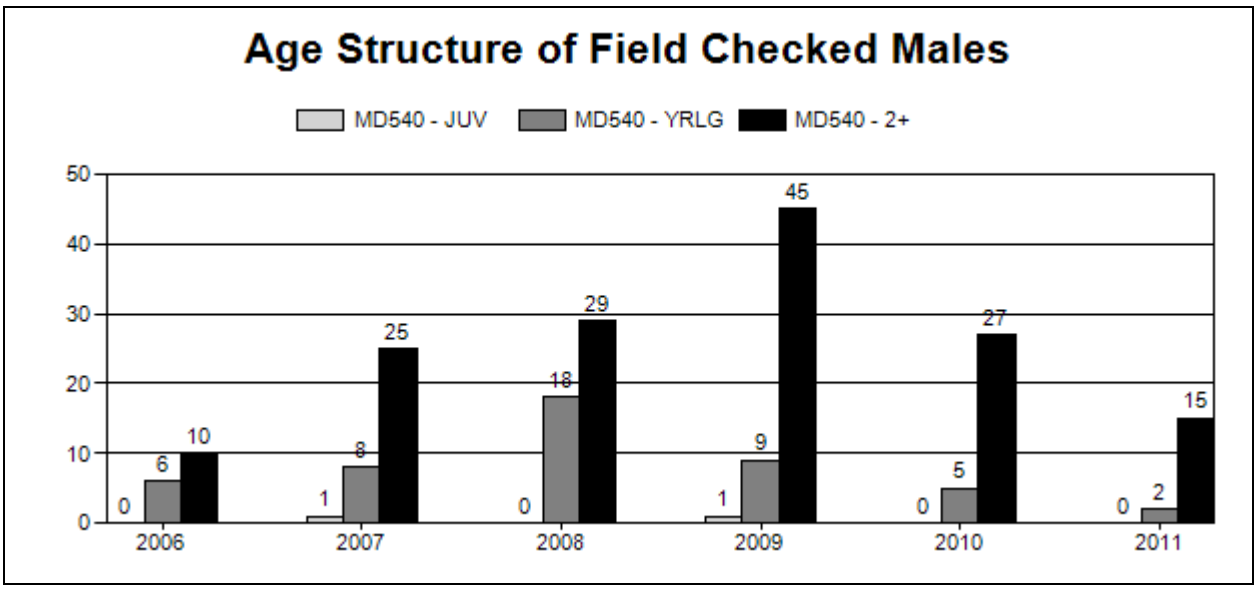


Figure 9. Shirley Mountain Mule Deer Age Structure of Field Check Males, Wyoming, 2006-2011.

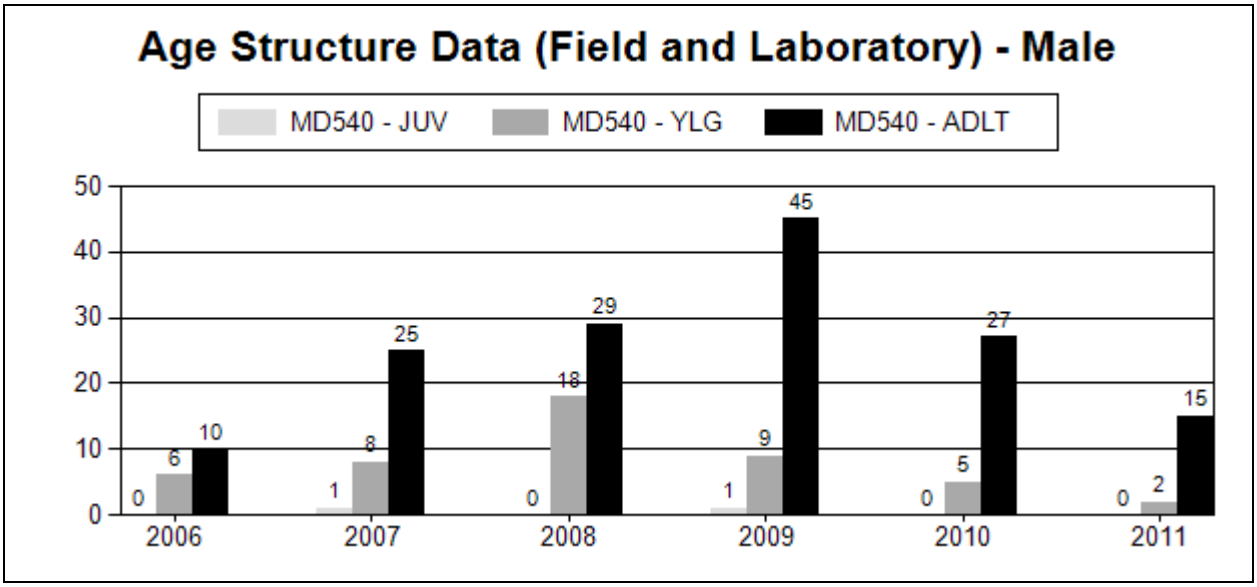


Figure 10. Shirley Mountain Mule Deer Age Structure Data (Field and Laboratory) - Male, Wyoming, 2006-2011.

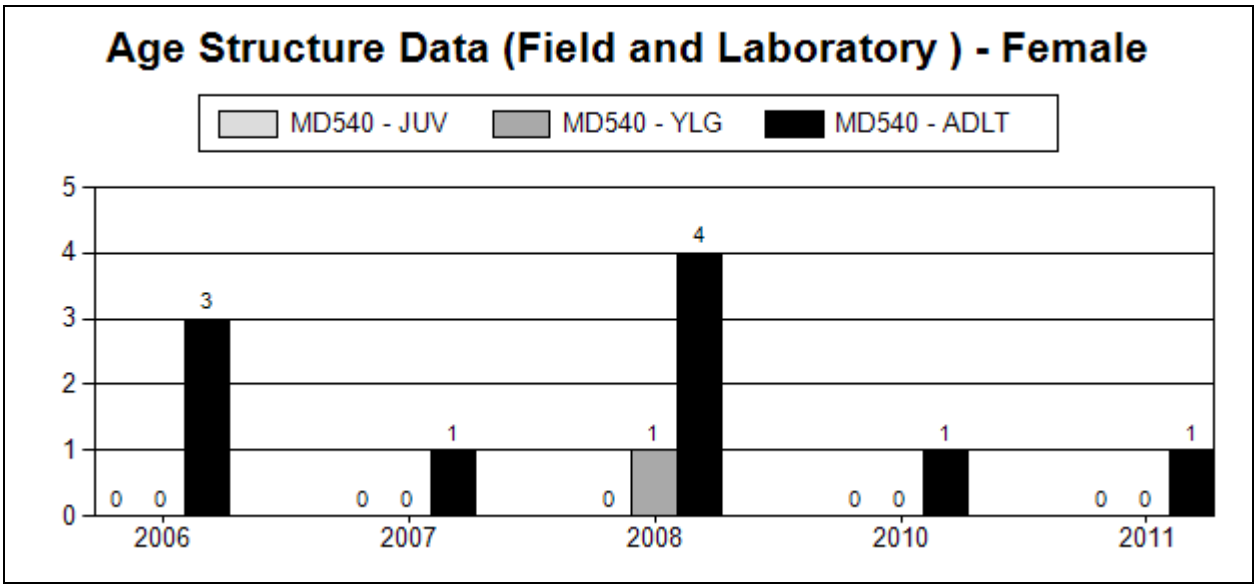


Figure 11. Shirley Mountain Mule Deer Age Structure Data (Field and Laboratory) - Female, Wyoming, 2006-2011.

OTHER MANAGEMENT ISSUES

Since 1999, CWD surveillance efforts have resulted in 284 mule deer from this herd unit being tested for the disease. CWD was first detected in this herd unit in 2003. Of those 284 deer that were tested, 11 were positive for CWD, yielding a prevalence rate of 3.9%. In 2006, CWD was first detected in an elk from this same herd unit.

Year	Harvested Sampled	Harvested Positive	Targeted Sampled	Targeted Positive
1999	7	0	0	0
2000	3	0	0	0
2001	24	0	0	0
2002	28	0	0	0
2003	54	1	0	0
2004	24	1	0	0
2005	25	2	0	0
2006	26	0	1	1
2007	10	0	1	0
2008	19	0	1	0
2009	27	2	0	0
2010	21	3	0	0
2011	13	1	0	0
Total	**281**	**10**	**3**	**1**

Table 3. Shirley Mountain Mule Deer CWD Surveillance, Wyoming, 1999-2011.

HABITAT

ON-GOING/COMPLETED PROJECTS

No significant habitat projects occurred in this herd unit during this period.

ISSUES DISCUSSION

Habitat quality has been exacerbated by continued drought conditions sustained during this past decade. Although shrub leader growth improved during this period, heavy utilization appeared to continue on most of the preferred winter range. Elk are assumed to compete with mule deer on much of their overlapping ranges in and around the Shirley and Freezeout Mountains. Efforts have continued to reduce the Shirley Mountain Elk Herd towards their management objective but progress in accomplishing this task has been slow.

During this period, energy development in the form of wind farms began in this herd unit. The potential for wind energy in this herd unit is excellent and the future construction of additional wind farms here appears to be inevitable with several projects currently being proposed. The impacts that wind farm development, either direct or cumulative, will have on mule deer and their habitat is unknown. However, one could assume that the impacts to mule deer could be similar, and as negative, as those experienced in areas where high-density oil and gas development has occurred elsewhere in Wyoming.

MANAGEMENT RECOMMENDATIONS

1. Complete postseason classification survey using a helicopter to obtain an adequate survey sample size.

2. Implement hunting season strategies which will maintain or improve harvest success and hunter satisfaction.

3. Increase CWD surveillance in order to accurately assess the prevalence rate for this herd unit.

4. Identify and implement habitat improvement projects that benefit mule deer in this herd unit.

5. Review the management objective to better align mule deer densities with the sustainability of current habitat conditions in this herd unit.

6. Encourage land management agencies to monitor and mitigate the impacts from energy development to mule deer.

SPECIAL STUDIES

FINAL REPORTS/ON-GOING PROJECTS

(The following report was submitted to the Carbon County Predator Management District on the completion of a predator control project for the benefit of mule deer in the Shirley Mountain herd unit.)

SHIRLEY MOUNTAIN MULE DEER HERD UNIT (MD540)
MULE DEER POPULATION MONITORING SUMMARY

Date: 14 May 2010

Prepared by: Will Schultz, Saratoga District Wildlife Biologist,
Wyoming Game and Fish Department

INTRODUCTION

The Shirley Mountain Mule Deer Herd Unit (MD540) management objective has been 10,000 mule deer since 1987. In recent years, post-season population estimates for MD540 have been consistently below the management objective (Table 1.). Mule deer fawn ratios have been less than 65/100 does since 2004 (Table 1). These data indicate MD540 met the criteria established by the Wyoming Game and Fish Commission (Policy No. VII R) for consideration of predatory animal control for the benefit of wildlife.

Table 1. 2000-2009 Population estimates and post-season fawn ratios for the Shirley Mountain Mule Deer Herd Unit, Wyoming.

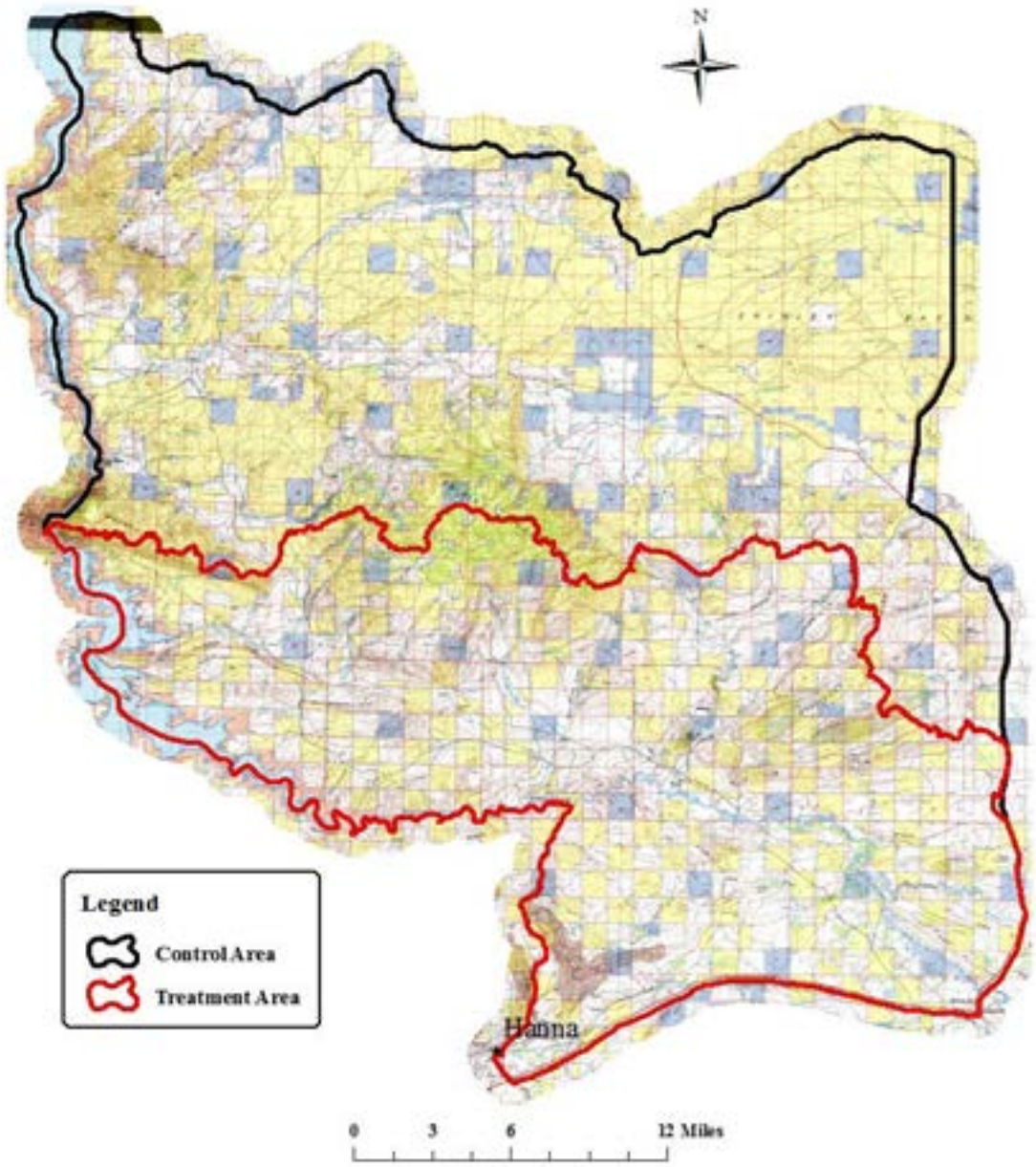
MD540	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Population Estimate	6,465	6,246	6,838	7,162	7,635	7,175	7,600	6,500	6,169	5,815
Fawns/100 Does	61	51	68	66	67	47	53	58	58	75

In February 2008, Wyoming Game and Fish Department Wildlife Biologist, Will Schultz, met with USDA/APHIS Wildlife Services' personnel, Rod Merrell, Dan Braig and Tracy Villwok to discuss the implementation of a coyote control project for the benefit of mule deer in MD540. Wildlife Services' proposed, in addition to the coyote control efforts currently implemented in MD540 for livestock protection, their agency would also implement enhanced coyote control in a portion of MD540 for the benefit of mule deer. This project would be funded through the Carbon County Predator Management District's allocation of funding to Wildlife Services for the benefit of wildlife in Carbon County. This summary was developed to provide Wildlife Services and the Carbon County Predator Management District with mule deer population data for MD540 thus far, to review with regard to their efforts of providing coyote control to benefit mule deer.

AREA

MD540 is located, east of the North Platte River and west of Wyoming Highway 487, in northeast Carbon County, Wyoming. MD540 is contained entirely within mule deer Hunt Area 70. Due to mule deer damage concerns in the northwest portion of MD540, the "treatment area" selected by Wildlife Services to perform enhanced coyote control was confined to the southern portion of the herd unit. The treatment area consists of that 441 mi^2 area in MD540 which is part of the Medicine Bow River drainage (Figure 1). The northern 568 mi^2 portion of MD540 outside the Medicine Bow River drainage was to receive no enhanced coyote control for the benefit of mule deer. However, coyote control efforts for livestock protection were to be continued in the control area as required. The northern portion was to be referred to as a "control area", providing Wildlife Services with an area of reference to compare with the treatment area.

Figure 1. Treatment Area and Control Areas for the Shirley Mountain Mule Deer Herd Unit, Wyoming.

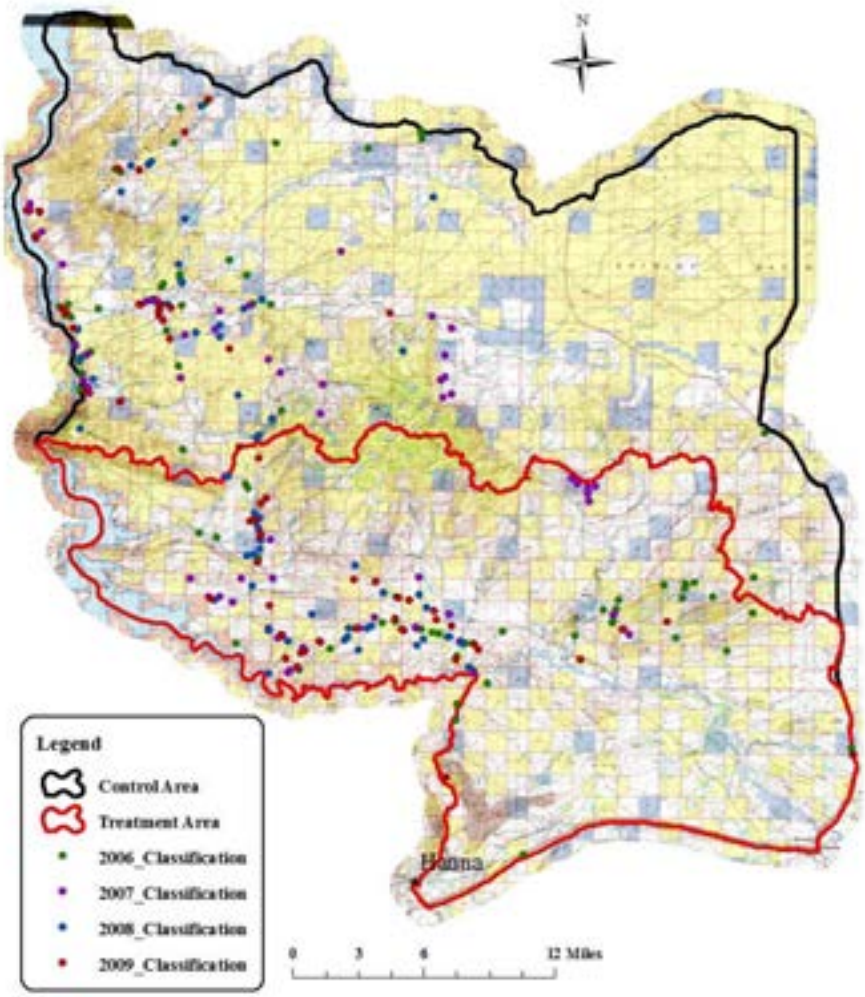


METHODS

Wildlife Services' began enhanced coyote control in the treatment area during the spring of 2008. The 2006-2009 post-season mule deer classification data in MD540 was collected from ground surveys completed by Wyoming Game and Fish Department personnel. As agreed upon, Wyoming Game and Fish Department would provide Wildlife Services with population data for MD540 for the duration of the project. Classification data was entered annually in the Wyoming Game and Fish Department's Wildlife Observation

System. GIS analysis of the Wildlife Observation System data was completed to determine the sex and age ratios for the 1.) treatment area, 2.) control area, and 3.) the entire herd unit. GIS was also used to map mule deer group observation locations recorded during the annual post-season classification surveys (Figure 2).

Figure 2. 2006-2009 Post-season mule deer classification locations for the Shirley Mountain Mule Deer Herd Unit, Wyoming.



RESULTS

The results of the annual post-season mule deer classification surveys are described in Table 2. Fawn and total buck ratios in the treatment area were less than the control area in 2006 and 2007 (Figures 3 and 4). Fawn and total buck ratios in the treatment area were greater than the control area in 2008 and 2009.

Table 2. 2006-2009 Post-season classification survey ratios for the Shirley Mountain Mule Deer Herd Unit, Wyoming.

Year	Area	Bucks/100 Does	Fawns/100 Does	Sample Size
2006	Herd Unit Total	23	53	754
	Control Area	25	56	374
	Treatment Area	22	51	380
2007	Herd Unit Total	31	57	587
	Control Area	31	59	279
	Treatment Area	31	55	308
2008	Herd Unit Total	31	58	521
	Control Area	31	55	274
	Treatment Area	31	60	247
2009	Herd Unit Total	23	75	402
	Control Area	17	71	191
	Treatment Area	30	79	211

Figure 3. 2006-2009 Post-season classification survey results for fawn ratios in the Shirley Mountain Mule Deer Herd Unit, Wyoming.

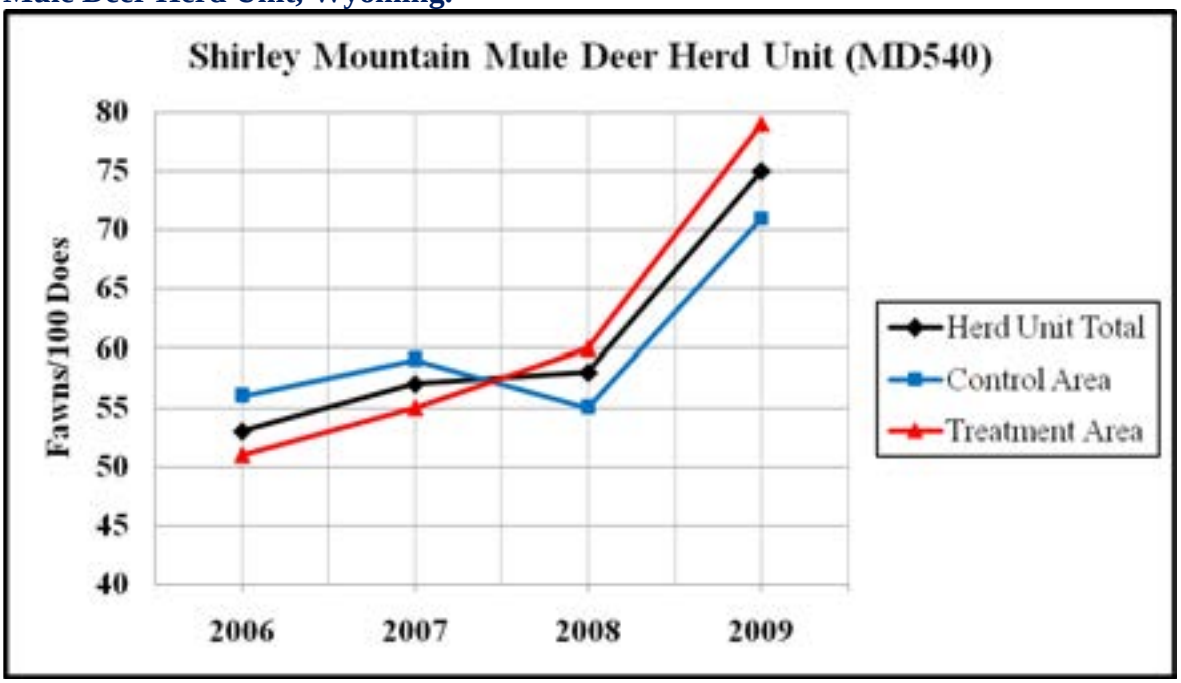
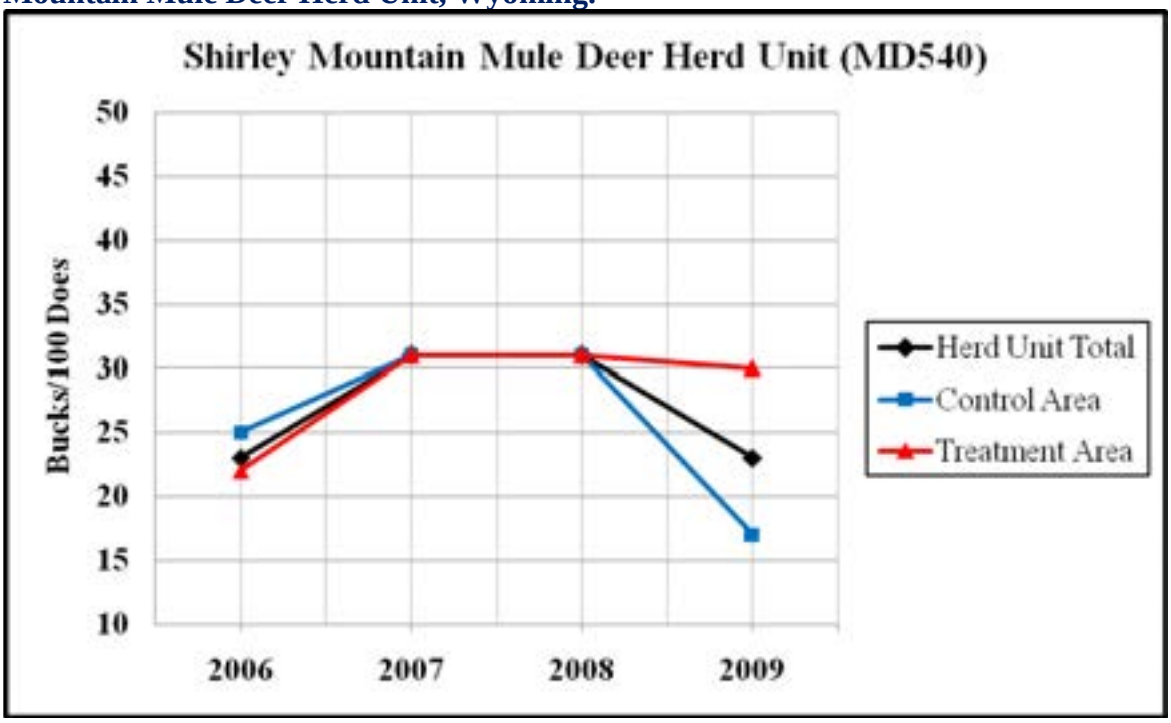


Figure 4. 2006-2009 Post-season classification survey results for total buck ratios in the Shirley Mountain Mule Deer Herd Unit, Wyoming.



COMPLETED STUDIES AND PROJECTS LIST

McDaniel G. W., F. G. Lindzey. 1991. Seasonal Movements, Population Characteristics and Habitat Use of Mule Deer in the Shirley Mountain Area, Central Wyoming. Wyoming Cooperative Fishery and Wildlife Research Unit. University of Wyoming, Laramie. 64 pp.

LITERATURE CITED

Wyoming Game and Fish Dept. 2005. Shirley Mountain Mule Deer Herd Unit Job Completion Report., Wyoming Game and Fish Department, Laramie. 37 pp.

Wyoming Game and Fish Dept. 2007. Big Game Management Parameter Update – 'Recreational' vs. 'Special' Management. Memorandum. Wyoming Game and Fish Department, Cheyenne. 3 pp.

Shirley Mountain Mule Deer (MD540)
Hunt Area 70
2012 Season Recommendations

Hunt Area	Type	Date of Seasons Opens	Closes	Limitations
*70		Oct. 15	Oct. 21	General license; antlered mule deer or any white-tailed deer
	~~6~~	~~Oct. 15~~	~~Nov. 30~~	~~Limited quota; 25 licenses doe or fawn valid on private land~~
Archery		Sept. 1	Sept. 30	Refer to Section 4 of this Chapter

Summary of Proposed Changes in License Numbers

Hunt Area	Type	Change From 2011
70	6	-25

Management Evaluation

Postseason classifications were conducted from the ground and produced ratios of 41 bucks and 58 fawns/100does, from a sample size of 322 mule deer. The 2011 buck ratio improved 56% and the fawn ratio declined 9% from 2010. Classification data has been collected from the ground for the past 6-years. Sample sizes from classification surveys conducted from the ground have incrementally decreased over the past 5 years. Use of a helicopter should be considered in 2012 in an attempt to collect an adequate sample size for the postseason classification data.

The 2011 postseason POP-II population model estimate was 8,220 mule deer. Estimates are derived from observed changes in the annual sex and age ratios. Due to the less than adequate classification sample sizes, a decrease in harvest success, and the noted increase in the in hunter effort, it should be assumed the 2011 population estimate was not accurate. Adequate postseason classification sample sizes have not been collected in over 20 years. Specific survival rates and independent population estimates are not available for this herd unit. Harvest rates for this herd unit may also be overestimated, contributing to an over estimation of the population size by the POP-II population model in order to support both a higher harvest rate and observed postseason buck ratios.

Harvest

The preliminary harvest report indicated 799 hunters harvested 346 mule deer in 2011 for an overall success rate of 43%. General license buck harvest decreased 23%. General license hunter numbers decreased 10%, as compared to the 2010 season. The Type 6 licensed hunters continued to experience greater than 90% harvest success. The General hunting season length was reduced by 1 day in 2011, to 6 days, in an effort to slow the rate of decline in buck ratios. This reduction in season length appeared to be successful in maintaining buck ratios within the recreational strategy parameters

2012 Season Proposal

The 2012 hunting season proposal includes 7 days of General license antlered mule deer or any white-tailed deer hunting. A shorter season could arguably be justified in an attempt to reduce hunting pressure. However, if season length were shortened further, it would preclude the weekend and reduce youth participation. The Type 6 licenses were discontinued due to a lack of deer damage complaints in this herd unit.

Data Set: MD540_2012_SEASON.GN1 03/02/2012 07:14 pm Page 1

MD540_2012_SEASON
Data from 2005 to 2013 Simulation from 2005 to 2013

Age Class	Init Pop. Male	Init Pop. Female	Prop. Presn Male	Prop. Presn Female	Mort% Postsn Male	Mort% Postsn Female	Effort Set 1 Male	Effort Set 1 Female	Effort Set 2 Male	Effort Set 2 Female
0	71.5	71.5	50.0	50.0	50.0	50.0	1.00	1.00	1.00	1.00
1	18.3	19.8	2.0	2.0	10.0	5.0	1.50	1.00	1.00	1.00
2	11.0	16.1	2.0	2.0	10.0	5.0	1.00	1.00	1.00	1.00
3	6.6	13.0	2.0	2.0	10.0	5.0	1.00	1.00	1.00	1.00
4	4.0	10.5	2.0	2.0	10.0	5.0	1.00	1.00	1.00	1.00
5	2.4	8.5	2.0	2.0	10.0	5.0	1.00	1.00	1.00	1.00
6	1.4	6.9	2.0	2.0	15.0	10.0	1.00	1.00	1.00	1.00
7	0.9	5.6	2.0	2.0	20.0	20.0	1.00	1.00	1.00	1.00
8	0.5	4.5	2.0	2.0	30.0	30.0	1.00	1.00	1.00	1.00
9	0.3	3.7	2.0	2.0	40.0	40.0	1.00	1.00	1.00	1.00
10	0.2	3.0	2.0	2.0	50.0	50.0	1.00	1.00	1.00	1.00
11	0.1	2.4	2.0	2.0	60.0	60.0	1.00	1.00	1.00	1.00
12	0.1	2.0	2.0	2.0	75.0	75.0	1.00	1.00	1.00	1.00
13	0.0	1.6	2.0	2.0	85.0	85.0	1.00	1.00	1.00	1.00
14	0.0	1.3	2.0	2.0	90.0	95.0	1.00	1.00	1.00	1.00
15	0.0	1.0	2.0	2.0	100.0	100.0	1.00	1.00	1.00	1.00

Sum = 288.7 Estimated Sum = 8320 Subadults: Ages 0 to 0

Data Set: MD540_2012_SEASON.GN1 03/02/2012 07:14 pm Page 2

MSI Function is Linear

Bio-Year	Preseason MSI	Harvest // Des. Pop Size in NA Subadults#	Males#	Females#	Postseason MSI	Effort & Wound Set Used
2005	1.37	2	339	26	0.28	1
2006	1.23	3	368	44	0.34	1
2007	1.17	4	511	67	1.04	1
2008	1.24	9	347	66	1.31	1
2009	1.07	2	400	43	0.61	1
2010	1.07	0	436	18	0.17	1
2011	1.13	1	334	11	1.00	1
2012	1.21	0	300	0	1.05	1
2013	1.21	0	250	0	1.00	1

Set 1 Wounding Loss 10.% 10.% 10.% Yearling Male 10.%
Set 2 Wounding Loss 0.% 0.% 0.% Yearling Male 0.%

Bio-Year	Young/100 Fems Age 1 - 1	Young/100 Fems Age 2 - 13	Young/100 Fems Age 14 - 15	Sex Ratio: 50 : 50
2006	0.0	170.0	0.0	
2007	0.0	170.0	0.0	
2008	0.0	170.0	0.0	
2009	0.0	170.0	0.0	
2010	0.0	170.0	0.0	
2011	0.0	170.0	0.0	
2012	0.0	170.0	0.0	
2013	0.0	170.0	0.0	
2014	0.0	170.0	0.0	

POP-II (V1.2.9) Simulation Output Tables for MD540_2012_SEASON.GN1, 03/02/2012 07:14 pm

Table 1. Population Size During Bio-Year for MD540_2012_SEASON.GN1 03/02/2012 07:14 pm

Bio-Year	Start	Pre-Season	Post Season	End	%Growth
2005	8320	5382	4978	4623	8.0
2006	8986	6189	5733	5234	11.8
2007	10045	7108	6468	4800	-3.0
2008	9744	6559	6095	4244	-8.4
2009	8927	6331	5841	4938	8.1
2010	9652	7025	6525	6255	24.0
2011	11972	8600	8220	6273	5.2
2012	12593	8618	8288	6243	-0.7
2013	12506	8566	8291	6362	0.7

Table 2. Preseason Natural Mortality for MD540_2012_SEASON.GN1 03/02/2012 07:14 pm

Bio-Year	Sub-Adults	Adult Males	Adult Females	Total	% of Pop
2005	2823	36	79	2938	35.3
2006	2683	35	78	2797	31.1
2007	2815	39	84	2937	29.2
2008	3065	35	84	3184	32.7
2009	2505	25	66	2596	29.1
2010	2522	30	76	2628	27.2
2011	3230	43	99	3371	28.2
2012	3824	47	105	3976	31.6
2013	3789	48	104	3940	31.5

Table 3. Harvest Mortality for MD540_2012_SEASON.GN1 03/02/2012 07:14 pm

Bio-Year	Sub-Adults	Adult Males	Adult Females	Total	% of Pop
2005	2	339	26	367	6.8
2006	3	368	44	415	6.7
2007	4	511	67	582	8.2
2008	9	347	66	422	6.4
2009	2	400	43	445	7.0
2010	0	436	18	454	6.5
2011	1	334	11	346	4.0
2012	0	300	0	300	3.5
2013	0	250	0	250	2.9

Table 4. Harvest Percentages for MD540_2012_SEASON.GN1 03/02/2012 07:14 pm

Bio-Year	Sub-Adults	Adult Males	Adult Females	Total	Yearling Males
2005	0.2	26.4	0.9	6.82	50.0
2006	0.2	26.2	1.4	6.71	48.7
2007	0.2	31.6	1.9	8.19	52.1
2008	0.5	25.3	2.0	6.43	43.5
2009	0.1	35.0	1.4	7.03	36.4
2010	0.0	31.6	0.5	6.46	63.4
2011	0.0	18.1	0.3	4.02	63.0
2012	0.0	15.9	0.0	3.48	41.6
2013	0.0	13.0	0.0	2.92	39.3

Table 5. Postseason Natural Mortality for MD540_2012_SEASON.GN1 03/02/2012 07:14 pm

Bio-Year	Sub-Adults	Adult Males	Adult Females	Total	% of Pop
2005	181	29	145	355	7.1
2006	285	39	175	499	8.7
2007	1036	125	507	1668	25.8
2008	1224	147	480	1851	30.4
2009	663	49	190	903	15.5
2010	186	17	67	270	4.1
2011	1243	165	539	1947	23.7
2012	1311	182	551	2045	24.7
2013	1237	184	509	1929	23.3

Table 6. Preseason Ratios for MD540_2012_SEASON.GN1 03/02/2012 07:14 pm

Bio-Year	Subadults /100 1+F	2+ Males /100 1+F	Yr. Males /100 1+F	Ad Males /100 1+F
2005	46.4	27.5	18.3	45.8
2006	54.1	27.7	17.5	45.2
2007	57.1	26.8	19.4	46.3
2008	56.8	27.4	14.1	41.5
2009	72.3	27.5	10.5	38.0
2010	63.5	18.5	21.4	39.9
2011	58.2	20.2	22.9	43.1
2012	58.9	30.2	14.3	44.5
2013	59.3	32.1	13.9	45.9

Table 7. Postseason Ratios for MD540_2012_SEASON.GN1 03/02/2012 07:14 pm

Bio-Year	Subadults /100 1+F	2+ Males /100 1+F	Yr. Males /100 1+F	Ad Males /100 1+F
2005	46.8	21.1	11.8	32.9
2006	54.8	21.3	11.3	32.7
2007	58.2	19.5	11.3	30.9
2008	57.8	21.4	9.3	30.7
2009	73.4	18.5	5.2	23.7
2010	63.8	13.5	12.7	26.2
2011	58.4	17.1	17.6	34.6
2012	58.9	25.6	11.1	36.7
2013	59.3	28.1	11.3	39.4

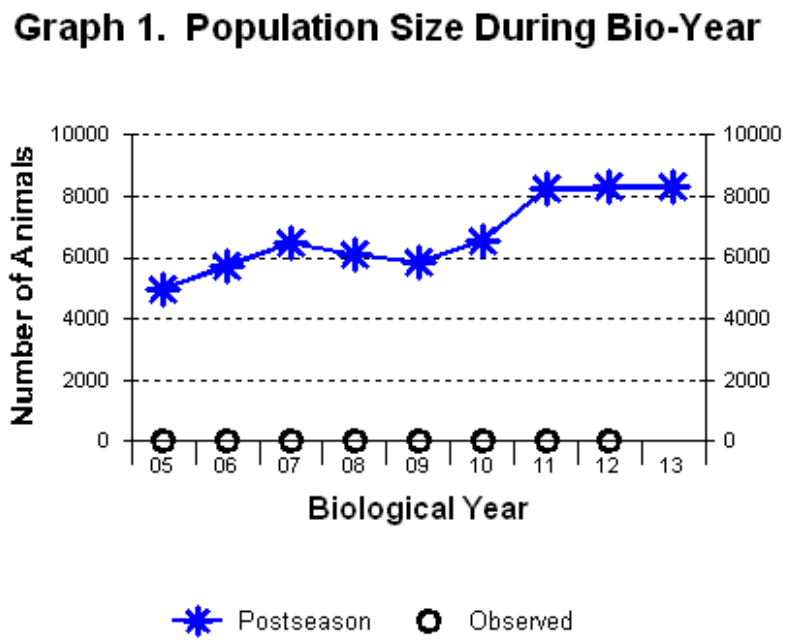
Table 8. End of Year Ratios for MD540_2012_SEASON.GN1 03/02/2012 07:14 pm

Bio-Year	Subadults /100 Adlts	Subadults /100 1+F	Yr. Males /100 1+F	Ad Males /100 1+F
2005	31.8	42.4	12.1	33.6
2006	36.2	48.3	11.6	33.3
2007	24.9	32.8	11.9	31.9
2008	17.9	23.4	9.5	30.7
2009	44.1	54.5	5.3	23.6
2010	47.2	59.6	12.7	26.2
2011	24.7	33.4	18.1	35.2
2012	23.4	32.2	11.4	37.3
2013	24.1	33.7	11.6	39.8

Table 9. Reproduction at Start of Bio-Year for MD540_2012_SEASON.GN1 03/02/2012 07:14 pm

Bio-Year	Young / 100 AF 1 +	Sub-Ad. / 100 AF 1 +	Total Young	Total Sub-Adult	Total Females 1 +
2005	143	143	4121	4121	2879
2006	137	137	4363	4363	3184
2007	134	134	4811	4811	3578
2008	146	146	4944	4944	3391
2009	152	152	4682	4682	3077
2010	134	134	4714	4714	3529
2011	131	131	5717	5717	4370
2012	146	146	6320	6320	4341
2013	146	146	6263	6263	4278

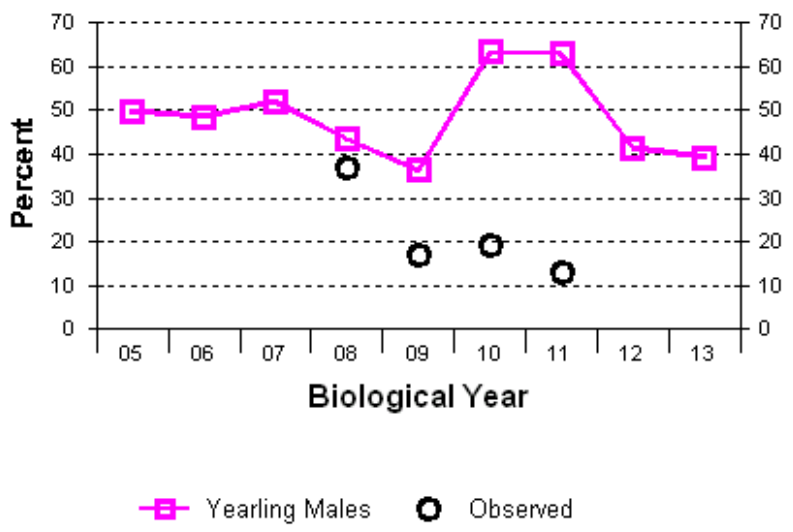
POP-II (V1.2.9) Graph 1. Population Size During Bio-Year



MD540_2012_SEASON.GN1, 03/02/2012 07:25 pm

YR	SIM	OBS
05	4978	0
06	5733	0
07	6468	0
08	6095	0
09	5841	0
10	6525	0
11	8220	0
12	8288	0
13	8291	-----
	AVERAGES	
of Col.	6715	
of Pair	6519	0

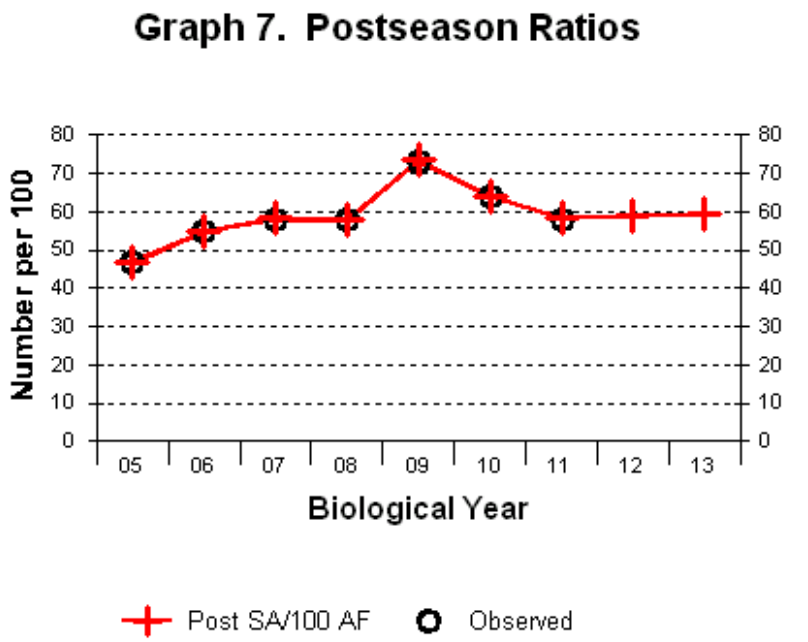
POP-II (V1.2.9) Graph 4. Harvest Percentages



12_SEASON.GN1, 03/02/2012 07:25 pm, Correlation (R) = -0.418, GOF = -0.627

YR	SIM	OBS
05	50	-----
06	49	-----
07	52	-----
08	44	37
09	36	17
10	63	19
11	63	13
12	42	-----
13	39	-----
	AVERAGES	
of Col.	49	
of Pair	52	22

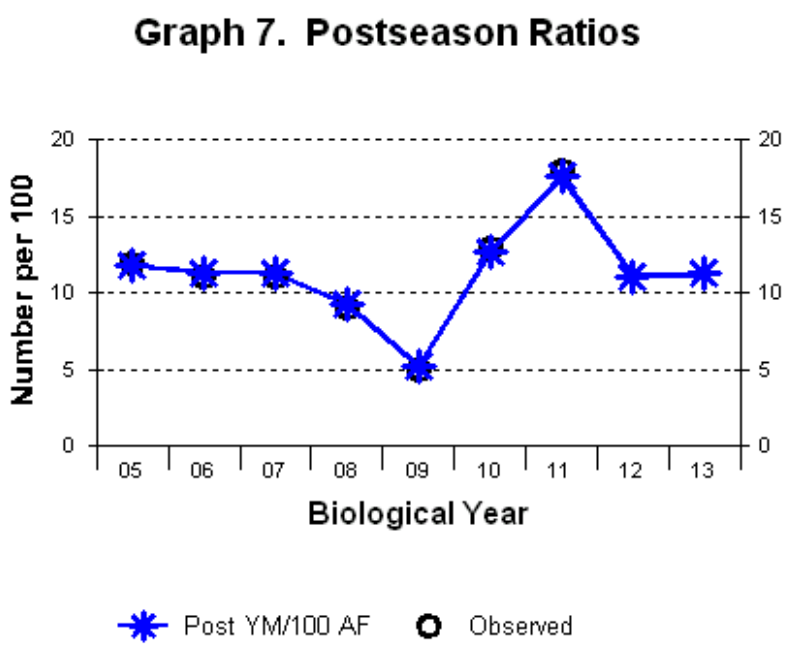
POP-II (V1.2.9) Graph 7. Postseason Ratios



I0_2012_SEASON.GN1, 03/02/2012 07:25 pm, Correlation (R) = 1, GOF = 0.995

YR	SIM	OBS
05	47	47
06	55	55
07	58	58
08	58	58
09	73	73
10	64	64
11	58	58
12	59	-----
13	59	-----
	AVERAGES	
of Col.	59	
of Pair	59	59

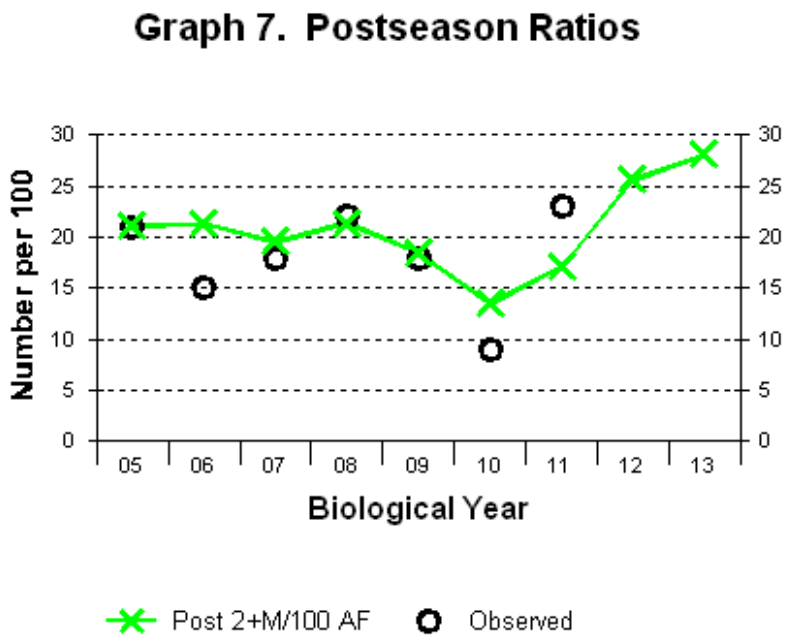
POP-II (V1.2.9) Graph 7. Postseason Ratios



012_SEASON.GN1, 03/02/2012 07:25 pm, Correlation (R) = 0.998, GOF = 0.973

YR	SIM	OBS
05	12	12
06	11	11
07	11	11
08	9	9
09	5	5
10	13	13
11	18	18
12	11	-----
13	11	-----
	AVERAGES	
of Col.	11	
of Pair	11	11

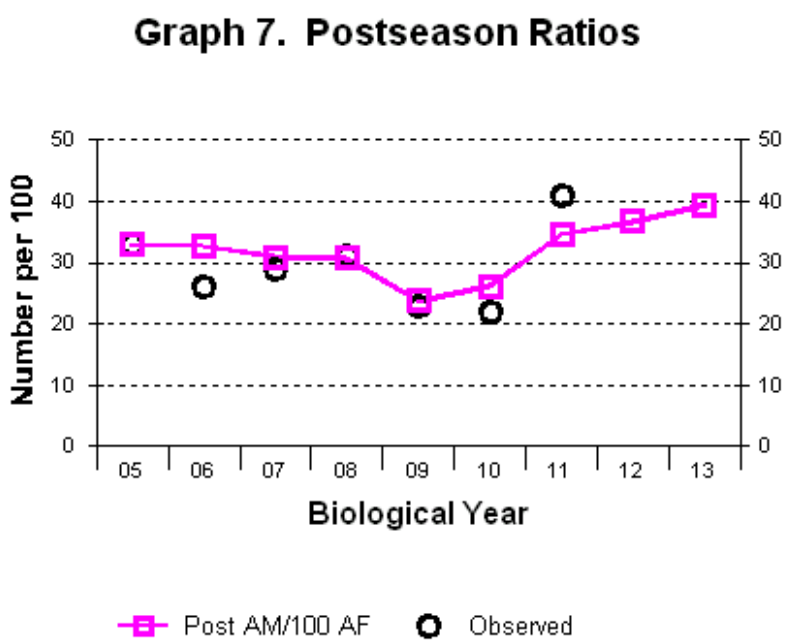
POP-II (V1.2.9) Graph 7. Postseason Ratios



012_SEASON.GN1, 03/02/2012 07:25 pm, Correlation (R) = 0.579, GOF = 0.791

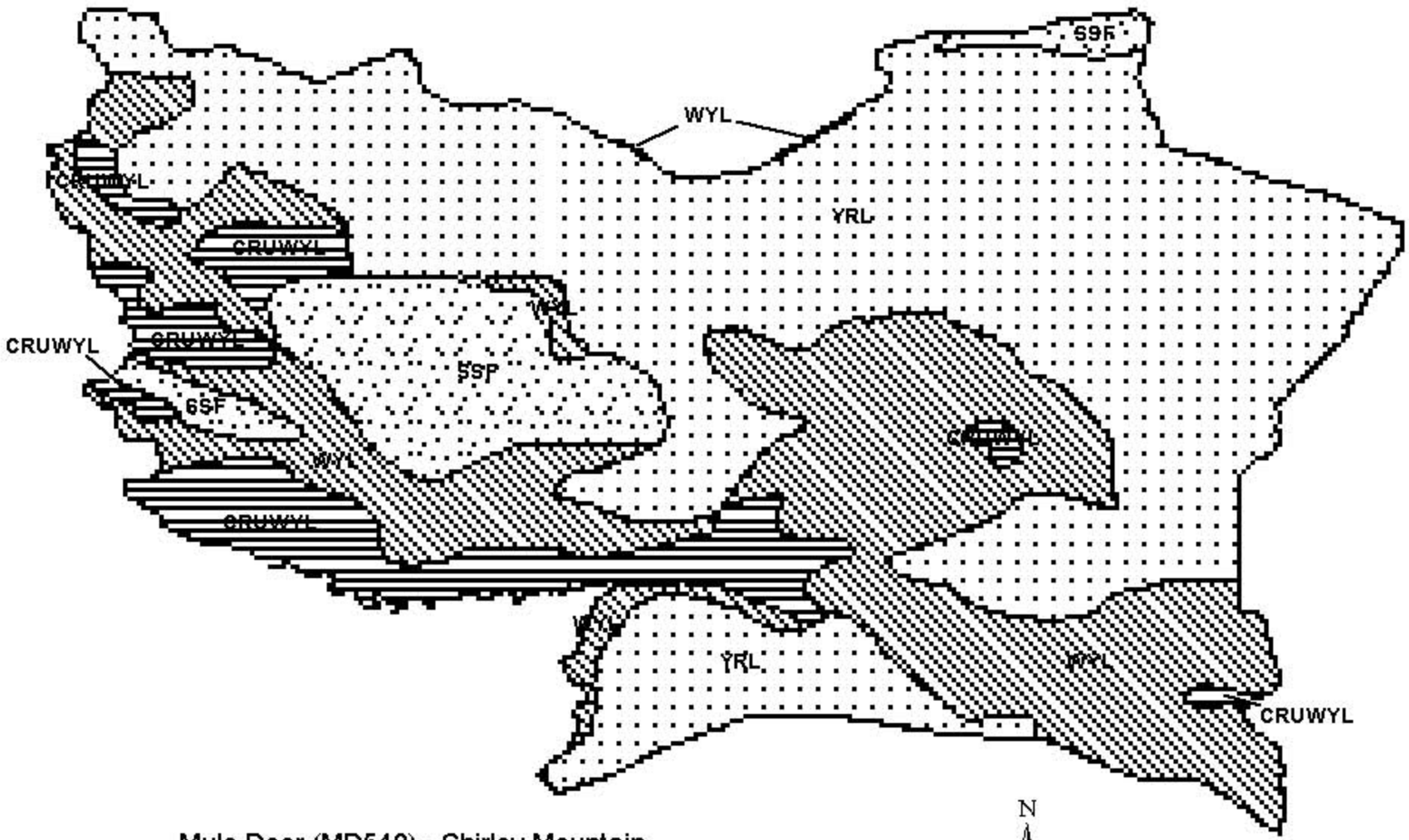
YR	SIM	OBS
05	21	21
06	21	15
07	20	18
08	21	22
09	18	18
10	14	9
11	17	23
12	26	-----
13	28	-----
	AVERAGES	
of Col.	21	
of Pair	19	18

POP-II (V1.2.9) Graph 7. Postseason Ratios



012_SEASON.GN1, 03/02/2012 07:25 pm, Correlation (R) = 0.809, GOF = 0.867

YR	SIM	OBS
05	33	33
06	33	26
07	31	29
08	31	31
09	24	23
10	26	22
11	35	41
12	37	-----
13	39	-----
	AVERAGES	
of Col.	32	
of Pair	30	29



Mule Deer (MD540) - Shirley Mountain
HA 70
Revised - 12/87

N

2011 - JCR Evaluation Form

SPECIES: Mule Deer | PERIOD: 6/1/2011 - 5/31/2012

HERD: MD541 - PLATTE VALLEY

HUNT AREAS: 78-81, 83, 161 | PREPARED BY: WILL SCHULTZ

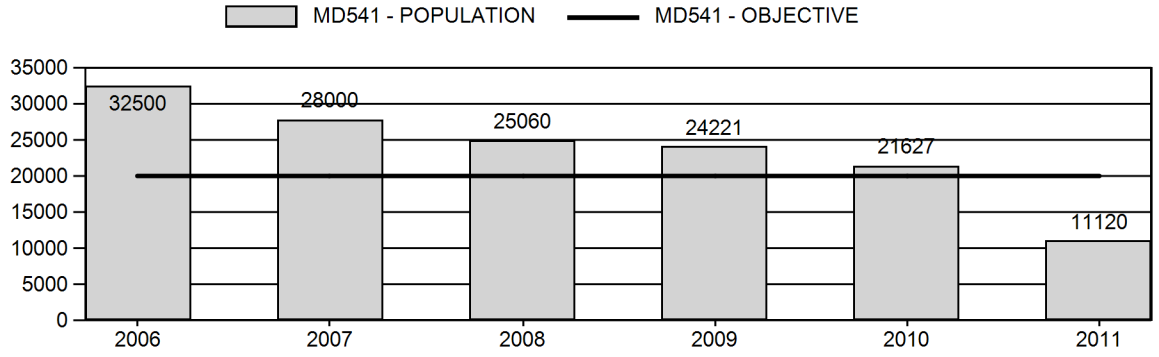
	2006 - 2010 Average	2011	2012 Proposed
Population:	26,282	11,120	12,000
Harvest:	1,459	540	400
Hunters:	3,780	2,654	2,000
Hunter Success:	39%	20%	20%
Active Licenses:	3,883	2,674	2,000
Active License Percent:	38%	20%	20%
Recreation Days:	20,056	14,397	10,000
Days Per Animal:	13.7	26.7	25
Males per 100 Females	30	26	
Juveniles per 100 Females	56	50	

Population Objective:	20,000
Management Strategy:	Recreational
Percent population is above (+) or below (-) objective:	-44.4%
Number of years population has been + or - objective in recent trend:	5
Model Date:	02/27/2012

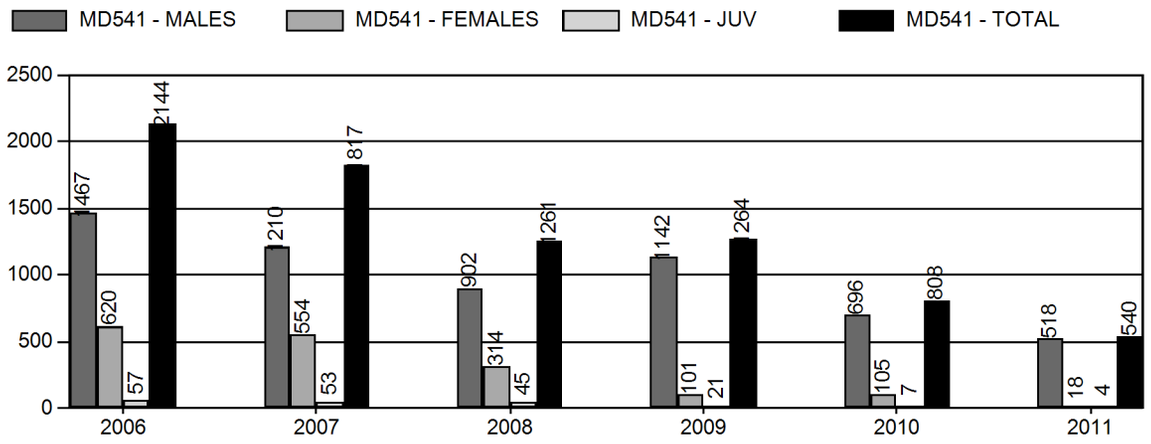
Proposed harvest rates (percent of pre-season estimate for each sex/age group):

	JCR Year	Proposed
Females ≥ 1 year old:	NA%	NA%
Males ≥ 1 year old:	NA%	NA%
Juveniles (< 1 year old):	NA%	NA%
Total:	NA%	NA%
Proposed change in post-season population:	NA%	NA%

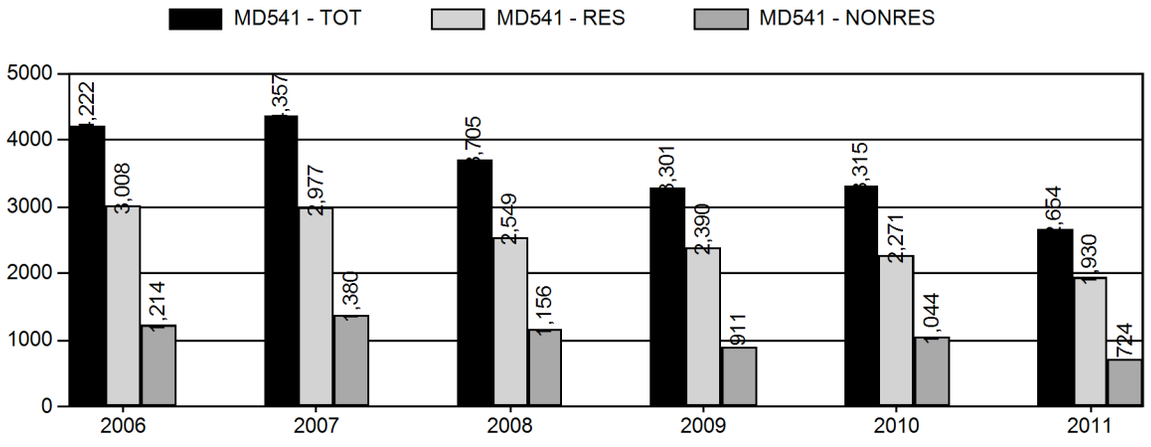
Population Size - Postseason



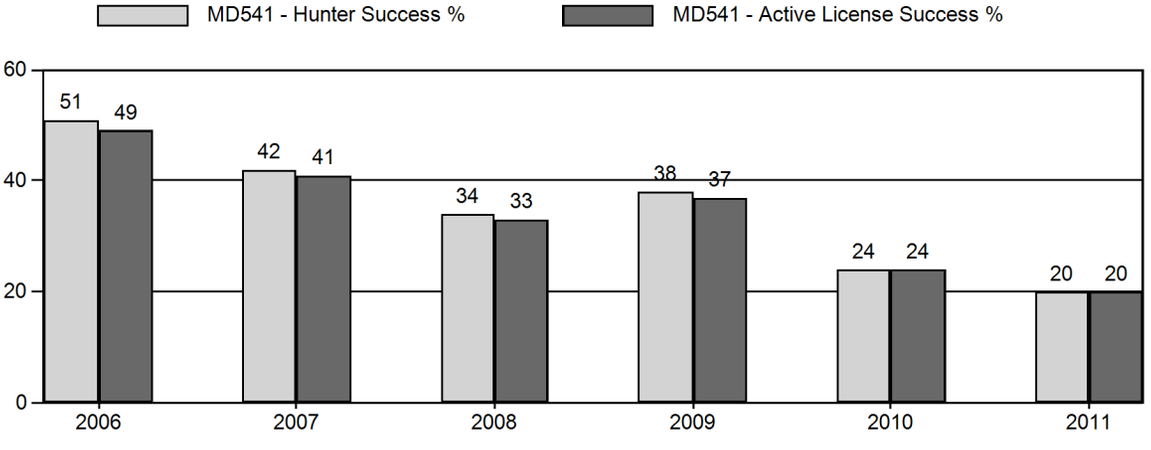
Harvest



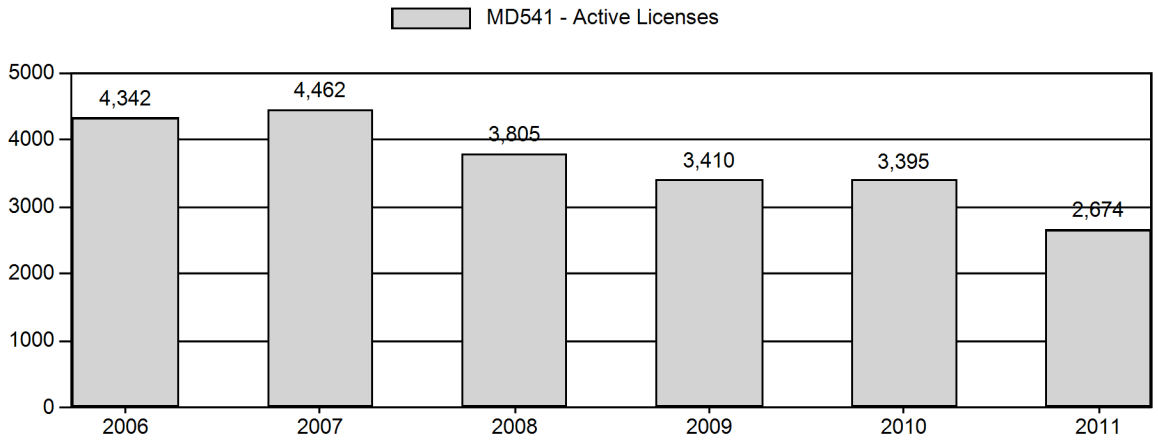
Number of Hunters



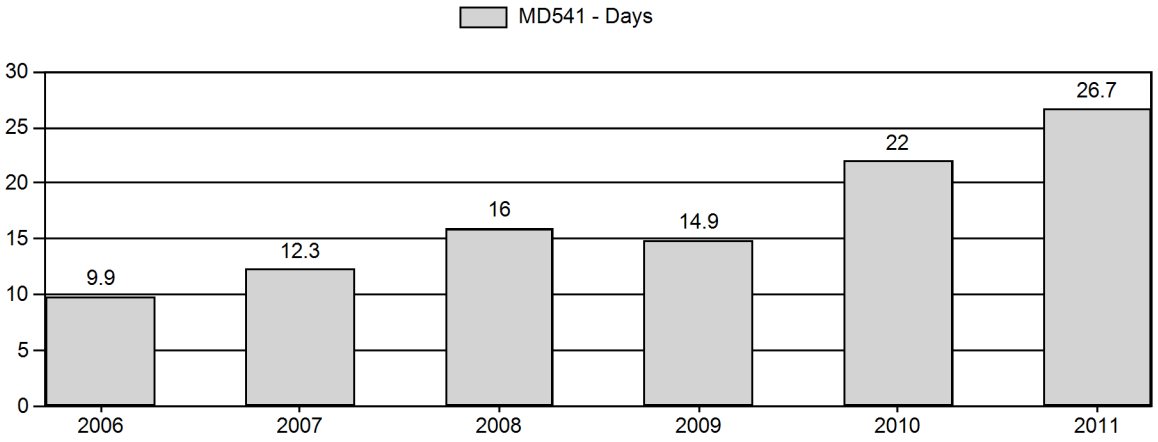
Harvest Success



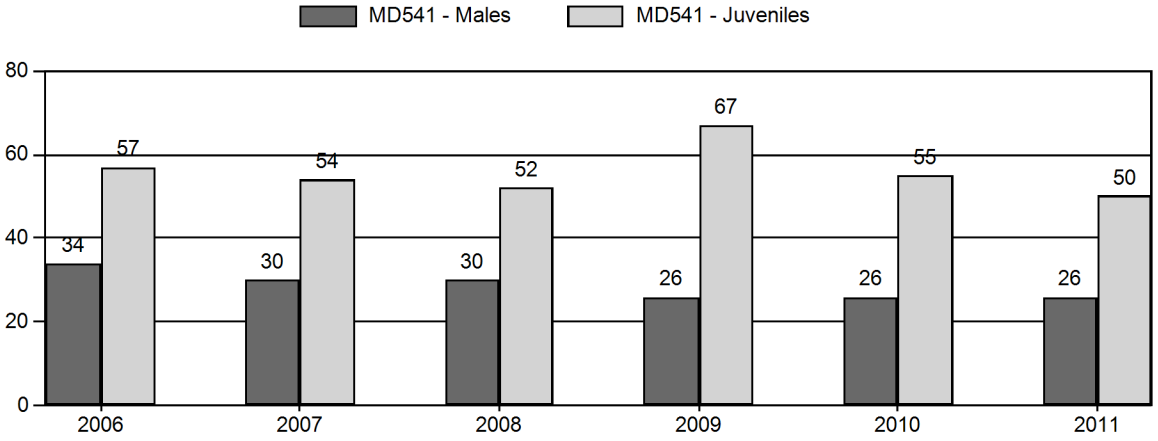
Active Licenses



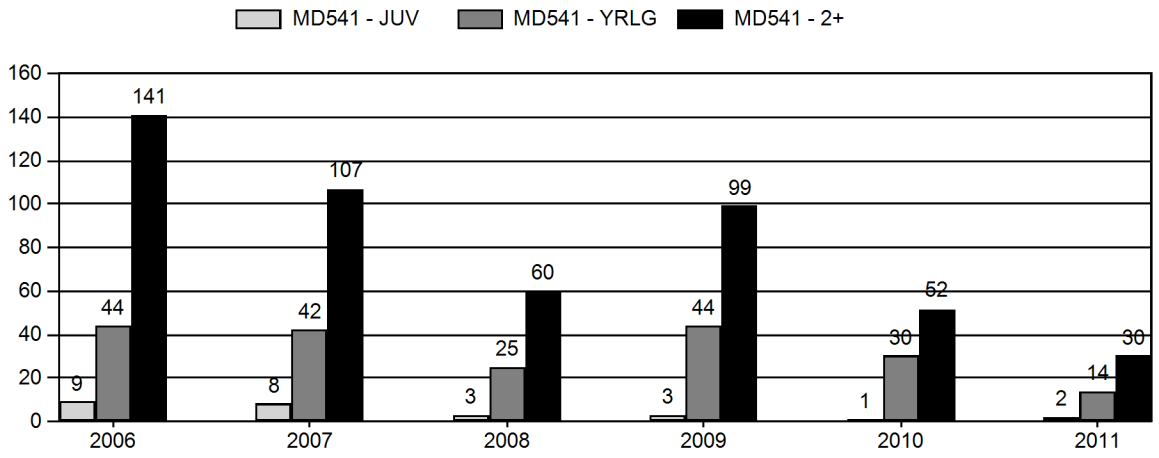
Days per Animal Harvested



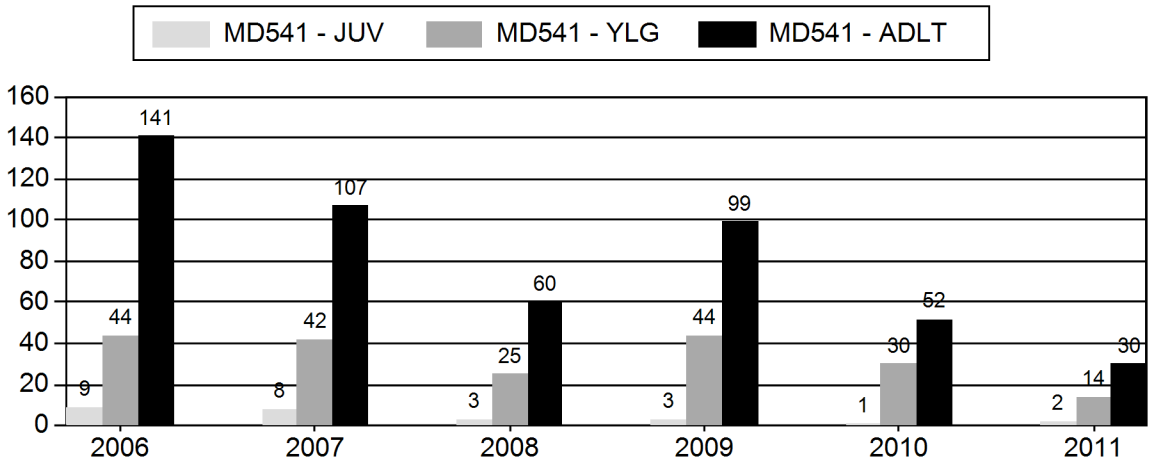
Postseason Animals per 100 Females



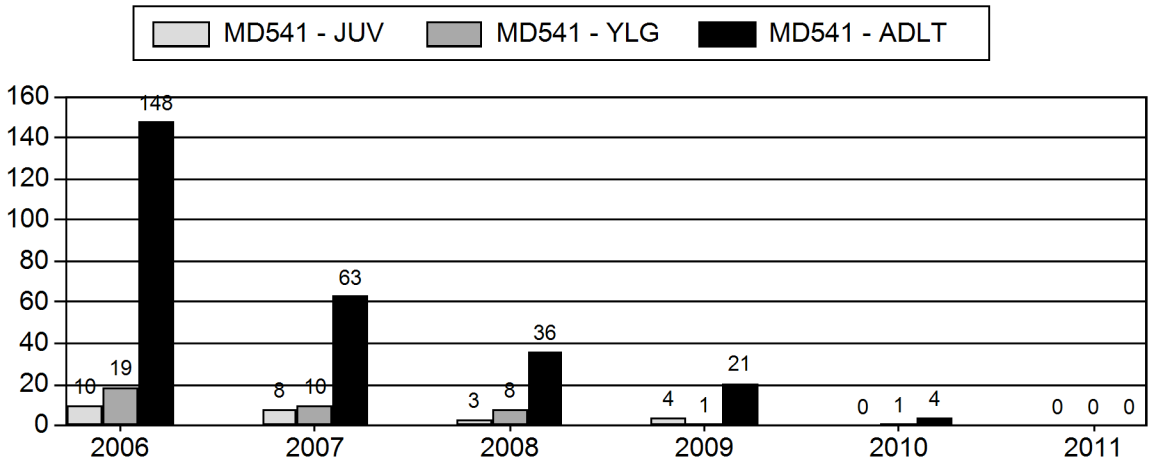
Age Structure of Field Checked Males



Age Structure Data (Field and Laboratory) - Male



Age Structure Data (Field and Laboratory) - Female



INTRODUCTION

This report focuses on the management of the Platte Valley Mule Deer Herd Unit (MD541) during biological years 2009, 2010, and 2011. It is intended to provide the reviewer with information regarding the habitat, population and hunting status for this herd unit. Additionally, future management recommendations and the 2012 hunting season proposal for this herd unit are also included in this report.

The population objective for the Platte Valley herd unit is 20,000 mule deer. A recreational management strategy has been prescribed for this herd unit. This strategy attempts to maintain postseason buck ratios at 20-29 bucks per 100 does (WGFD 2007).

During the period of 2009-2011 extreme drought conditions subsided somewhat in the Platte Valley Mule Deer Herd Unit. Precipitation occurred primarily during winter and spring periods. During this period, POP-II models estimated an average postseason population of approximately 21,600 deer. Sightability surveys continued during this time period and produced an average population estimate of 14,000 wintering deer. Between 2009 and 2011 hunter numbers and harvest success averaged 3,090 and 27% respectively, and was in decline. Postseason classification ratios averaged 26 bucks and 57 fawns per 100 does from surveys with more than adequate sample sizes. Surveillance for Chronic Wasting Disease continued with an overall prevalence rate of 1.3%. The exotic louse, *Bovicola tibialis*, was documented on at least 2 more mule deer in the Platte Valley Herd Unit.

Several components of the Wyoming Mule Deer Initiative were implemented in this herd unit during this period under what has become to be known as the Platte Valley Mule Deer Initiative. A multifaceted research project was initiated with the Wyoming Cooperative Fish and Wildlife Research Unit to evaluate sightability surveys and improve management of mule deer in this herd unit. A large public involvement process was also initiated to engage all stakeholders in developing an overall management plan for this herd unit. A derivative of this process was the formation of the Platte Valley Habitat Partnership to address mule habitat issues in the Platte Valley Herd Unit.

BACKGROUND

The Platte Valley Mule Deer Herd is located in south central Wyoming and consists of Hunt Areas 78, 79, 80, 81, 83, and 161. These hunt areas are located on the west slope of the Snowy Range and the east slope of the Sierra Madre Range, including the North Platte River valley. Areas 83 and 161, located north of the other hunt areas, contain drier and less productive habitats. These two hunt areas are part of this herd unit because many deer that summer in high elevation mountain habitat in the other hunt areas migrate to winter ranges in these areas during more severe winters (Ward et al. 1976). Summer and fall densities of deer in Areas 83 and 161 are comparatively lower than in the southern hunt areas.

Elevation ranges from about 6,400 feet along the North Platte River to just over 12,000 feet at Medicine Bow Peak. Habitats include alpine meadows, subalpine and montane forests, mountain shrub, sagebrush-grasslands, grasslands, cottonwood riparian, and agricultural croplands. The forests are a mix of subalpine fir, Engelmann spruce, Douglas-fir, lodgepole pine, aspen, and a few ponderosa pines, with associated grass/forb/shrub understory vegetation. The herd unit contains 2,720 square miles of occupied habitat. Land ownership consists of 41% private, 28% Forest Service, 25% Bureau of Land Management, 5% State of Wyoming, and 1% WGFD. Newman (1968), Strickland (1975) and Ward et al. (1976) provide historical information on seasonal movements, distributions and aspects of habitat ecology for this herd. There appears

to be significant seasonal interchange of mule deer between Colorado and Wyoming. Segments of this deer herd summer in the North Park area of Colorado and move to winter ranges in Wyoming such as Baggot Rocks (Newman 1968). Because of the high number of deer observed in the 1960 - 1970's, which was well above the current objective of 20,000 mule deer, there is concern by some stakeholders that the current number of deer is far too low. However, poor range conditions, specifically in the crucial winter yearlong range, concerns managers about the long term sustainability of these habitats to support more deer than currently present. These conflicting management directions significantly complicate our ability to manage mule deer numbers at both a level desired by stakeholders and within the sustainability of the habitat.

The Platte Valley Mule Deer Herd Unit is located in south central Wyoming and is an extremely important resource to residents and visitors. The herd unit occupies one of the larger blocks of accessible public lands near major population centers in Wyoming and Colorado. In addition to providing access to high densities of hunters, this herd unit provides a substantial amount of non-consumptive recreation related to viewing mule deer and other wildlife. While some public lands in the area receive excessive use from humans, access to private lands is highly restricted which complicates distributing hunters and harvest pressure. Competition for habitat resources from other ungulates, transportation, subdivisions, recreation, energy development, and other land uses compose the majority of impacts on this herd unit's mule deer habitat.

WEATHER

Weather data for Upper Platte Climatic Division 10 which is normally appended to the annual job completion reports was unavailable this year. Generally, precipitation increased during this period, primarily during winter and spring. The average high temperatures also increased. Severe, prolonged winter conditions were experienced in this herd unit during the winter of 2010-2011, and may have negatively influenced over-winter survival for mule deer and fawn production in 2011.

HABITAT CONDITIONS/ASSESSMENT

Production/utilization transects data for this herd unit which is normally appended to the job completion reports was unavailable this year. The Habitat Branch has established 7 production/utilization transects to represent 2,720 square miles of occupied mule deer habitat in this herd unit. The limited production/utilization data available for this herd unit limits any inferences regarding the condition status of the Platte Valley Herd Unit habitat. Generally, production improved slightly during this period due to an increase in precipitation. Utilization of browse appeared excessive due high densities of mule deer and other ungulates in the vicinity of transects.

POPULATION

CLASSIFICATION DATA

Postseason classifications were conducted from a helicopter in December for the period from 2009 through 2011. Fawn ratios were 67, 55 and 50 per 100 does in 2009, 2010 and 2011 respectively (Figure 1). Fawn ratios decreased through this period while buck ratios were stable at 26 bucks per 100 does. Observed buck ratios were maintained below the Wyoming Game and Fish Department's (WGFD) 29 bucks/100 doe maximum for the "recreational" management strategy under which this herd unit was managed. Fawn and yearling buck ratios appeared to be impacted by the winter of 2010-2011; however adult buck ratios did not indicate a great reduction in over winter survival. It was assumed buck ratios have been maintained annually

during this reporting period due to a decline in the number of hunters choosing to hunt in this herd unit and fall weather conditions which have not been conducive to harvest success.

Sample sizes for the classification surveys have been excellent in this herd unit (Table 1). Survey sample sizes have been at least 100% in excess of what was assumed to be needed for an adequate sample with an 80% confidence interval. Classification surveys were conducted in conjunction with the Snowy Range Elk Herd classifications, and because a greater amount of time is spent covering the herd unit to sample elk, as well as deer, the sample size is typically larger than necessary for an adequate sample.

Surveys are conducted in early winter and many of the mule deer classified in the southern portion of the herd unit include mule deer which annually migrate north from the North Park, Colorado area to winter in the Platte Valley Herd Unit (Newman 1968, Strickland 1975 and Yost 2009). The extent to which this annual migration influences the ratios observed in this herd unit is unknown. This has been problematic for managers because Wyoming's mule deer management strategies are based solely on male/female ratios. Colorado's trophy management strategy for the North Park area emphasizes higher buck ratios. The migration artificially inflates the Platte Valley Herd Unit's classification ratios beyond what our traditional harvest strategy assumes to be available for Wyoming hunters. Much of discontent from hunters about the quality of the hunt rests in this management issue.

Fawn ratios have been in a long term decline for this herd unit. Fawn survival in this herd unit continued to be poor during this period, with the exception of 2009. An investigation into the cause for the fawn low survival rate is warranted. The perception of the public is that predation is the primary cause for low fawn survival rates. However, the impacts from poor quality habitat such as lower birth rates and reduced birth weights have not been investigated in this herd unit.

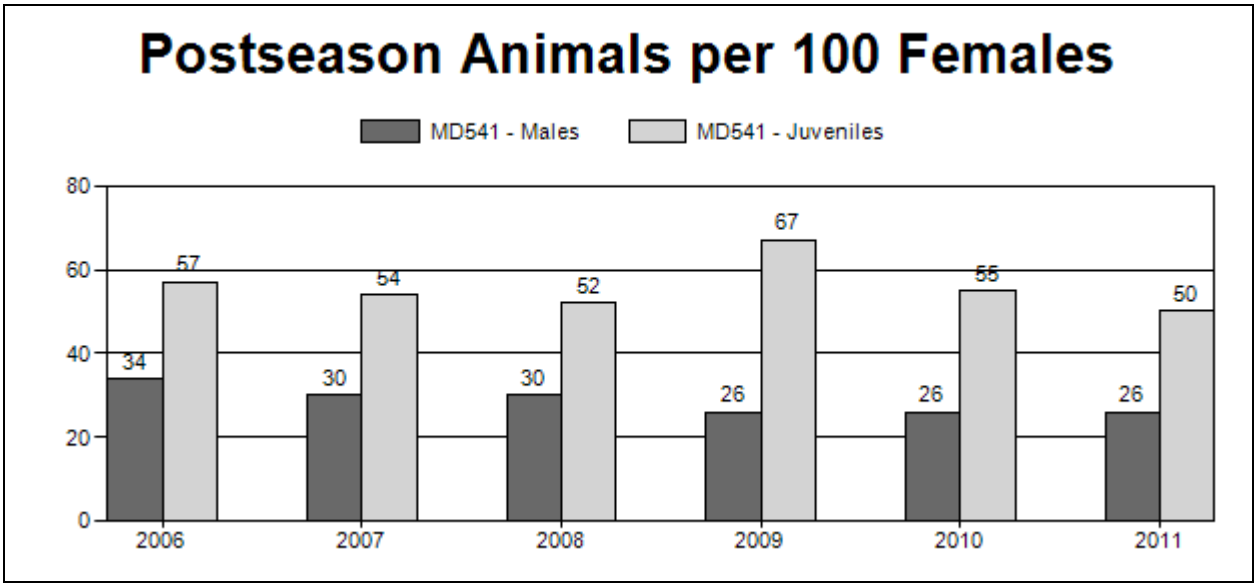


Figure 1. Platte Valley Herd Unit Postseason Animals per 100 Females, Wyoming 2006-2011.

2006 - 2011 Postseason Classification Summary for Mule Deer Herd MD541 - PLATTE VALLEY																		
		MALES				FEMALES		JUVENILES				Males to 100 Females				Young to		
Year	Post Pop	Ylg	Adult	Total	%	Total	%	Total	%	Tot Cls	Cls Obj	Ylng	Adult	Total	Conf Int	100 Fem	Conf Int	100 Adult
2006	32,500	165	271	436	18%	1,272	52%	729	30%	2,437	1,094	13	21	34	± 2	57	± 3	43
2007	28,000	262	534	796	16%	2,673	54%	1,451	29%	4,920	978	10	20	30	± 1	54	± 2	42
2008	25,060	199	386	585	17%	1,928	55%	1,003	29%	3,516	1,020	10	20	30	± 2	52	± 2	40
2009	24,221	65	207	272	13%	1,047	52%	700	35%	2,019	1,053	6	20	26	± 2	67	± 4	53
2010	21,627	111	222	333	14%	1,265	55%	701	30%	2,299	1,094	9	18	26	± 2	55	± 3	44
2011	11,120	114	340	454	15%	1,738	57%	865	28%	3,057	0	7	20	26	± 2	50	± 2	39

Table 1. Platte Valley Herd Unit Deer Postseason Classification Summary, Wyoming 2006-2011.

POPULATION MODELING

Wyoming Game and Fish Department (WGFD) used the POP-II computer program to model herd population dynamics for mule deer for over 2 decades. This program simulated the changes in the sex and age structure of the entire population based on input of observed in annual sex and age ratios for the population collected during postseason classification surveys, and the harvest.

The Platte Valley Herd Unit population estimate has been above the management objective of 20,000 mule deer since the early nineties. In 2004, WGFD instituted the use of standardized model parameters for the POP-II program for each big game species. In most cases, the use of these parameters resulted in model revisions with higher population estimates for many of Wyoming's big game herds. During the period of 2009-2011 the population estimate has decreased from 24,000 to 19,000 mule deer (Figure 2). Whether these estimates have been significantly influenced by of the use of the standardized parameters was not investigated.

Population estimates for the Platte Valley Herd Unit have been a contentious issue, both externally and internally, for several decades. Most stakeholders believed POP-II over estimated the number of deer present in this herd unit. This perception has limited WGFD's ability to effectively institute population control measures such as increased antlerless harvest due to a lack of confidence in the estimates. Poor buck harvest success in recent years combined with the public's recollection of great numbers of deer in the past only exacerbated the situation. Despite the debate about the accuracy of population estimates for this herd, most stakeholders recognize a decline in the number of deer for this herd unit has occurred. This trend also correlates well with the decline in buck harvest success rates and postseason fawn ratios.

In biological years 2008, 2010, and 2011, WGFD in conjunction with the Wyoming Cooperative Fish and Wildlife Research Unit conducted sightability surveys to estimate mule deer abundance in the Platte Valley Herd Unit. Results were abundance estimates of 12,955 (±267), 16,892 (±1,548), and 11,120 (±1,774) at a 90% confidence interval for biological years 2008, 2010, and 2011 respectively. Mark/re-sight estimates, derived in 2010 and 2011 from radio-collar marked mule deer observed/missed during the sightability surveys, were comparable to the respective abundance estimates. Results of these surveys indicated POP-II models over estimated mule deer numbers by an average of 38%. Due to results such as these and other concerns with POP-II models, WGFD will discontinue using the POP-II model for estimating big game population size in 2011. The 2012 hunting season proposal (included in this report) included a POP-II model simulation, for posterity. The 2011 postseason abundance or "population" estimate reported for the Platte Valley Herd Unit was based on the results of the sightability survey. The 2012 hunting season proposal also

included an Aerial Survey program (Unsworth et. al., 1999) report for the 2011 sightability survey abundance estimate. Future abundance estimates for this herd unit will be derived from spreadsheet models developed by Wyoming Cooperative Fish and Wildlife Research Unit, anchored to sightability survey estimates.

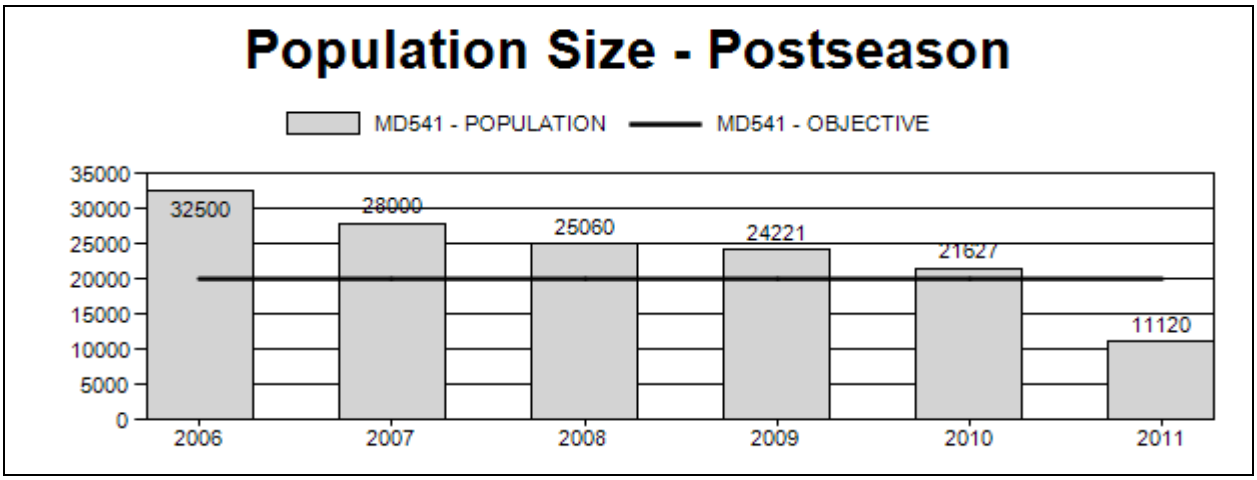


Figure 2. Platte Valley Herd Unit Population Size - Postseason, Wyoming 2006-2011.

HUNTING SEASON

The 2011 Platte Valley Mule Deer Herd Unit hunting season structure is described in figure 3.

2011 HUNTING SEASONS

MD541 - PLATTE VALLEY

Hunt Area	Add'l Hunt Areas	Type	Quota	Season Dates	Limitations
78		GEN		10/01 - 10/14	antlered mule deer or any white-tailed deer
78		Type 1	25	10/01 - 10/31	Any
78		Type 6	10	10/01 - 10/14	Reduced Price doe/fawn
79		GEN		10/01 - 10/14	antlered mule deer or any white-tailed deer
79		Type 6	10	10/01 - 10/14	Reduced Price doe/fawn
80		GEN		10/01 - 10/14	antlered mule deer or any white-tailed deer
80		Type 6	10	10/01 - 10/14	Reduced Price doe/fawn
81		GEN		10/01 - 10/14	antlered mule deer or any white-tailed deer
81		Type 6	10	10/01 - 10/14	Reduced Price doe/fawn
83		GEN		10/01 - 10/14	antlered mule deer or any white-tailed deer
161		GEN		10/15 - 10/25	antlered mule deer or any white-tailed deer

Figure 3. Platte Valley Mule Deer Herd Unit 2011 hunting season, Wyoming.

HARVEST

The Platte Valley Herd Unit was still very popular with General licensed mule deer hunters although hunter numbers declined during this period. This decline was due to implementation of more conservative antlered only hunting seasons and overall lower deer densities. Limited doe and fawn harvest continued during this period with area specific, reduced priced licenses being allocated. The majority of the overall harvest in this herd unit was attributed to the harvest of bucks in all years during this period. Over 25% of the buck harvest occurred in Hunt Area 78 (Figure 2). Hunt Area 78 was hunted by over 39% of all hunters who hunted the Platte Valley Herd Unit in 2011.

Weather conditions in this herd unit were favorable for successful deer hunting in 2009 with snowfall occurring at the higher elevations and cooler temperatures throughout the season. The weather conditions in 2010 and 2011 were very mild and dry, with temperatures barely dropping below freezing only in the higher elevations at night. Mild weather conditions are typically not conducive to deer harvest and contributed to the declining harvests of 2010 and 2011.

HUNTER STATISTICS

A decrease in active license numbers in 2009 was attributed in part to the decrease in the Region D nonresident license quota from 2,500 in 2008 to 2,200 licenses in 2009 (Figure 4 and Figure 5). The Region D nonresident license quota was lowered again in 2010 to 2,100. In 2010 nonresident numbers increased slightly and then declined again in 2011. Resident hunter numbers decreased incrementally during this time period (Figure 5.).

During the 2009-2011 period, overall active license harvest success decreased while days per animal harvested increased (Figure 6 and Figure 7). This inverse correlation between harvest success and days per animal harvested tracked well with the decrease in the population estimate during this period. Active license harvest success decreased from 37% in 2009 to 20% in 2011. The days per animal harvested increased from 15 days in 2009 to 27 days in 2011. In a general hunting season herd unit these statistics are often indicators for the "quality of the hunt." The 2011 harvest survey respondents indicated only 45% were satisfied, or very satisfied, with their hunting experience in the Platte Valley herd unit. Platte Valley Herd Unit hunter satisfaction ranked 36th out of 38 herd units statewide.

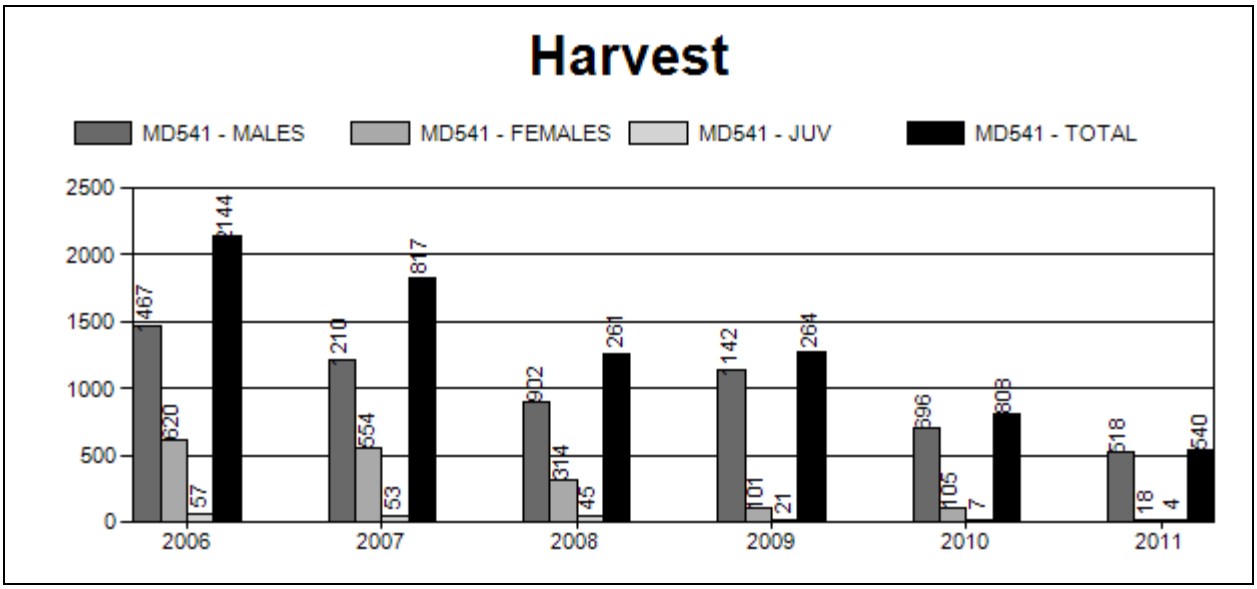


Figure 4. Platte Valley Herd Unit Harvest, Wyoming 2006-2011.

2011											
Area	Type	Active Lic/Htrs		Buck	Doe	Fawn	Total	Success		Days/ Harvest	Days	Licenses Sold
78 FRENCH CREEK												
	General	1014		126	0	0	126	12.4%		41.5	5228	
	Type 1	22		10	0	0	10	45.5%		12.4	124	26
	Type 6	9		0	3	0	3	33.3%		13	39	13
Pooled Total		1040	(1045)*	136	3	0	139	13.4%	(13.3%)*	38.8	5391	
Pooled Resident		866		102	2	0	104	12.0%		43.1	4482	
Pooled Nonresident		174		34	1	0	35	20.1%		26	909	
79 KENNADAY PEAK												
	General	659		152	0	0	152	23.1%		20.5	3113	
	Type 1	3		0	0	0	0	0.0%		0	7	0
	Type 6	6		0	2	0	2	33.3%		12	24	11
Pooled Total		668	(668)*	152	2	0	154	23.1%	(23.1%)*	20.4	3144	
Pooled Resident		391		65	2	0	67	17.1%		26.9	1801	
Pooled Nonresident		277		87	0	0	87	31.4%		15.4	1343	
80 SPRING CREEK												
	General	458		76	0	0	76	16.6%		33.6	2553	
	Type 6	6		0	6	0	6	100.0%		3.7	22	11
Pooled Total		459	(464)*	76	6	0	82	17.9%	(17.7%)*	31.4	2575	
Pooled Resident		298		29	6	0	35	11.7%		49.5	1734	
Pooled Nonresident		161		47	0	0	47	29.2%		17.9	841	
81 BLACKHALL												
	General	538		86	0	0	86	16.0%		30.3	2609	
	Type 6	15		0	7	4	11	73.3%		6.5	71	16
Pooled Total		542	(553)*	86	7	4	97	17.9%	(17.5%)*	27.6	2680	
Pooled Resident		389		59	3	1	63	16.2%		28.3	1784	
Pooled Nonresident		153		27	4	3	34	22.2%		26.4	896	
83 BOLTEN RIM												
	General	90		15	0	0	15	16.7%		26.6	399	
Pooled Total		90	(90)*	15	0	0	15	16.7%	(16.7%)*	26.6	399	
Pooled Resident		50		8	0	0	8	16.0%		27.5	220	
Pooled Nonresident		40		7	0	0	7	17.5%		25.6	179	
161 ST MARYS CREEK												
	General	93		53	0	0	53	57.0%		3.9	208	
Pooled Total		93	(93)*	53	0	0	53	57.0%	(57.0%)*	3.9	208	
Pooled Resident		56		40	0	0	40	71.4%		3.1	124	
Pooled Nonresident		37		13	0	0	13	35.1%		6.5	84	
2011 Hunt Area Total		2892	(2913)*	518	18	4	540	18.7%	(18.5%)*	26.7	14397	77
2011 Herd Total		2654	(2674)*	518	18	4	540	20.3%	(20.2%)*	26.7	14397	77

*Active Licenses

Table 2. Platte Valley Herd Unit Deer Harvest by Hunt Area, Wyoming 2011.

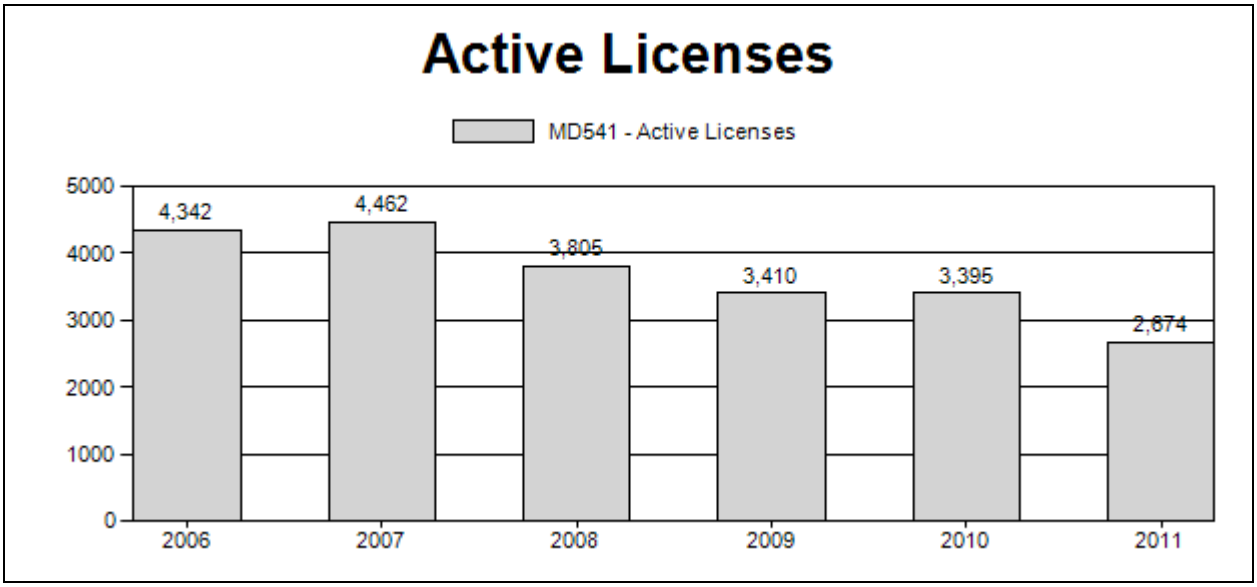


Figure 5. Platte Valley Herd Unit Population Size, Wyoming 2006-2011.

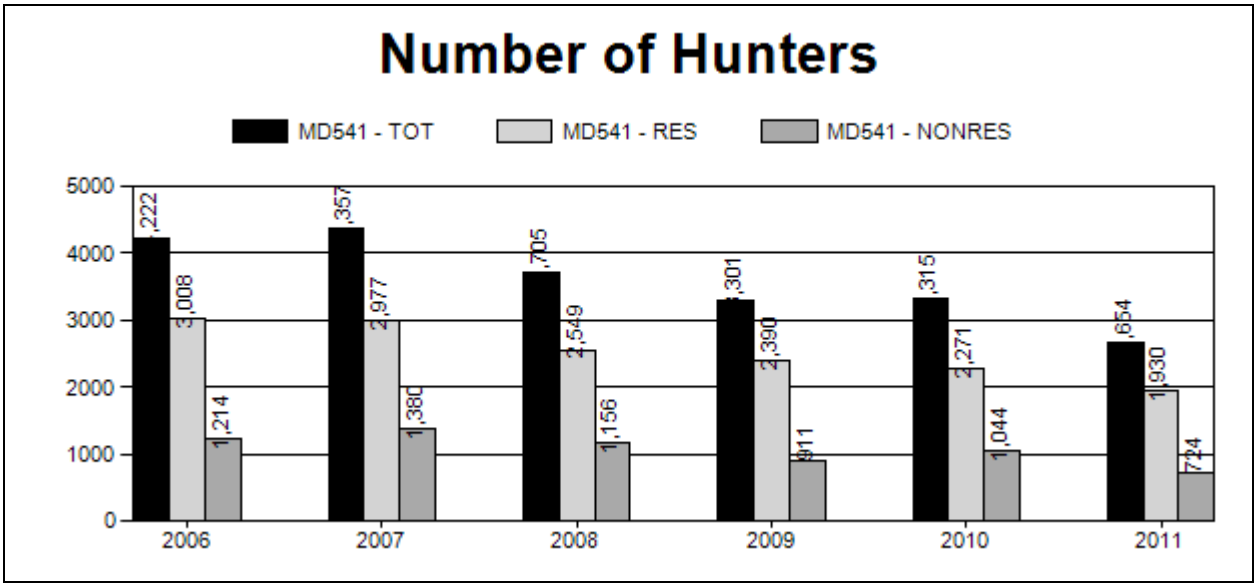


Figure 6. Platte Valley Herd Unit Number of Hunters, Wyoming 2006-2011.

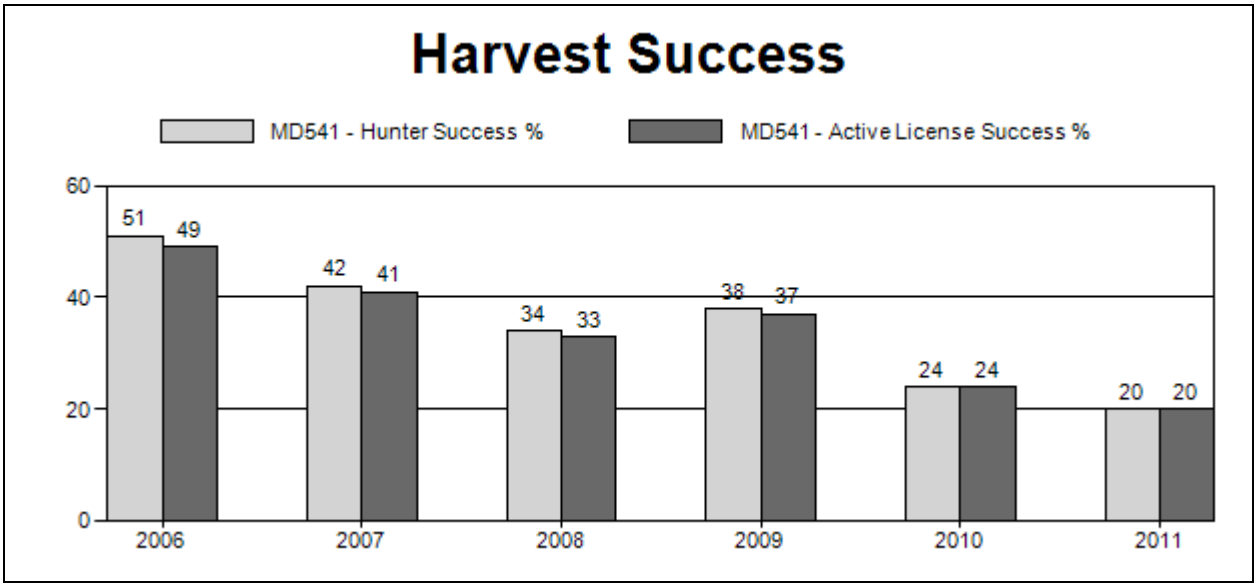


Figure 7. Platte Valley Herd Unit Harvest Success, Wyoming 2006-2011.

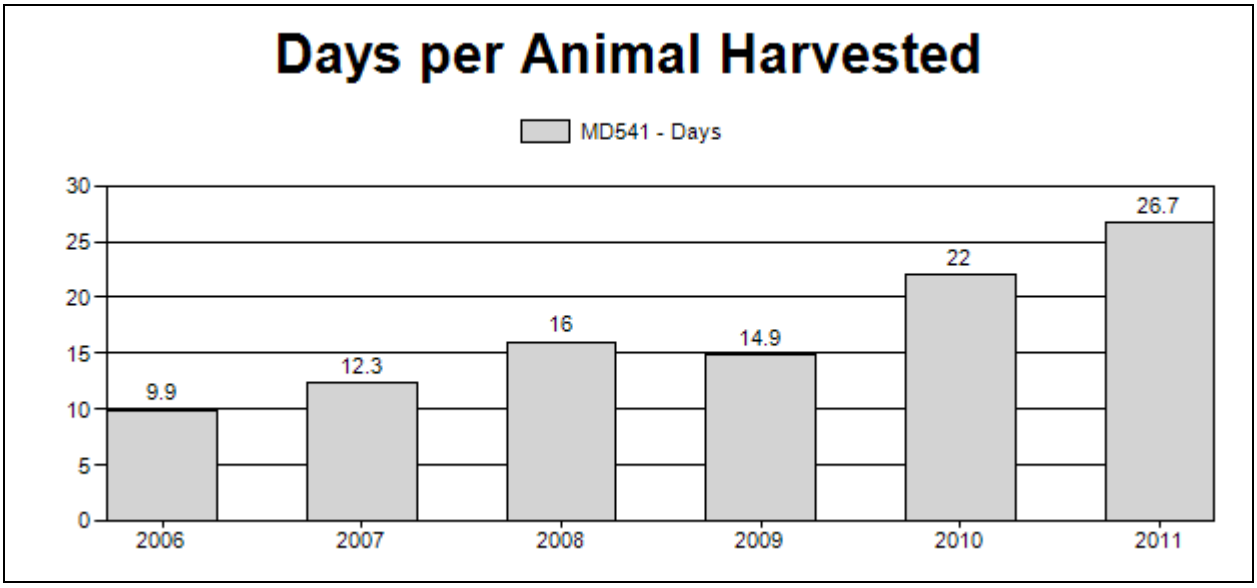


Figure 8. Platte Valley Herd Unit Days Per Animal Harvested, Wyoming 2006-2011.

HUNTER FIELD CHECKS

The age structure data for harvested mule deer was reported to 3 age classes: juvenile, yearling, and adult (Figures 8, 9, and 10). As demonstrated in the graphs, all data was based on field checked deer only. No mule deer teeth from this herd unit were submitted to the tooth aging laboratory for further analysis.

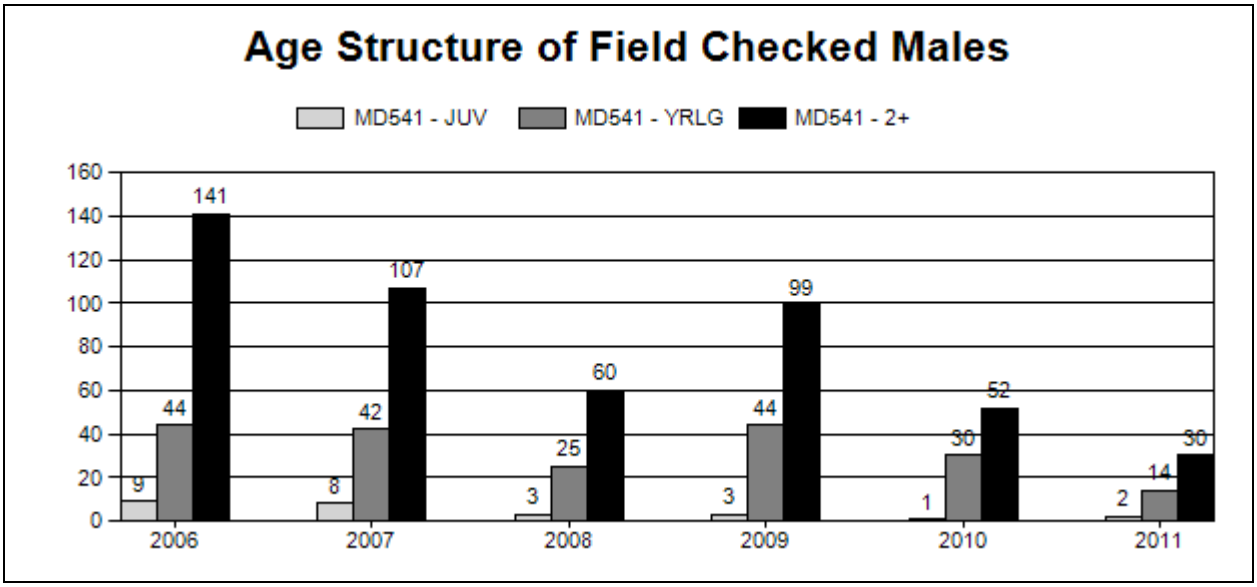


Figure 9. Platte Valley Herd Unit Age Structure of Field Checked Males, Wyoming 2006-2011.

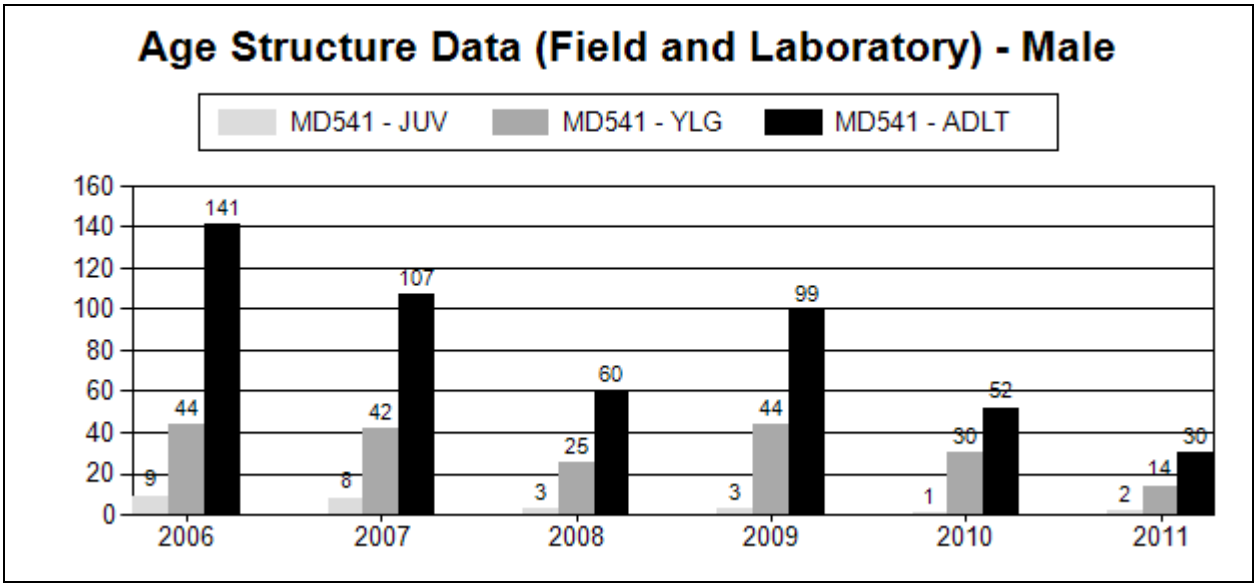


Figure 10. Platte Valley Herd Unit Age Structure Data (Field and Laboratory) - Male, Wyoming 2006-2011.

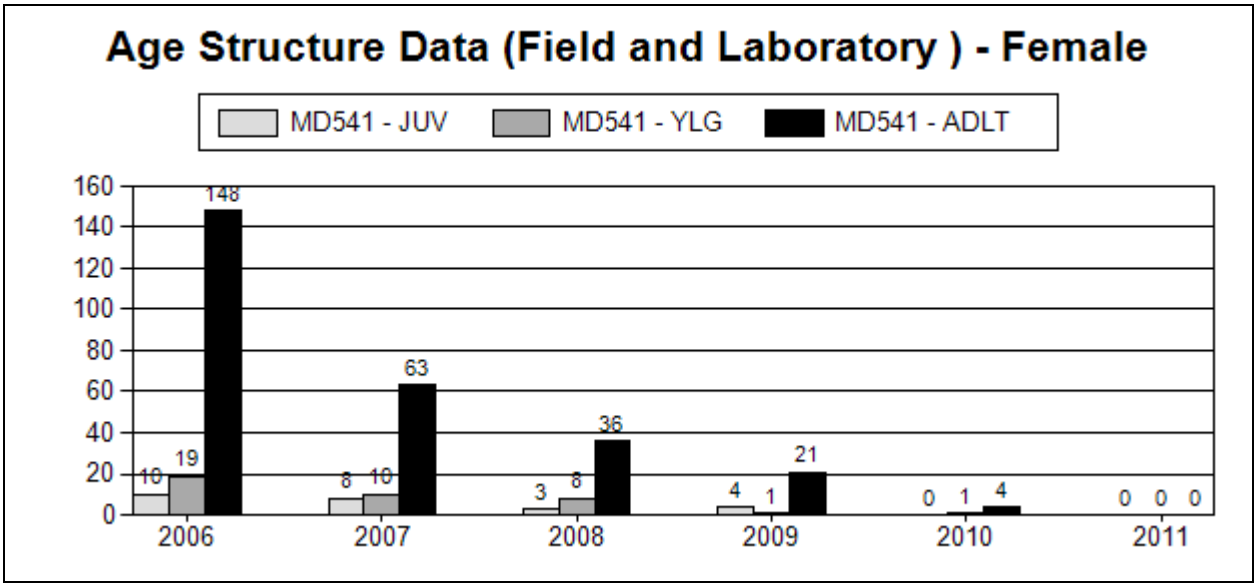


Figure 11. Platte Valley Herd Unit Age Structure Data (Field and Laboratory) - Female, Wyoming 2006-2011.

OTHER MANAGEMENT ISSUES

DISEASE

CWD has been documented in Hunt Areas 78-81 in the Platte Valley Herd Unit (Table 3). CWD Surveillance of hunter-harvested deer was intensified in the early years of this past decade as part of a statewide surveillance effort. In recent years surveillance efforts in hunt areas where CWD was endemic was decreased due to budget constraints. Surveillance in Hunt Areas 83 and 161 has been poor due to the low number of hunters in these hunt areas. Mule deer observed exhibiting clinical signs of CWD have been collected opportunistically in this herd unit and are reported as "Targeted" in the table below. Overall, the Platte Valley Herd Unit has a low prevalence rate of 1.3% for all mule deer tested. CWD has been documented in elk and white-tailed deer from this area but it has not been detected in moose from this area.

Hunt Area	Harvest Surveillance	Harvest Surveillance Positive	Targeted	Targeted Positive
78	871	11	4	1
79	316	5	4	0
80	252	0	4	1
81	341	5	2	0
83	10	0	0	0
161	30	0	0	0
Herd Unit Totals	1,820	21	14	2

Table 3. Platte Valley Herd Unit CWD Surveillance, Wyoming 1999-2011.

PARASITES

In April of 2009, an adult mule deer buck collected in Hunt Area 80 was found to have a heavy infestation of the exotic louse *Bovicola tibialis*. This was the first documented observation of this exotic parasite in Wyoming. *Bovicola tibialis* has been linked to localized mule deer declines in several western states. Since

2009, this exotic louse has been documented in 7 counties throughout Wyoming and on at least 2 more mule deer in the Platte Valley Herd Unit.

HABITAT

ON-GOING/COMPLETED PROJECTS

The Conservation Research Center for Teton Science Schools, Jackson, was contracted to complete an assessment of the mule deer habitat in the Platte Valley Mule Deer Herd Unit in 2008. Fieldwork for the southern section was completed in 2008, and the northern section was completed in 2009. The assessment report was not well received by landowners in the Platte Valley Herd Unit. Most concerns were focused on the broad assessments applied to private lands, identifying them as managed poorly with respect to livestock grazing, or, in need of noxious weed control. WGFD personnel spent a considerable amount of time during this period addressing these concerns, and ultimately removed the report from the WGFD website. WGFD personnel provided apologies to the Saratoga, Encampment, Rawlins Conservation District, and to landowners who participated in the assessment and felt their property was misrepresented in the assessment report.

In May of 2012, WGFD initiated the Platte Valley Habitat Partnership (PVHP). This is a collaborative approach to address mule deer habitat issues in the Platte Valley Herd Unit. The PVHP is comprised of landowners, sportspersons, federal land management agencies, WGFD, Saratoga, Encampment, Rawlins Conservation District, and several non-governmental organizations. Wyoming Game and Fish Commission allocated $500,000 to the PVHP to be granted towards habitat projects in the herd unit. The goal for the first year of the PVHP is to develop a Platte Valley mule deer habitat management plan and to identify specific areas to implement habitat improvements.

ISSUES DISCUSSION

Mule deer habitat quality has been exacerbated by continued drought conditions sustained during this past decade. Elk and other ungulates are assumed to compete with mule deer on much of their overlapping ranges. Efforts have continued to reduce the Snowy Range and Sierra Madre Elk Herds towards their management objectives but progress in accomplishing this task has been slow.

WYOMING MULE DEER INITATIVE

In July of 2007 the Wyoming Game and Fish Commission adopted the *Wyoming Mule Deer Initiative* (WGFD, 2007). The *Wyoming Mule Deer Initiative* "outlines the issues affecting deer management now and in the future, identifies the appropriate goals and objectives to address mule deer management issues, and recommends strategies to improve mule deer management in Wyoming." The Department selected the Platte Valley Mule Deer Herd Unit as one of the first areas in which to implement the concepts outlined in the *Wyoming Mule Deer Initiative*.

In 2008, WGFD personnel associated with the Platte Valley Herd Unit began meeting for the purpose of developing a document that would identify and provide guidance with regard to mule deer issues for this herd unit. WGFD personnel formulated problem statements under the categorical headings of Habitat Management, Population Management, and Public involvement and Outreach to capture the issues identified for this herd unit. Although these discussions never produced a final document, it provided a beginning for what became known as the Platte Valley Mule Deer Initiative (PVMDI).

The PVMDI began to take form in the spring of 2011, following several informal meetings with local sportspersons and landowners who were concerned about the status of mule deer in the Platte Valley Herd Unit. WGFD contracted a facilitator and began a series of public meetings to collaboratively develop the Platte Valley Mule Deer Plan - DRAFT (WGFD 2012). Copies of the plan are available through WGFD offices and electronically at the link listed below.
http://wgfd.wyo.gov/web2011/Departments/Wildlife/pdfs/PVMD_MGMTPLAN_DRAFT0001661.pdf

Efforts to continue engaging the public collaboratively in the management of mule deer for this herd unit will be accomplished through annual public meetings. Continued mule deer research in this herd unit and the formation of the PVHP are also considered to be components of the PVMDI effort. Many of the management recommendations listed below were derived directly from the Draft Platte Valley Mule Deer Plan - DRAFT.

MANAGEMENT RECOMMENDATIONS

1. Continue implementing components of the *Wyoming Mule Deer Initiative*, through the PVMDI, such as mule deer research, collaborative management, and habitat improvement under the PVHP.

2. Begin using spreadsheet models developed by Wyoming Cooperative Fish and Wildlife Research Unit to simulate population dynamics and produce annual abundance estimates anchored to sightability survey estimates.

3. Improve fawn survival by reducing predator and trophy game population numbers in the Platte Valley Herd Unit.

4. Implement limited quota hunting seasons to improve the quality of the hunt and to align hunter numbers with the mule deer resource. Evaluate this hunting season strategy in 2016.

5. Continue to monitor browse production and utilization, as well as overall range health in the Platte Valley Herd Unit.

6. Continue to work with land management agencies to mitigate the impacts of energy development in the Platte Valley Herd Unit.

SPECIAL STUDIES

FINAL REPORTS/ON-GOING PROJECTS

In February of 2009, the Department conducted a mule deer sightability survey in the Platte Valley Herd Unit following a technique developed in Idaho (Unsworth et. al., 1999). The intent of this survey was to develop an abundance estimate for comparison with the population estimate generated from the POP-II program. The results of this survey were appended to the 2008 Job Completion Report (WGFD 2010).

In 2010, WGFD in conjunction with the Wyoming Cooperative Fish and Wildlife Research Unit began a multifaceted research project which involved radio-collaring 70 mule deer. The project's objectives were to better delineate mule deer habitat use patterns, estimate survival, and evaluate the use of sightability surveys to produce abundance estimates for mule deer. Preliminary results from the sightability surveys were

discussed previously in this report under the Population Modeling section. A final report for this research project should be completed in 2014.

COMPLETED STUDIES AND PROJECTS LIST

Newman, J. 1968. Deer Distribution and Movement Studies. Final Report. Wyoming Game and Fish Department, Cheyenne.

Strickland, M. D. 1975. An investigation of the factors affecting the management of a migratory mule deer herd in southeastern Wyoming – the Snowy Range. Ph.D. Dissertation, University of Wyoming, Laramie. 171 pp.

Yost, J. 2009. North Park Deer Movement and Distribution Study Update - March, 2009. Colorado Division of Wildlife, Steamboat Springs. 4 pp.

Wyoming Game and Fish Dept. 2012. Platte Valley Mule Deer Plan – DRAFT. Wyoming Game and Fish Department, Cheyenne. 90 pp.

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Mule Deer Working Group. 2007. The Wyoming Mule Deer Initiative, Wyoming Game and Fish Department, Cheyenne. 53 pp.

Newman, J. 1968. Deer Distribution and Movement Studies. Final Report. Wyoming Game and Fish Department, Cheyenne.

Strickland, M. D. 1975. An investigation of the factors affecting the management of a migratory mule deer herd in southeastern Wyoming – the Snowy Range. Ph.D. Dissertation, University of Wyoming, Laramie. 171 pp.

Unsworth, J. W., F. A. Leban, E. O. Garton, D. J. Leptich, and P. Zager. 1999. Aerial Survey: User's Manual. Electronic Edition. Idaho Department of Fish & Game, Boise.

Ward, A. L., J. J. Cupal, G. A. Goodwin and H. D. Morris. 1976. Effects of highway construction and use on big game populations. Rept. No. FHWA-RD-76-174, Federal Highway Administration, Washington, D.C. 92 pp.

Wyoming Game and Fish Dept. 2007. Big Game Management Parameter Update – 'Recreational' vs. 'Special' Management. Memorandum. Wyoming Game and Fish Department, Cheyenne. 3 pp.

_____. 2010. Platte Valley Mule Deer Herd Unit 2008 Job Completion Report Wyoming Game and Fish Department, Laramie. 44 pp.

_____. 2012. Platte Valley Mule Deer Plan – DRAFT. Wyoming Game and Fish Department, Cheyenne. 90 pp.

Yost, J. 2009. North Park Deer Movement and Distribution Study Update - March, 2009. Colorado Division of Wildlife, Steamboat Springs. 4 pp.

Platte Valley Mule Deer (MD541)
Hunt Areas 78-81, 83 & 161
2012 Season Recommendations

Hunt Area	Type	Date of Seasons Opens	Closes	Limitations
*78, *79, *80, *81**, 83**		Oct. 1	Oct. ~~14~~ **7**	General license; antlered mule deer **3 points or more on either antler** or any white-tailed deer
	1	Oct. 1	Oct. 31	Limited quota; ~~25~~ **10** licenses **antlered** deer
78, *79, *80,*81, 161	3	~~Nov.~~ **Oct.** 1	Nov. 30	Limited quota; 25 licenses any white-tail deer
~~*78~~	~~6~~	~~Oct. 1~~	~~Oct. 14~~	~~Limited quota; 10 licenses doe or fawn~~
~~*79~~	~~6~~	~~Oct. 1~~	~~Oct. 14~~	~~Limited quota; 10 licenses doe or fawn~~
~~*80~~	~~6~~	~~Oct. 1~~	~~Oct. 14~~	~~Limited quota; 10 licenses doe or fawn~~
~~*81~~	~~6~~	~~Oct. 1~~	~~Oct. 14~~	~~Limited quota; 10 licenses doe or fawn~~
*78, *79, *80, *81, 161	8	Sept. 1	Dec. 15	Limited quota; 25 licenses doe or fawn white-tailed deer
161		Oct. 15	Oct. 25	General license; antlered mule deer **3 points or more on either antler** or any white-tailed deer
Archery				Refer to Section 4 of this Chapter

Summary of Proposed Changes in License Numbers

Hunt Area	Type	Change From 2011
78	1	-15
78	6	-10
79	6	-10
80	6	-10
81	6	-10
Totals	1	-15
	6	-40

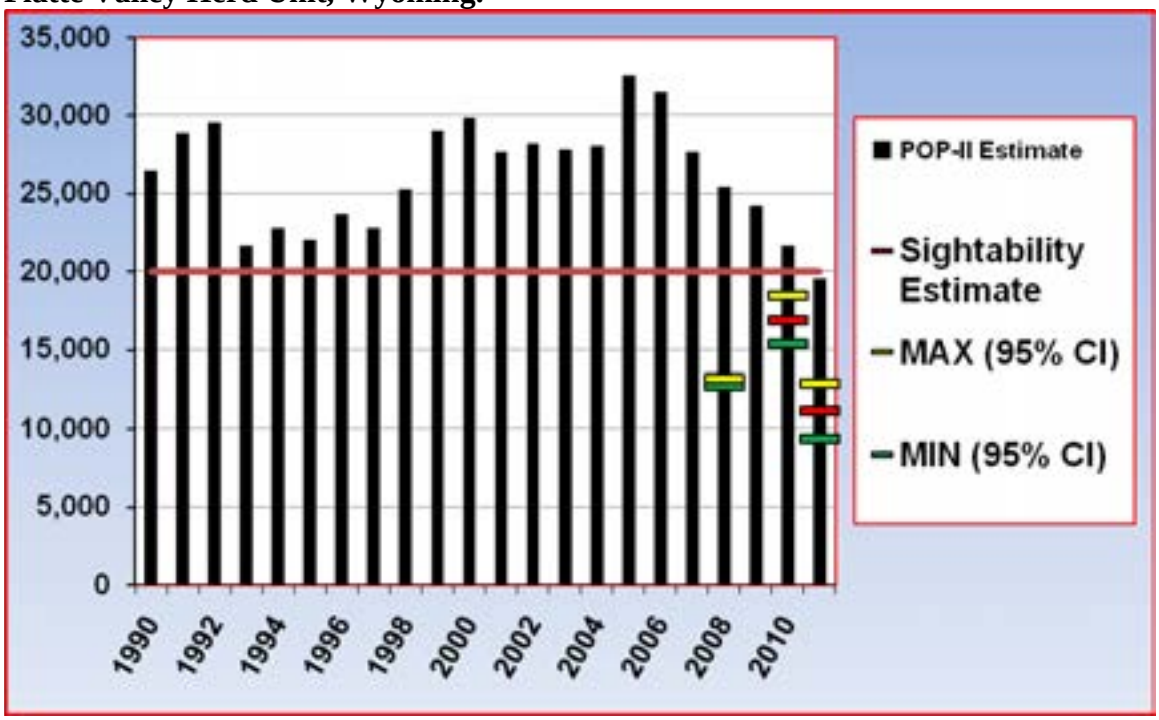
Management Evaluation

The 2011 Platte Valley Herd Unit postseason classification ratios were 26 bucks and 50 fawns/100 does, based on an adequate sample of 3,057 mule deer. The total buck ratio remained the same as in 2010. However, the observed fawn ratio was 10% lower than the previous year. Harvest data from hunter checks indicated the proportion of yearling bucks harvested during 2011 was 31% (n=11), which decreased from the 37% (n=30) observed during the 2010 season.

In 2009, the Department's first mule deer abundance sightability survey was completed in this herd unit. Results from this survey indicated a postseason population 48% lower than an estimate reported from the 2008 POP-II model estimate. In July of 2010, the Department initiated a mule deer research project, through the UW Wyoming Fish and Wildlife Cooperative Research Unit, to investigate the application of sightability surveys

for monitoring mule deer abundance. Sightability surveys were conducted in February of 2011 and 2012 for the Platte Valley herd unit. Results from all sightability surveys were lower than the corresponding annual POP-II model estimates (Figure 1). Recently, a decision was made to adopt a spreadsheet modeling program to replace the POP-II modeling program. This program will be used to monitor population dynamics and produce the annual postseason population estimates for big game herd in Wyoming. Future population estimates for this herd unit will be derived from a spreadsheet model, anchored to sightability abundance estimates.

Figure 1. A comparison of 1990-2011 mule deer postseason population estimates, Platte Valley Herd Unit, Wyoming.



The mid-winter abundance estimates from the 2010 and 2011 sightability surveys were 16,892 and 11,120, respectively. These estimates indicated a decline of 34% occurred for the number of mule deer wintering in the Platte Valley herd unit. For comparison, 27% (n=19) of the radio-collared adult mule deer in this herd unit died due to various causes during this period. It was assumed late winter fawn mortalities increased in 2011 due to the severity of the prolonged winter. Cumulatively, this information indicated mule deer numbers were well below the postseason management objective and had declined in recent trend.

Harvest

Total harvest in the Platte Valley herd unit decreased 37% in 2011 to 516 mule deer. Hunter numbers decreased 20% (n=2,645) in 2011. Buck harvest success decreased 2% to 20% in 2011. Field-checked yearling buck harvest percentage decreased from 37% in 2010 to 31% (n=11) in 2011. The decrease in the total buck harvest success was attributed to poor hunting conditions caused by warm, dry weather which occurred during the General hunting season, and less deer. However, the poor hunting conditions also attributed to maintaining a postseason buck ratio of 26 bucks/100 does in this herd unit. Had hunting conditions been better, this postseason ratio would not have been maintained. A telemetry flight conducted 2 days prior to the hunting season indicated a large proportion of the radio-collared deer from the southern portion of the herd unit were still on their summer range in Colorado.

2012 Season Proposal

The 2012 General season length is proposed to be reduced 50% to 7 days in length. The Type 1 numbers will be reduced to 10 licenses. Type 6 licenses will not be issued in 2012. General and Type 1 licenses will be limited to the harvest of antlered mule deer 3 points or more on either antler, or any white-tailed deer. This conservative season proposal will allow recreational hunting opportunities to continue for General licensed mule deer hunters in 2012, while promoting optimal recruitment of yearling bucks into future adult age classes.

A decision to propose a reduced season length, in conjunction with an antler point restriction, is supported by the following points relative to the current status of the Platte Valley herd unit:

a.) The winter abundance estimate (11,120) for this herd unit was well below the management objective (20,000).

b.) The 2011 fawn ratio (50/100 does) was the lowest observed since 1993 (44/100 does).

c.) Although the 2011 buck ratio (26/100 does) was within the parameters for the recreational management strategy, data from radio-collared mule deer suggested the total number of bucks which are conceivably available to Wyoming hunters during the early October hunting season, particularly in the southern portion of this herd unit, may not be accurately represented in the observed postseason buck ratio.

Data Set: MD541_2012_SEASON_.GN1 03/05/2012 07:17 am Page 1

MD541_2012_SEASON
Data from 1987 to 2012 Simulation from 2001 to 2012

Age Class	Init Pop. Male	Init Pop. Female	Presn Male	Mort% Female	Postsn Mort% Male	Postsn Mort% Female	Effort Set 1 Male	Effort Set 1 Female	Effort Set 2 Male	Effort Set 2 Female
0	10489.0	10489.0	50.0	50.0	50.0	45.0	1.00	1.00	1.00	1.00
1	2234.0	2508.0	2.0	2.0	10.0	5.0	1.40	1.00	0.50	1.00
2	1951.0	2681.0	2.0	2.0	10.0	5.0	1.00	1.00	1.00	1.00
3	1119.0	2203.0	2.0	2.0	10.0	5.0	1.00	1.00	1.00	1.00
4	649.0	1802.0	2.0	2.0	10.0	5.0	1.00	1.00	1.00	1.00
5	432.0	1461.0	2.0	2.0	10.0	5.0	1.00	1.00	1.00	1.00
6	348.0	1481.0	2.0	2.0	15.0	10.0	1.00	1.00	1.00	1.00
7	169.0	955.0	2.0	2.0	20.0	20.0	1.00	1.00	1.00	1.00
8	84.0	598.0	2.0	2.0	40.0	30.0	1.00	1.00	1.00	1.00
9	30.0	351.0	2.0	2.0	60.0	40.0	1.00	1.00	1.00	1.00
10	24.0	419.0	2.0	2.0	80.0	50.0	1.00	1.00	1.00	1.00
11	3.0	239.0	2.0	2.0	100.0	60.0	1.00	1.00	1.00	1.00
12	0.0	115.0	2.0	2.0	100.0	75.0	1.00	1.00	1.00	1.00
13	0.0	32.0	2.0	2.0	100.0	85.0	1.00	1.00	1.00	1.00
14	0.0	3.0	2.0	2.0	100.0	95.0	1.00	1.00	1.00	1.00
15	0.0	0.0	2.0	2.0	100.0	100.0	1.00	1.00	1.00	1.00

Sum = 42869.0 Estimated Sum = 42869 Subadults: Ages 0 to 0

Data Set: MD541_2012_SEASON_.GN1 03/05/2012 07:17 am Page 2

MSI Function is Linear

Bio-Year	Preseason MSI	Harvest // Des. Pop Size in NA Subadults#	Males#	Females#	Postseason MSI	Effort & Wound Set Used
1987	1.00	14	1596	64	1.00	1
1988	0.74	57	1736	643	1.00	1
1989	0.86	37	1168	651	1.00	1
1990	0.95	40	1497	486	0.70	1
1991	1.17	69	1526	532	1.00	1
1992	1.14	33	1513	819	1.70	2
1993	1.48	25	1036	654	1.20	2
1994	1.22	0	818	0	1.30	1
1995	1.21	0	575	0	0.90	1
1996	1.15	0	799	0	1.10	1
1997	1.27	0	508	0	0.70	1
1998	1.19	0	700	0	0.70	1
1999	0.99	0	1180	0	0.90	2
2000	1.01	0	1866	0	1.10	2
2001	1.22	0	1564	0	1.00	1
2002	1.13	35	1756	378	1.10	2
2003	1.13	62	1384	395	0.90	2
2004	1.19	17	1767	420	0.50	2
2005	1.13	23	1595	277	1.00	2
2006	1.24	57	1467	620	1.30	2
2007	1.32	53	1210	554	1.25	2
2008	1.33	41	901	306	1.41	2
2009	1.15	21	1142	101	1.34	1
2010	1.28	7	696	105	1.40	1
2011	1.36	4	516	18	1.20	1
2012	1.23	0	350	0	1.20	1

Set 1	Wounding Loss	10.%	10.%	10.%	Yearling Male 10.%
Set 2	Wounding Loss	10.%	10.%	10.%	Yearling Male 10.%

Bio-Year	Young/100 Fems Age 1 - 1	Young/100 Fems Age 2 - 15	Young/100 Fems Disabled	Sex Ratio: 50 : 50
1988	0.0	170.0	0.0	
1989	0.0	170.0	0.0	
1990	0.0	170.0	0.0	
1991	0.0	170.0	0.0	
1992	0.0	170.0	0.0	
1993	0.0	170.0	0.0	
1994	0.0	170.0	0.0	
1995	0.0	170.0	0.0	
1996	0.0	170.0	0.0	
1997	0.0	170.0	0.0	
1998	0.0	170.0	0.0	
1999	0.0	170.0	0.0	
2000	0.0	170.0	0.0	
2001	0.0	170.0	0.0	
2002	0.0	170.0	0.0	
2003	0.0	170.0	0.0	
2004	0.0	170.0	0.0	
2005	0.0	170.0	0.0	
2006	0.0	170.0	0.0	
2007	0.0	170.0	0.0	
2008	0.0	170.0	0.0	
2009	0.0	170.0	0.0	
2010	0.0	170.0	0.0	
2011	0.0	170.0	0.0	
2012	0.0	170.0	0.0	
2013	0.0	170.0	0.0	

POP-II (V1.2.9) Simulation Output Tables for MD541_2012_SEASON_.GN1, 03/05/2012 07:17 am

Table 1. Population Size During Bio-Year for MD541_2012_SEASON_.GN1 03/05/2012 07:17 am

Bio-Year	Start	Pre-Season	Post Season	End	%Growth
2001	42869	29538	27818	21725	1.7
2002	43596	30748	28362	21128	-2.3
2003	42615	29997	27972	22178	3.4
2004	44078	30520	28096	24915	10.4
2005	48678	34689	32605	25036	2.6
2006	49957	33885	31527	22309	-8.4
2007	45744	29688	27689	20179	-9.1
2008	41580	26812	25439	17755	-10.6
2009	37162	25595	24204	16563	-7.6
2010	34346	22541	21652	14902	-8.3
2011	**31495**	**19807**	**19215**	**14092**	**-6.6**
2012	29425	19649	19264	13706	-5.3

Table 2. Preseason Natural Mortality for MD541_2012_SEASON_.GN1 03/05/2012 07:17 am

Bio-Year	Sub-Adults	Adult Males	Adult Females	Total	% of Pop
2001	12797	172	362	13331	31.1
2002	12357	149	342	12848	29.5
2003	12140	138	340	12618	29.6
2004	13030	156	372	13558	30.8
2005	13426	170	393	13989	28.7
2006	15451	187	434	16072	32.2
2007	15467	174	415	16056	35.1
2008	14231	156	381	14768	35.5
2009	11159	116	293	11568	31.1
2010	11381	114	310	11805	34.4
2011	**11284**	**108**	**298**	**11689**	**37.1**
2012	9430	95	252	9777	33.2

Table 3. Harvest Mortality for MD541_2012_SEASON_.GN1 03/05/2012 07:17 am

Bio-Year	Sub-Adults	Adult Males	Adult Females	Total	% of Pop
2001	0	1564	0	1564	5.3
2002	35	1756	378	2169	7.1
2003	62	1384	395	1841	6.1
2004	17	1767	420	2204	7.2
2005	23	1595	277	1895	5.5
2006	57	1467	620	2144	6.3
2007	53	1210	554	1817	6.1
2008	41	901	306	1248	4.7
2009	21	1142	101	1264	4.9
2010	7	696	105	808	3.6
2011	**4**	**516**	**18**	**538**	**2.7**
2012	0	350	0	350	1.8

Table 4. Harvest Percentages for MD541_2012_SEASON_.GN1 03/05/2012 07:17 am

Bio-Year	Sub-Adults	Adult Males	Adult Females	Total	Yearling Males
2001	0.0	22.8	0.0	5.29	39.4
2002	0.4	27.2	2.6	7.05	18.3
2003	0.7	23.2	2.7	6.14	21.2
2004	0.2	27.7	2.8	7.22	24.3
2005	0.2	21.7	1.6	5.46	28.4
2006	0.6	19.9	3.6	6.33	20.6
2007	0.7	18.9	3.6	6.12	14.3
2008	0.6	15.8	2.2	4.65	14.5
2009	0.3	23.2	0.8	4.94	27.0
2010	0.1	16.0	0.9	3.58	37.9
2011	**0.1**	**13.4**	**0.2**	**2.72**	**30.9**
2012	0.0	9.3	0.0	1.78	34.7

Table 5. Postseason Natural Mortality for MD541_2012_SEASON_.GN1 03/05/2012 07:17 am

Bio-Year	Sub-Adults	Adult Males	Adult Females	Total	% of Pop
2001	3886	586	1620	6093	21.9
2002	4951	565	1718	7234	25.5
2003	3967	451	1376	5793	20.7
2004	2102	248	830	3180	11.3
2005	4898	620	2050	7568	23.2
2006	5809	814	2594	9218	29.2
2007	4696	690	2124	7510	27.1
2008	4771	728	2185	7684	30.2
2009	5235	552	1854	7641	31.6
2010	4252	591	1907	6750	31.2
2011	**3024**	**492**	**1607**	**5123**	**26.7**
2012	3365	536	1657	5557	28.8

Table 6. Preseason Ratios for MD541_2012_SEASON_.GN1 03/05/2012 07:17 am

Bio-Year	Subadults /100 1+F	2+ Males /100 1+F	Yr. Males /100 1+F	Ad Males /100 1+F
2001	56.5	32.4	15.0	47.4
2002	64.4	30.2	13.5	43.7
2003	63.6	26.4	14.2	40.6
2004	58.1	25.5	16.3	41.8
2005	60.8	24.1	19.1	43.1
2006	55.5	28.4	14.7	43.1
2007	52.0	31.3	10.5	41.8
2008	51.4	30.6	10.4	40.9
2009	66.4	31.3	8.3	39.6
2010	54.3	25.7	11.2	37.0
2011	**49.9**	**27.4**	**8.8**	**36.2**
2012	59.1	27.3	10.4	37.6

Table 7. Postseason Ratios for MD541_2012_SEASON_.GN1 03/05/2012 07:17 am

Bio-Year	Subadults /100 1+F	2+ Males /100 1+F	Yr. Males /100 1+F	Ad Males /100 1+F
2001	56.5	25.2	10.4	35.6
2002	66.0	20.1	11.5	31.5
2003	65.1	18.8	12.4	31.1
2004	59.8	16.3	13.6	30.0
2005	61.7	17.0	16.4	33.4
2006	57.4	21.7	13.3	35.0
2007	53.8	24.8	9.6	34.4
2008	52.4	25.1	9.6	34.7
2009	66.8	24.2	5.6	29.8
2010	54.8	21.9	8.8	30.8
2011	**49.9**	**23.8**	**7.1**	**30.9**
2012	59.1	24.7	9.0	33.8

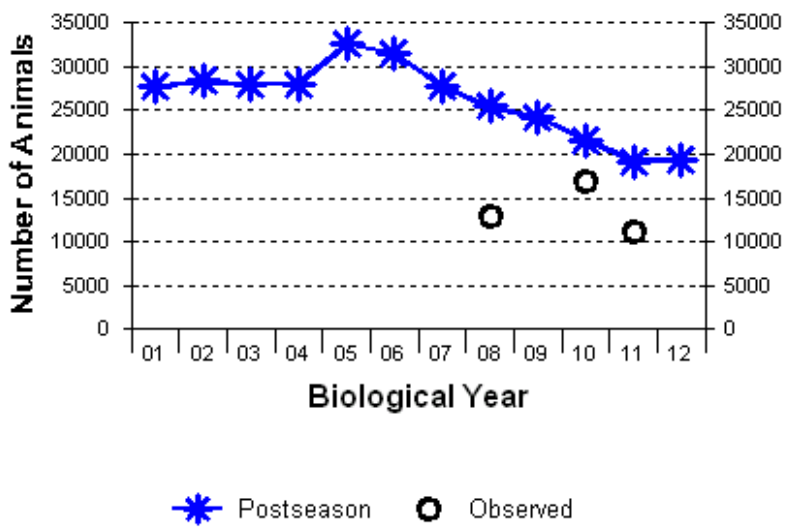
Table 8. End of Year Ratios for MD541_2012_SEASON_.GN1 03/05/2012 07:17 am

Bio-Year	Subadults /100 Adlts	Subadults /100 1+F	Yr. Males /100 1+F	Ad Males /100 1+F
2001	24.6	33.4	10.5	35.5
2002	27.3	35.8	11.6	31.4
2003	31.5	41.2	12.4	30.9
2004	37.1	48.3	13.7	30.0
2005	27.6	36.9	16.9	33.9
2006	19.2	26.1	13.8	35.7
2007	18.9	25.5	9.8	34.8
2008	15.3	20.6	9.8	34.9
2009	22.0	28.6	5.7	29.8
2010	16.8	21.9	9.1	30.7
2011	**19.3**	**25.3**	**7.4**	**30.9**
2012	22.7	30.5	9.5	34.1

Table 9. Reproduction at Start of Bio-Year for MD541_2012_SEASON_.GN1 03/05/2012 07:17 am

Bio-Year	**Young / 100 AF 1 +**	**Sub-Ad. / 100 AF 1 +**	**Total Young**	**Total Sub-Adult**	**Total Females 1 +**
2001	141	141	20978	20978	14848
2002	145	145	21871	21871	15115
2003	143	143	21487	21487	15032
2004	140	140	21900	21900	15643
2005	137	137	23763	23763	17408
2006	142	142	24921	24921	17495
2007	149	149	23434	23434	15737
2008	149	149	21400	21400	14319
2009	153	153	19407	19407	12718
2010	147	147	17783	17783	12093
2011	**152**	**152**	**16594**	**16594**	**10944**
2012	150	150	15333	15333	10240

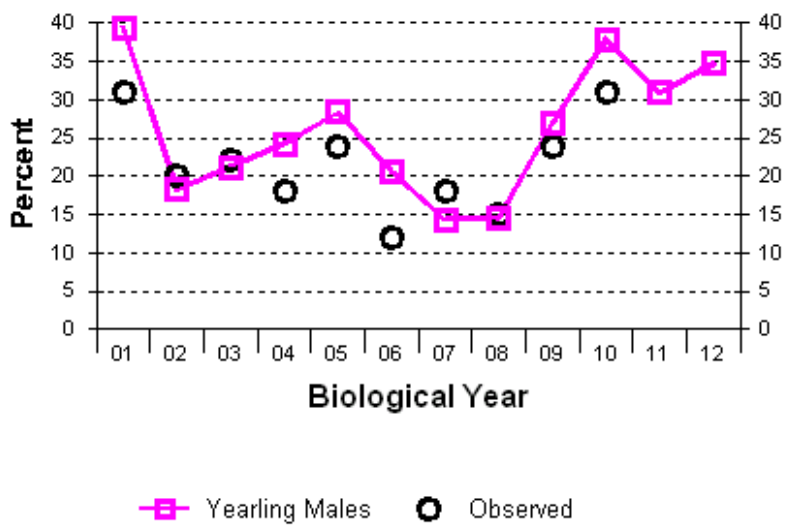
POP-II (V1.2.9) Graph 1. Population Size During Bio-Year



012_SEASON_.GN1, 03/05/2012 07:17 am, Correlation (R) = 0.191, GOF = 0.34

YR	SIM	OBS
01	27818	-----
02	28362	-----
03	27972	-----
04	28096	-----
05	32605	-----
06	31527	-----
07	27689	-----
08	25439	12955
09	24204	-----
10	21652	16892
11	19215	11120
12	19264	-----
	AVERAGES	
of Col.	26154	
of Pair	22102	13656

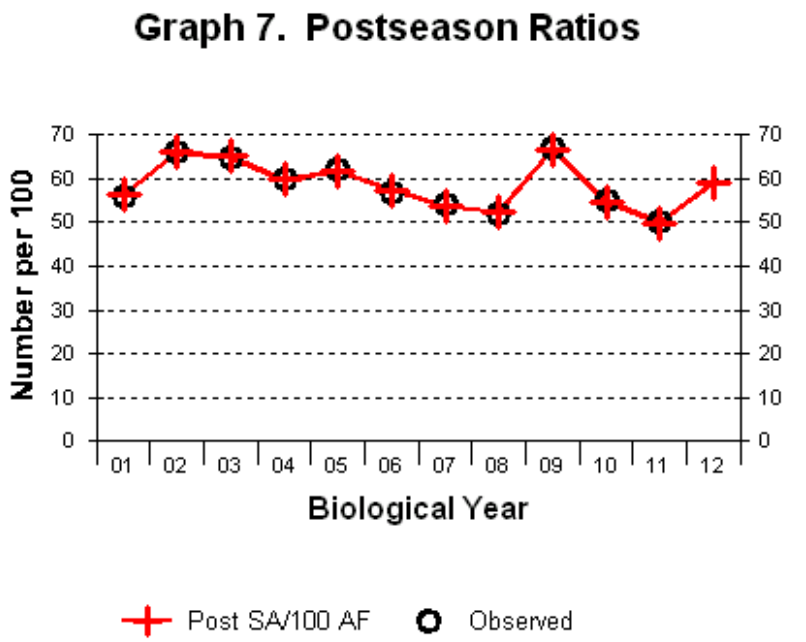
POP-II (V1.2.9) Graph 4. Harvest Percentages



12_SEASON_.GN1, 03/05/2012 07:17 am, Correlation (R) = 0.873, GOF = 0.755

YR	SIM	OBS
01	39	31
02	18	20
03	21	22
04	24	18
05	28	24
06	21	12
07	14	18
08	14	15
09	27	24
10	38	31
11	31	-----
12	35	-----
	AVERAGES	
of Col.	26	
of Pair	25	22

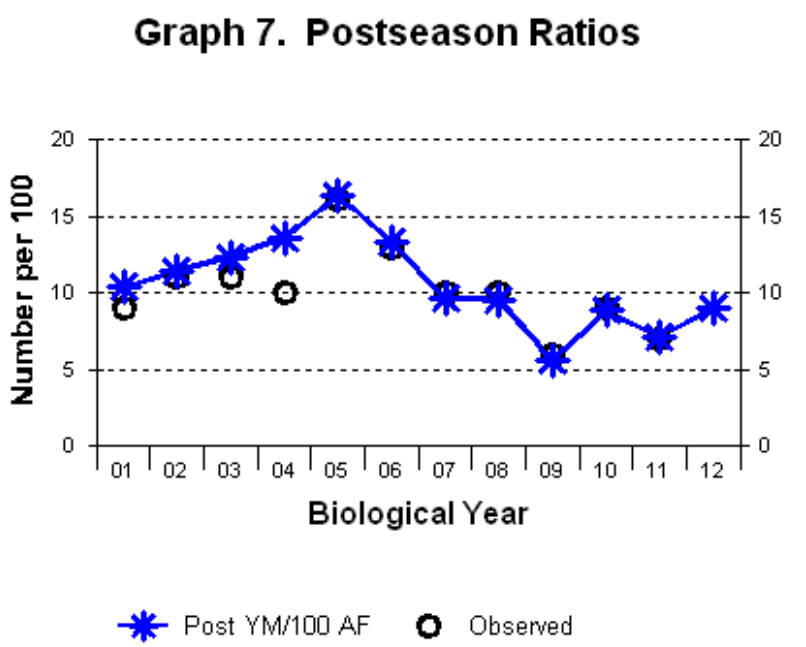
POP-II (V1.2.9) Graph 7. Postseason Ratios



12_SEASON_.GN1, 03/05/2012 07:17 am, Correlation (R) = 0.998, GOF = 0.995

YR	SIM	OBS
01	56	56
02	66	66
03	65	65
04	60	60
05	62	62
06	57	57
07	54	54
08	52	52
09	67	67
10	55	55
11	50	50
12	59	-----
	AVERAGES	
of Col.	59	
of Pair	59	59

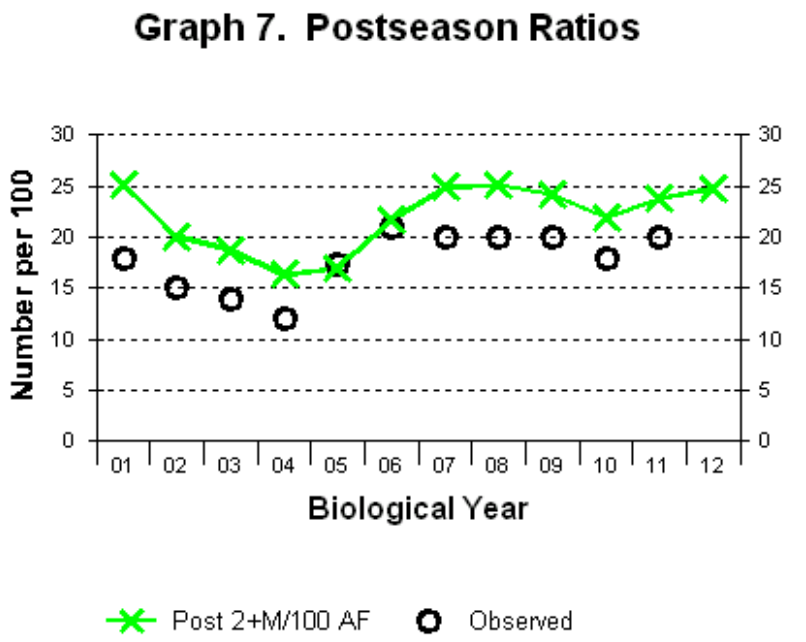
POP-II (V1.2.9) Graph 7. Postseason Ratios



12_SEASON_.GN1, 03/05/2012 07:17 am, Correlation (R) = 0.923, GOF = 0.875

YR	SIM	OBS
01	10	9
02	11	11
03	12	11
04	14	10
05	16	16
06	13	13
07	10	10
08	10	10
09	6	6
10	9	9
11	7	7
12	9	-----
	AVERAGES	
of Col.	11	
of Pair	11	10

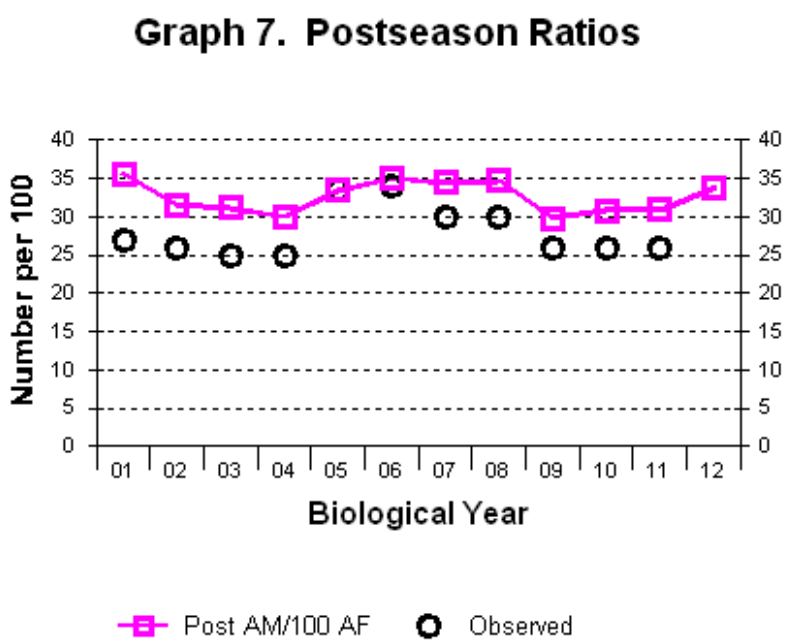
POP-II (V1.2.9) Graph 7. Postseason Ratios



012_SEASON_.GN1, 03/05/2012 07:17 am, Correlation (R) = 0.779, GOF = 0.75

YR	SIM	OBS
01	25	18
02	20	15
03	19	14
04	16	12
05	17	17
06	22	21
07	25	20
08	25	20
09	24	20
10	22	18
11	24	20
12	25	-----
	AVERAGES	
of Col.	22	
of Pair	22	18

POP-II (V1.2.9) Graph 7. Postseason Ratios



12_SEASON_.GN1, 03/05/2012 07:17 am, Correlation (R) = 0.715, GOF = 0.824

YR	SIM	OBS
01	36	27
02	32	26
03	31	25
04	30	25
05	33	33
06	35	34
07	34	30
08	35	30
09	30	26
10	31	26
11	31	26
12	34	-----
	AVERAGES	
of Col.	33	
of Pair	32	28

Aerial Survey for Windows, Version 1.00 Beta 6.1.1 (17-Sep-1999)

Monday, February 27, 2012 06:09 PM

Model: Mule Deer, Hiller 12-E, Idaho (Spring)

[Files]
Title   = C:\Program Files\IDFG\Aerial Survey\2012_MD541_EST1.ttl
Summary = C:\Program Files\IDFG\Aerial Survey\2012_MD541_EST1.sum

.....

2012_MD541_EST1

Section 1: Summary of Raw Counts

Stratum	Units Sampled	Total
1	4	40
2	6	252
3	18	3569
4	12	4293
Total	40	8154

Section 2: Summary of Raw Counts for Perfect Visibility Model
---

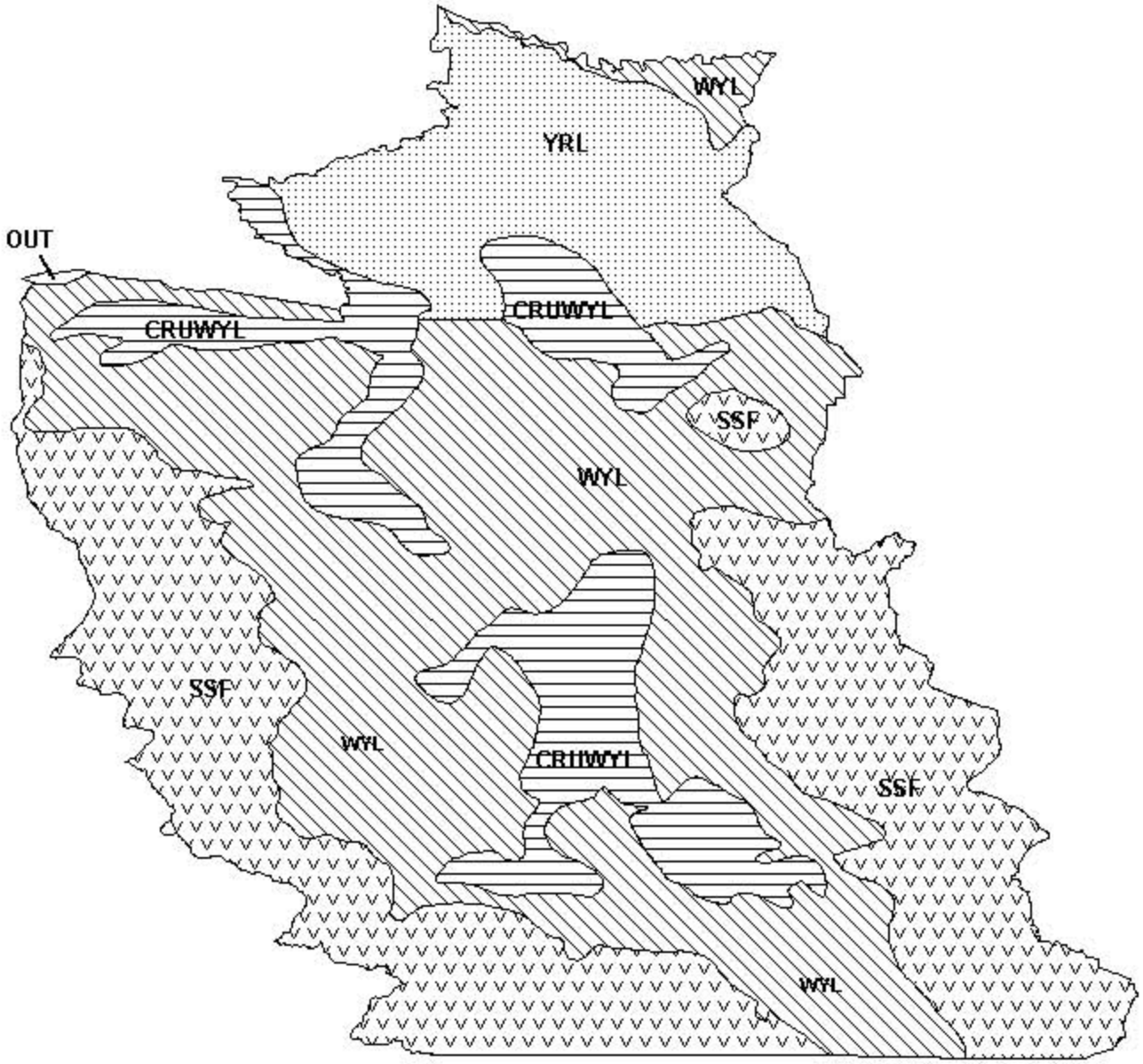
This table projects the number of animals that would have been counted if every unit had been flown and visibility had been perfect (no animals obscured by vegetation, etc.)

Strat	No of Units Popn	Sample	Total
1	27	4	270
2	25	6	1050
3	23	18	4560
4	12	12	4293
Total	87	40	10173

Section 3: Estimates for Total Number

Total

Stratum	Number of Units Popn.	Sample	Estimate	Variance Sampling	Sightability	Model	Bound 95%
1	27	4	338	36766	1035	52	381
2	25	6	1138	488935	1657	55	1373
3	23	18	5010	276832	8366	570	1048
4	12	12	4634	0	4815	200	139
Total	87	40	11120	802533	15873	877	1774



Mule Deer (MD541) - Platte Valley
HA 78-81, 83, 161
Revised - 12/87

WHITE-TAILED DEER

2011 - JCR Evaluation Form

SPECIES: White tailed Deer | PERIOD: 6/1/2011 - 5/31/2012

HERD: WD504 - SOUTHEAST WYOMING

HUNT AREAS: 16, 55, 57, 59-64, 70, 73-81, 83, 161 | PREPARED BY: MARTIN HICKS

	2006 - 2010 Average	2011	2012 Proposed
Population:	0	N/A	N/A
Harvest:	524	834	945
Hunters:	1,754	2,123	2,300
Hunter Success:	30%	39%	41 %
Active Licenses:	1,836	2,289	2,400
Active License Percent:	29%	36%	39 %
Recreation Days:	6,409	8,839	8,800
Days Per Animal:	12.2	10.6	9.3
Males per 100 Females	42	41	
Juveniles per 100 Females	68	74	

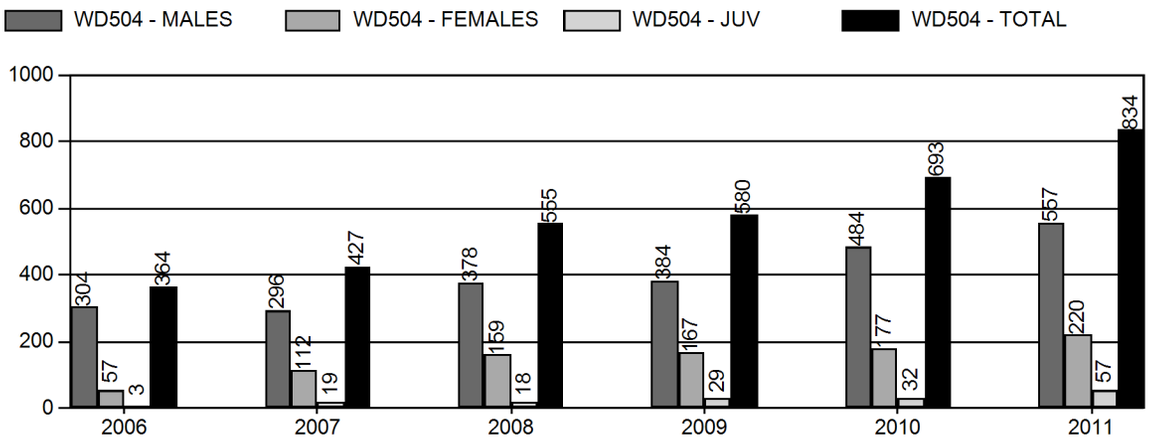
Population Objective:	4,000
Management Strategy:	Recreational
Percent population is above (+) or below (-) objective:	N/A%
Number of years population has been + or - objective in recent trend:	0
Model Date:	None

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

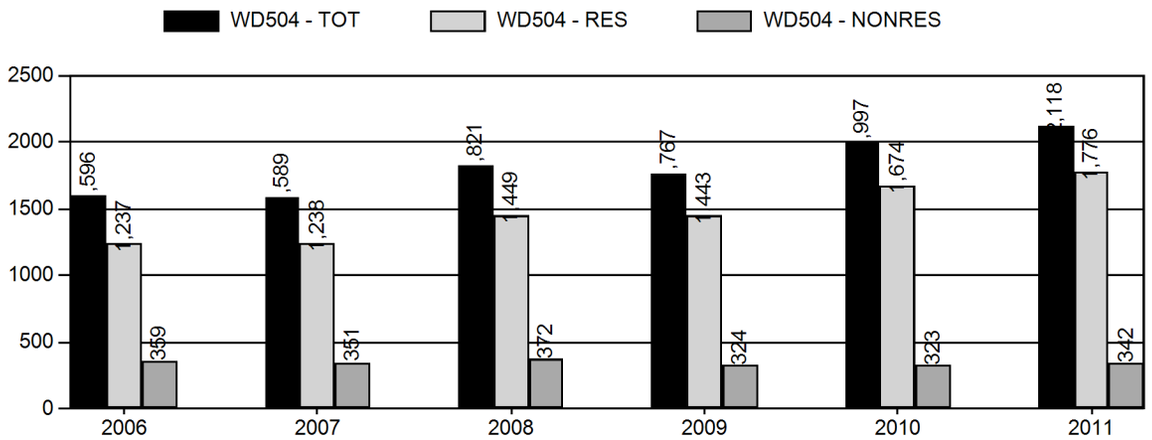
	JCR Year	Proposed
Females ≥ 1 year old:	NA%	NA%
Males ≥ 1 year old:	NA%	NA%
Juveniles (< 1 year old):	NA%	NA%
Total:	NA%	NA%
Proposed change in post-season population:	NA%	NA%

Population Size - Postseason

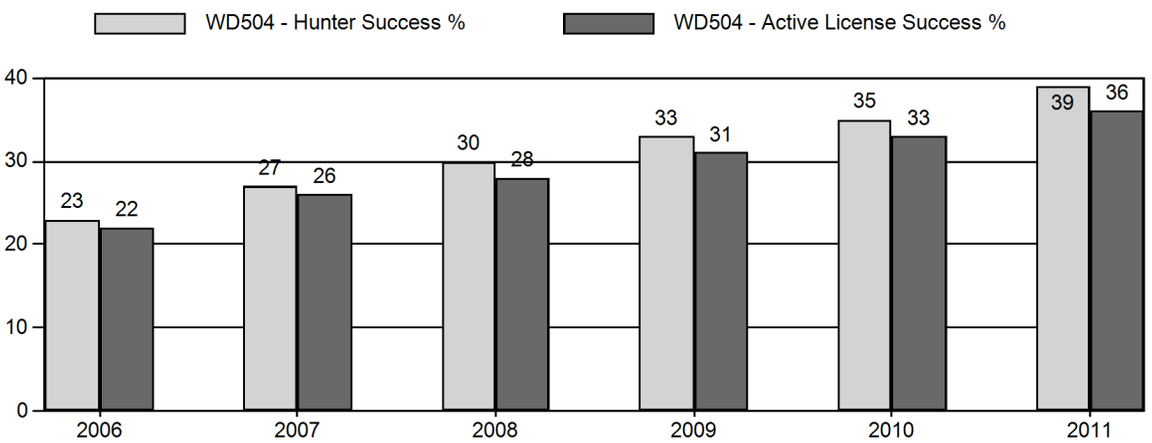
Harvest



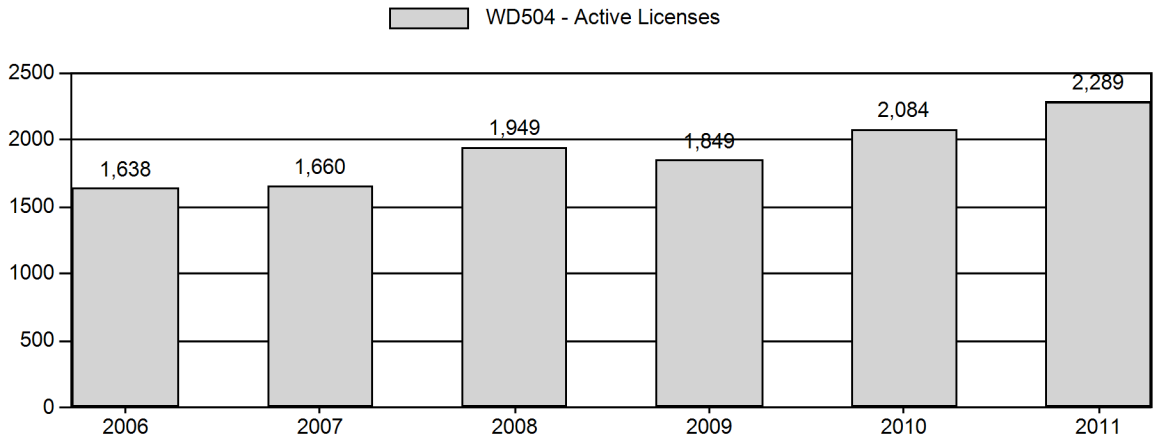
Number of Hunters



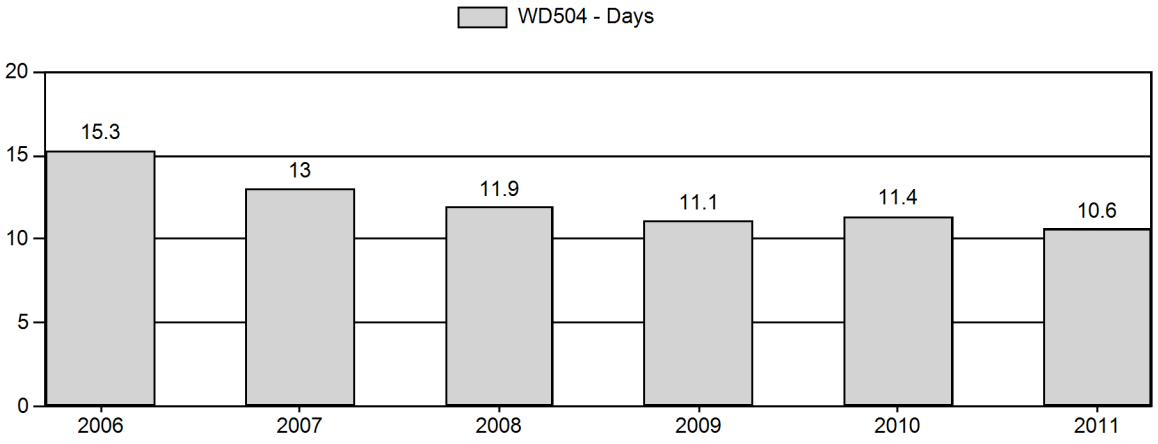
Harvest Success



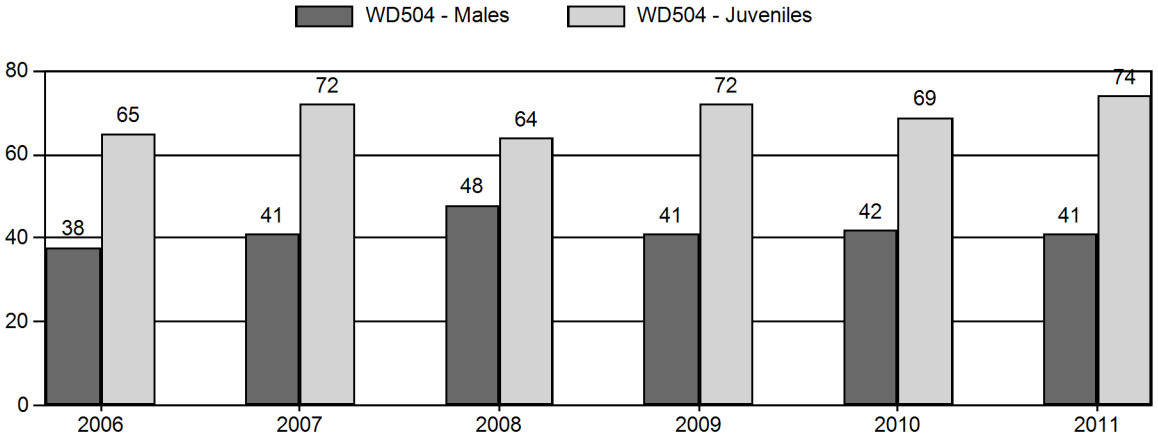
Active Licenses



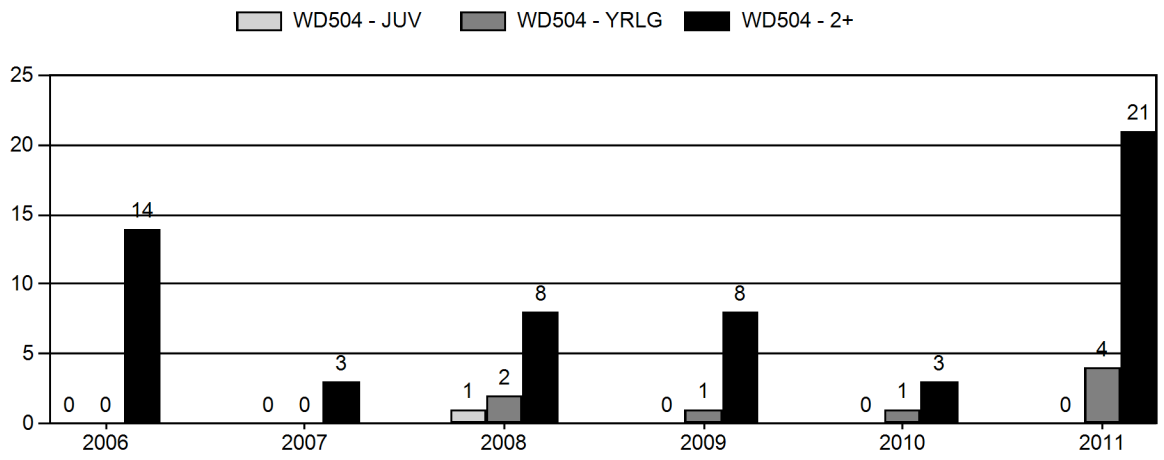
Days per Animal Harvested



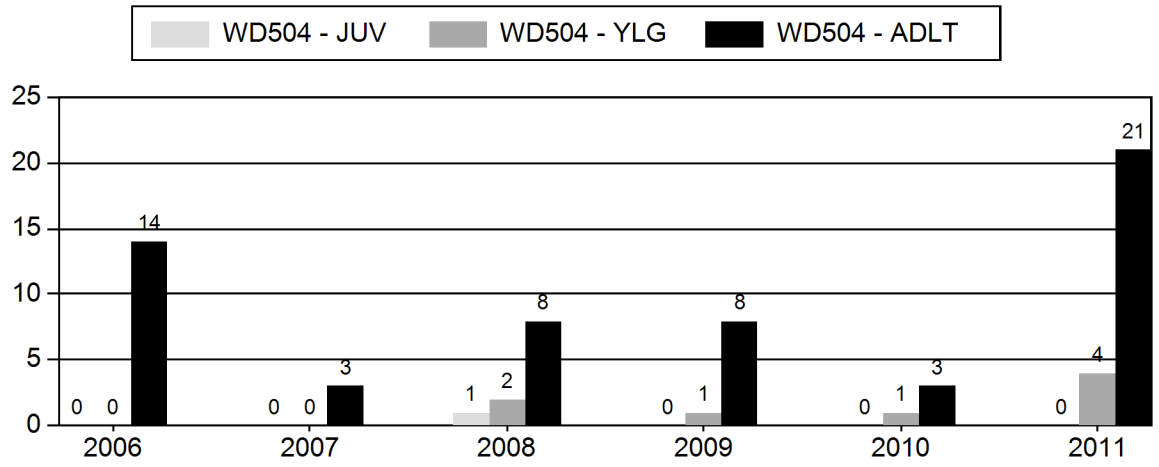
Postseason Animals per 100 Females



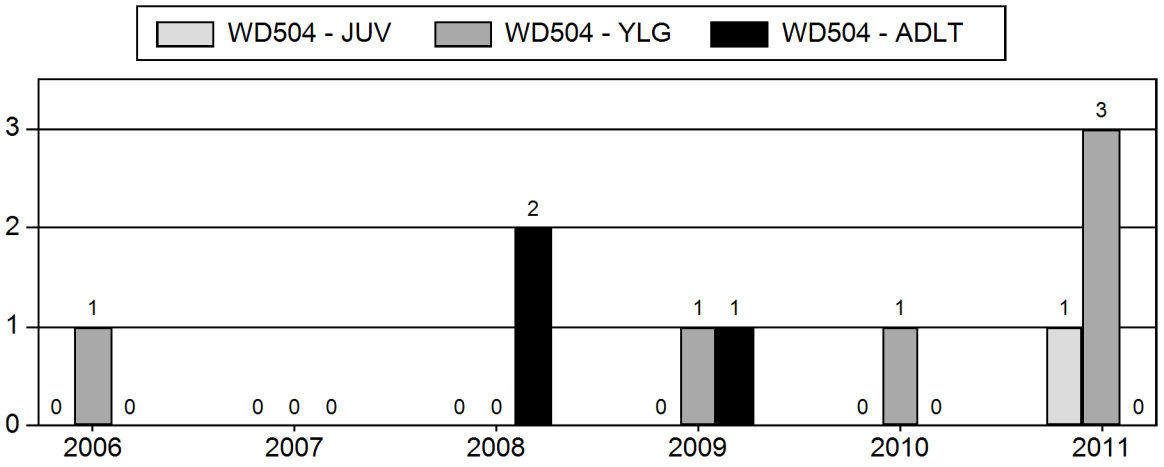
Age Structure of Field Checked Males



Age Structure Data (Field and Laboratory) - Male



Age Structure Data (Field and Laboratory) - Female



SOUTHEAST WYOMING WHITE-TAILED DEER
(WT504)
HUNT AREAS 16, 55, 57, 59-64, 70-81, 83, 161
2009-2011 Biological Years (6/1/2009-5/31/2012)

INTRODUCTION

The lack of adequate classification and harvest field check data, combined with limited harvest information and lack of a closed population, prohibits any effort to reliably estimate white-tailed deer numbers in this DAU. Consequently, the population objective for this herd is of limited value. Management is driven primarily by local Department personnel perception of population trends and landowner tolerance for this species. A model was developed in 2005 mainly for data capturing purposes. Lack of adequate data within a large geographic herd unit prevents any realistic value in the post-season population estimate.

In addition to the general firearm season there were five different Type 3 licenses available to hunters from 2009-2011 for a late season white-tailed deer hunt (November 1 – November 30), which was an increase of one Type 3 license compared to the 2006-08 report period. These five Type 3 licenses are split between seventeen different hunt areas (16, 55, 57, 59, 60, 62, 63, 64, 74-81 and 161), which have the higher densities of white-tailed deer. There were two Type 8 licenses in 2009-011 and four in 2012 for doe/fawn white-tailed deer.

Buck ratios have fluctuated around 44 bucks:100does and fawn ratios and were as high as 75 fawns:100 does in 2005, but average around 70 fawns:100 does for the last six years.

Population trends appear to be increasing based on fawn ratios, increased sample sizes observed during post-season classifications and harvest data.

This herd is managed under recreational criteria. The 2012 season is designed to maximize opportunity within the limits of hunter access while addressing damage issues. The high reproductive potential of this species dictates an aggressive harvest strategy but because the majority of WTD habitat occurs on private land our management options are limited.

For extensive background information on the Southeast Wyoming White-tailed Deer Herd, the reader is referred to the 2002 WTD504 Job Completion Report.

WEATHER

A state-wide weather report from Biological Services was not available for this reporting period. However, a memo was sent to Wildlife Division from the Laramie Region summarizing weather data in southeast Wyoming from October 2011 to April 2012 (Appendix A). Basically this past winter was very mild resulted in limited winter

mortality of white-tailed deer. Since April 2012 the area has received little to no precipitation resulting in a drastic decrease in herbaceous production.

Drought conditions have also affected perennial streams. The North Platte River at North Gate is flowing at 150 cfs, the 98-year average is 800 cfs. The Laramie River at Bosler, WY is flowing at 5 cfs, the 98-year average is 200 cfs. The North Laramie River, Horseshoe Creek and Cottonwood Creek are dry as they cross Interstate Highway 25. Landowners have started to de-stock cattle herds because of lack of grass throughout southeast Wyoming.

Weather conditions from 2010-2011 were the complete opposite compared to 2012. The winters of 2010-2011 were more severe and spring/summer precipitation was well above average. Major flooding events occurred, reservoirs were filled and grass/forb/shrub production increased compared to long term averages.

It is expected that white-tailed deer will be more concentrated on irrigated crops due to excessive drought conditions. Fawn ratios most likely will not be as severly affected as mule deer fawns since white-tailed does will have access to more nutritious vegetation from riparian bottoms and irrigated alfalfa and small grain fields.

HABITAT CONDITIONS/ASSESMENT

Appendix B contains the habitat data for Goshen Rim and Laramie Mountains Mule Deer Herd Units. Vegetation sampling is focused on shrub species particular to mule deer browsing and not focused on vegetation used by white-tailed deer.

The majority of white-tailed deer are dependent upon irrigated crops adjacent to riparian corridors. Fawn production fluctuates with the amount and availability of the crops for white-tailed deer use. Management of white-tailed deer is secondary to mule deer and little emphasis is placed on data collection and population performance due to access issues.

POPULATION

Table 1. WTD504 Postseason Classification Data, 2006-2011

2006 - 2011 Postseason Classification Summary

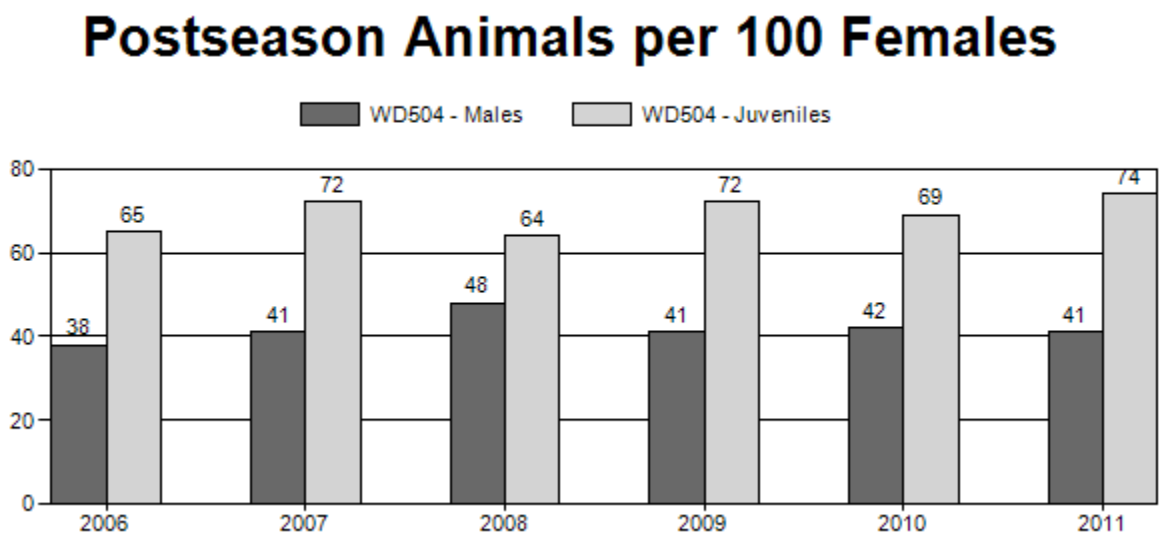
for White tailed Deer Herd WD504 - SOUTHEAST WYOMING

		MALES				FEMALES		JUVENILES				Males to 100 Females				Young to		
Year	Post Pop	Ylg	Adult	Total	%	Total	%	Total	%	Tot Cls	Cls Obj	Ylng	Adult	Total	Conf Int	100 Fem	Conf Int	100 Adult
2006	0	52	91	143	19%	375	49%	244	32%	762	950	14	24	38	± 4	65	± 6	47
2007	0	43	92	135	19%	330	47%	236	34%	701	950	13	28	41	± 0	72	± 0	51
2008	0	65	105	170	23%	351	47%	224	30%	745	0	19	30	48	± 0	64	± 0	43
2009	0	50	96	146	19%	358	47%	257	34%	761	0	14	27	41	± 0	72	± 0	51

2010	0	38	72	110	20%	265	47%	183	33%	558	1,165	14	27	42	± 0	69	± 0	49
2011	0	54	148	202	19%	497	47%	367	34%	1,066	1,070	11	30	41	± 0	74	± 0	53

Adequate sample sizes were not met 4 out the six years and not calculated in 2008-09 due to low management priority. However, sample sizes have increased since 2007 (Table 1) with the exception of 2010. White-tailed deer appear to have increased throughout their occupied habitat.

Graph 1. WTD504 Postseason Classification Data, 2006-2011



The 2011 fawn ratio was well above the five-year average of 68 fawns:100 does (Graph 1). Ratios do not appear to have a trend, instead they have fluctuated around 70 fawns:100 does for the past six years. These ratios are more than adequate to increase a population (Unsworth et al. 1999).

The 2011 buck ratio was slightly lower than the five-year average of 42 bucks:100 does (Graph 1). Buck ratios remain high and provide ample opportunity for hunters that have access to riparian corridors, particularly in Hunt Areas 16, 55 and 64, which have the highest white-tailed deer densities.

HUNTING SEASONS

SOUTHEAST WHITE-TAILED DEER (WT504)
HUNT AREAS 16, 55, 57, 59 - 64, 70, 73 - 81, 83, 161
2011 HUNTING SEASONS

HUNT AREA	TYPE	OPENS	CLOSES	LIMITATIONS
*16,*55	3	NOV. 1	NOV. 30	L.Q.; ~~125~~ 150 licenses any white-tailed deer
*CWD Area				

		DEC. 1	DEC. 15	Unused Area 16,55 Type 3 licenses valid for doe or fawn white-tailed deer in Area 55
	8	NOV. 1	DEC. 15	L.Q.; 50 licenses doe or fawn white-tailed deer
*16 *CWD Area	GEN	OCT. 1	OCT. 14	General license; antlered mule deer or any white-tailed deer
*55 *CWD Area	GEN	OCT. 1	OCT. ~~14~~ 11	General license; antlered mule deer or any white-tailed deer.
	6	OCT. 1	OCT. 14	L.Q.; 50 licenses doe or fawn
		NOV. 1	DEC. 15	Unused Area 55 Type 6 licenses valid in that portion of Area 55 in Goshen County and north of the Laramie river in Platte county.
57* CWD Area	GEN	OCT. 1	OCT. ~~14~~ 11	General license; antlered mule deer or any white-tailed deer.
57* *CWD Area	3	NOV. 1	NOV. 30	L.Q.; ~~50~~ 75 licenses any white-tailed deer
59*,60*,62,*63 *64 *CWD Area	3	NOV. 1	NOV. 30	L.Q.; ~~150~~ 200 licenses any white-tailed deer, except the Wyoming Game and Fish Commission's Tom Thorne/Beth Williams Wildlife Research Center at Sybille (Sybille Wildlife Research Unit) south of Wyoming Highway 34 shall be closed; All lands within Curt Gowdy State Park archery only
		DEC. 1	DEC. 15	Unused Area 59, 60, 62, 63, 64 Type 3 licenses valid for doe or fawn white-tailed deer in Area 63 and Area 64
*60 *CWD Area	1	OCT. 20	NOV. 5	L.Q.; 100 licenses antlered deer on national forest, any deer off national forest
	2	OCT. 20	NOV. 5	L.Q.; 150 licenses any deer off national forest; All lands within Curt Gowdy State Park archery only
		NOV. 6	NOV. 30	Unused Area 60 Type 1 and 2 licenses valid for any white-tailed deer off national forest
	6	OCT. 20	NOV. 5	L.Q.; 50 licenses doe or fawn valid in that portion of Area 60 in Laramie County
		NOV. 6	NOV. 30	Unused Area 60 Type 6 license valid for doe or fawn white-tailed deer
*62,*63, *64 *CWD Area	6	OCT. 15	OCT. 31	L.Q.; 200 licenses doe or fawn on private land
		NOV. 1	DEC. 15	Unused Area 62, 63, 64 Type 6 licenses valid for doe or fawn white-tailed deer
*70 *CWD Area	GEN	OCT. 15	OCT. 22	General license, antlered mule deer or any white-tailed deer
*74, 75, 76, 77 *CWD Area	GEN	OCT. 4	OCT. 14	General License; antlered mule deer or any white-tailed deer
	3	OCT. 1	NOV. 30	L.Q.; ~~40~~ 50 licenses any white-tailed deer
	~~8~~	~~OCT. 1~~	~~NOV. 30~~	~~L.Q.; 25 licenses Doe or fawn white-tailed deer~~
*78,*79,*80, *81, 161 *CWD Area	3	NOV. 1	NOV. 30	L.Q.; 25 licenses any white-tailed deer
	8	SEPT. 1	DEC. 15	L.Q.; 25 licenses doe or fawn white-tailed deer
ARCHERY				
16, 83		SEPT. 1	SEPT. 30	General license; any deer. Limited quota license; refer to Section 3 of this Chapter.
55, 57, 59-64, 70, 73-81, 161		SEPT. 1	SEPT. 30	Refer to Section 3 of this Chapter.

The 2011 season was designed to provide as much white-tailed deer hunting opportunity as access would allow. Type 8 licenses were implemented in Hunt Area 16/55 and Type 3 licenses were increased in Hunt Areas 16/55, 59,60,62,63,64, and 74-77.

HARVEST

Table 2. WTD504 Harvest Data, 2011.

Area	Type	Active Lic/Htrs	Buck	Doe	Fawn	Total	Success	Days/Harvest	Days	Licenses Sold
2011										
16 MEADOWDALE/JAY EM										
	General	154	11	4	10	25	16.20%	10.8	271	
	Type 2	26	7	0	1	8	30.80%	11.2	90	0
	Type 3	64	41	4	0	45	70.30%	10.3	464	150
	Type 6	11	0	0	2	2	18.20%	11.5	23	0
	Type 8	28	0	14	5	19	67.90%	3.7	71	100
Pooled Total		265	59	22	18	99	37.40%	9.3	919	
Pooled Resident		210	44	18	16	78	37.10%	10.2	792	
Pooled Nonresident		55	15	4	2	21	38.20%	6	127	
55 ROCK EAGLE										
	General	261	60	18	7	85	32.60%	8.9	758	
	Type 3	83	50	10	0	60	72.30%	10.4	625	0
	Type 6	24	0	8	2	10	41.70%	7.8	78	0
	Type 8	45	0	26	0	26	57.80%	5.8	150	0
Pooled Total		383	110	62	9	181	47.30%	8.9	1611	
Pooled Resident		317	85	56	9	150	47.30%	9	1357	
Pooled Nonresident		66	25	6	0	31	47.00%	8.2	254	
57 SOUTHEAST										
	General	140	40	7	11	58	41.40%	7.8	450	
	Type 3	56	29	3	2	34	60.70%	10.6	359	75
	Type 6	22	0	11	3	14	63.60%	4.8	67	0
Pooled Total		205	69	21	16	106	51.70%	8.3	876	
Pooled Resident		182	52	13	16	81	44.50%	9.5	768	
Pooled Nonresident		23	17	8	0	25	#######	4.3	108	
59 LITTLE BEAR										
	General	19	11	0	0	11	57.90%	5.4	59	
	Type 3	37	24	0	0	24	64.90%	5.7	137	200
	Type 6	2	0	0	0	0	0%	0	13	0
Pooled Total		56	35	0	0	35	62.50%	6	209	

Pooled Resident	39	26	0	0	26	66.70%	4.2	109	
Pooled Nonresident	17	9	0	0	9	52.90%	11.1	100	
60 POLE MOUNTAIN									
Type 1	27	0	0	0	0	0%	0	50	0
Type 2	20	0	8	0	8	40%	5	40	0
Type 3	31	12	3	0	15	48.40%	12.7	190	0
Type 6	14	0	6	2	8	57.10%	12.8	102	0
Pooled Total	81	12	17	2	31	38.30%	12.3	382	
Pooled Resident	79	12	17	2	31	39.20%	12.3	380	
Pooled Nonresident	2	0	0	0	0	0%	0	2	
61 HARRIMAN									
General	35	0	0	0	0	0%	0	69	
Pooled Total	35	0	0	0	0	0%	0	69	
Pooled Resident	33	0	0	0	0	0%	0	67	
Pooled Nonresident	2	0	0	0	0	0%	0	2	
62 IRON MOUNTAIN									
General	6	0	0	0	0	0%	0	13	
Type 6	14	0	8	0	8	57.10%	22	176	0
Pooled Total	14	0	8	0	8	57.10%	23.6	189	
Pooled Resident	12	0	8	0	8	66.70%	23.4	187	
Pooled Nonresident	2	0	0	0	0	0%	0	2	
63 RICHEAU									
General	34	6	0	0	6	17.60%	6.8	41	
Type 3	28	28	0	0	28	100%	3.4	95	0
Type 6	6	0	3	0	3	50%	10	30	0
Pooled Total	68	34	3	0	37	54.40%	4.5	166	
Pooled Resident	59	32	3	0	35	59.30%	4.4	155	
Pooled Nonresident	9	2	0	0	2	22.20%	5.5	11	
64 LARAMIE PEAK									
General	360	117	0	0	117	32.50%	11.4	1339	
Type 2	27	9	0	0	9	33.30%	9	81	0
Type 3	77	34	9	0	43	55.80%	10.5	450	0

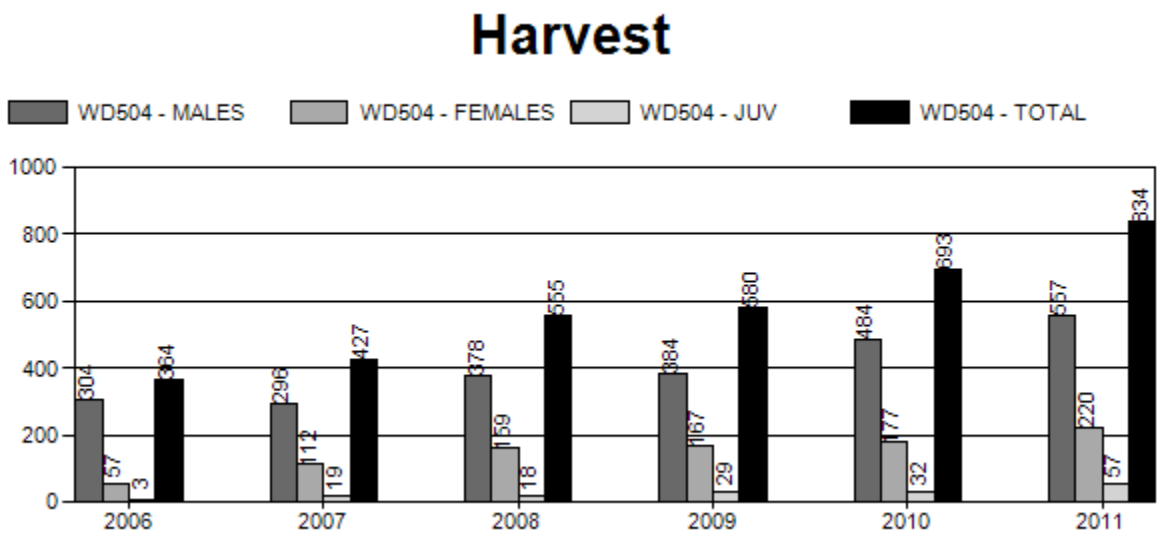
Type 6	76	0	57	6	63	82.90%	5.9	369	0
Pooled Total	486	160	66	6	232	47.70%	9.7	2239	
Pooled Resident	396	131	56	6	193	48.70%	10.4	1998	
Pooled Nonresident	90	29	10	0	39	43.30%	6.2	241	
70 SHIRLEY MOUNTAIN									
General	43	3	3	0	6	14.00%	14.3	86	
Type 6	3	0	0	0	0	0%	0	3	0
Pooled Total	46	3	3	0	6	13.00%	14.8	89	
Pooled Resident	29	0	0	0	0	0%	0	43	
Pooled Nonresident	17	3	3	0	6	35.30%	7.7	46	
73 BOSWELL									
General	19	0	0	0	0	0%	0	43	
Pooled Total	19	0	0	0	0	0%	0	43	
Pooled Resident	15	0	0	0	0	0%	0	38	
Pooled Nonresident	4	0	0	0	0	0%	0	5	
74 KYLE									
General	69	8	8	0	16	23.20%	11.8	188	
Type 3	26	8	0	3	11	42.30%	21.5	237	50
Pooled Total	95	16	8	3	27	28.40%	15.7	425	
Pooled Resident	91	15	8	3	26	28.60%	16.2	420	
Pooled Nonresident	4	1	0	0	1	25%	5	5	
75 FOUR MILE									
General	80	0	0	0	0	0%	0	237	
Type 3	19	13	0	0	13	68.40%	6.5	84	0
Pooled Total	96	13	0	0	13	13.50%	24.7	321	
Pooled Resident	88	13	0	0	13	14.80%	23.5	306	
Pooled Nonresident	8	0	0	0	0	0%	0	15	
76 SHEEP MOUNTAIN									
General	106	7	0	0	7	6.60%	37.3	261	
Type 3	5	3	0	0	3	60%	11	33	0
Pooled Total	111	10	0	0	10	9.00%	29.4	294	
Pooled Resident	98	10	0	0	10	10.20%	22.9	229	
Pooled Nonresident	13	0	0	0	0	0%	0	65	

77 BOULDER RIDGE									
General	44	7	0	0	7	15.90%	18	126	
Type 3	10	10	0	0	10	100%	13.6	136	0
Pooled Total	51	17	0	0	17	33.30%	15.4	262	
Pooled Resident	51	17	0	0	17	33.30%	15.4	262	
Pooled Nonresident	0	0	0	0	0	0	0	0	
78 FRENCH CREEK									
General	67	0	0	0	0	0%	0	151	
Type 3	12	10	0	0	10	83.30%	3.8	38	25
Type 8	7	0	5	0	5	71.40%	4.2	21	25
Pooled Total	80	10	5	0	15	18.80%	14	210	
Pooled Resident	78	10	5	0	15	19.20%	13	195	
Pooled Nonresident	2	0	0	0	0	0%	0	15	
79 KENNADAY PEAK									
General	82	0	0	0	0	0%	0	159	
Type 3	2	0	0	0	0	0%	0	5	0
Type 8	3	0	2	0	2	66.70%	2	4	0
Pooled Total	87	0	2	0	2	2.30%	84	168	
Pooled Resident	65	0	0	0	0	0%	0	123	
Pooled Nonresident	22	0	2	0	2	9.10%	22.5	45	
80 SPRING CREEK									
General	19	0	0	0	0	0%	0	130	
Type 3	2	2	0	0	2	100%	2.5	5	0
Type 8	7	0	3	3	6	85.70%	5.8	35	0
Pooled Total	26	2	3	3	8	30.80%	21.2	170	
Pooled Resident	21	2	3	3	8	38.10%	19.5	156	
Pooled Nonresident	5	0	0	0	0	0%	0	14	
81 BLACKHALL									
General	44	3	0	0	3	6.80%	28	84	
Type 3	3	2	0	0	2	66.70%	3.5	7	0
Pooled Total	47	5	0	0	5	10.60%	18.2	91	
Pooled Resident	40	2	0	0	2	5%	36	72	
Pooled	7	3	0	0	3	42.90%	6.3	19	

Nonresident									
83 BOLTEN RIM									
General	13	0	0	0	0	0%	0	13	
Pooled Total	13	0	0	0	0	0%	0	13	
Pooled Resident	10	0	0	0	0	0%	0	10	
Pooled Nonresident	3	0	0	0	0	0%	0	3	
161 ST. MARY'S CREEK									
General	10	0	0	0	0	0%	0	29	
Type 3	3	2	0	0	2	66.70%	1.5	3	0
Pooled Total	13	2	0	0	2	15.40%	16	32	
Pooled Resident	13	2	0	0	2	15.40%	16	32	
Pooled Nonresident	0	0	0	0	0	0	0	0	
2011 Hunt Area Total	2277	557	220	57	834	36.60%	10.5	8778	625
2011 Herd Total	2118	557	220	57	834	39.40%	10.5	8778	625
*Active Licenses									

The majority of harvest comes from Hunt Areas 16/55 and 64 (Table 2). These areas have the majority of occupied white-tailed deer habitat with the highest densities. There is limited access, so the majority of hunters are paying some type of access/outfitter fee.

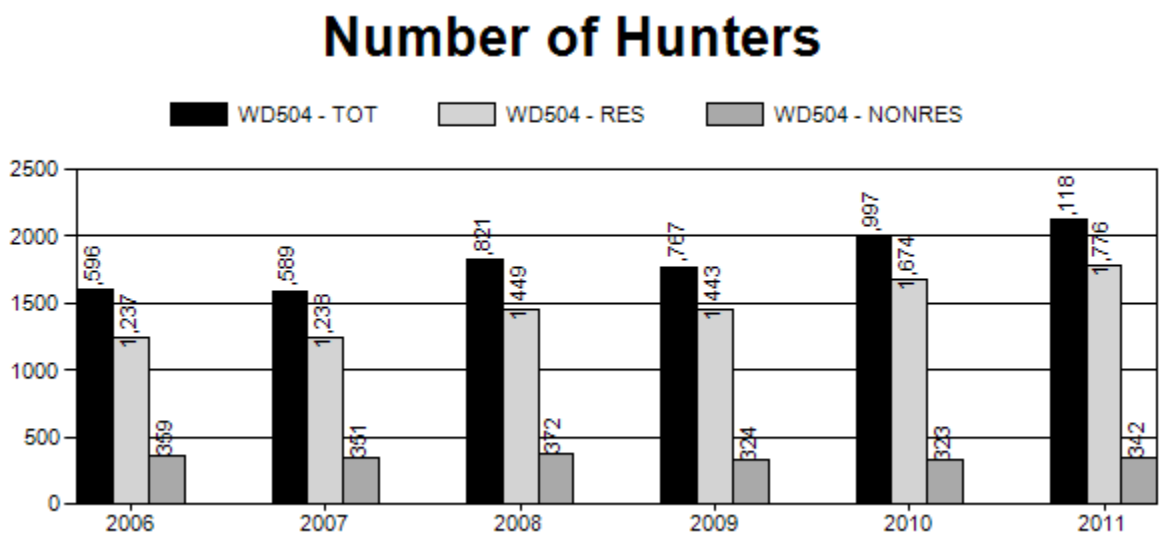
Graph 2. WTD504 Harvest Data, 2006-2011.



Harvest has increased throughout the hunt area as Type 3 and Type 8 license issuance has increased. Harvest is controlled by access and in the past three years landowners

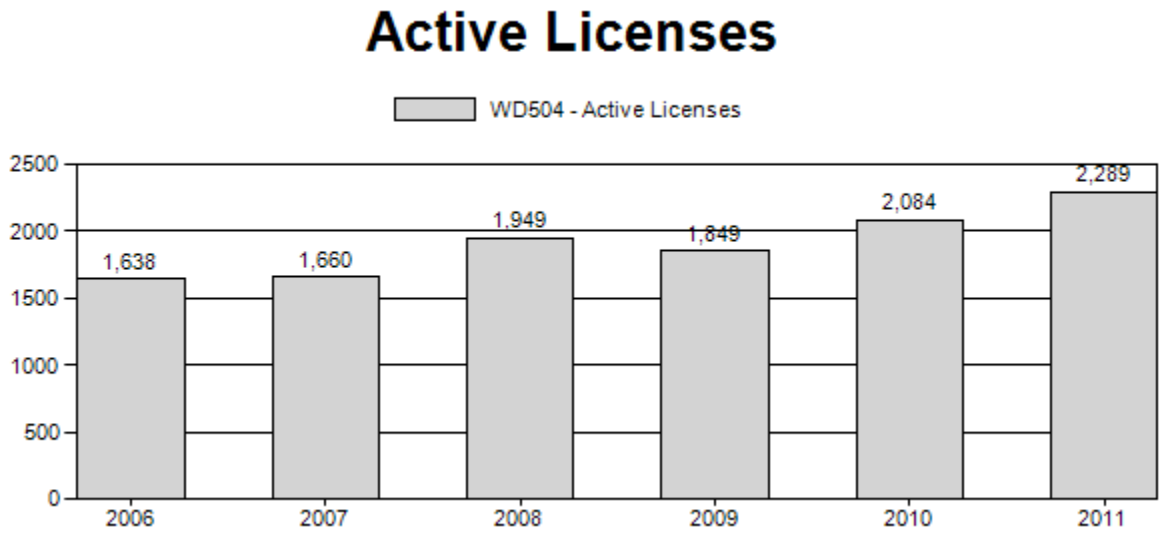
have been more willing to allow doe/fawn harvest in response to increased white-tailed deer numbers.

Graph 3. WTD504 Hunter Numbers, 2006-2011.



Hunter numbers have increased with the increase in Type 3 and Type 8 license issuance. In addition, based on harvest data (Table 2) there were more white-tailed deer harvest on a general license than the Type 3 and 8 licenses combined in hunt areas with the higher densities of white-tailed deer.

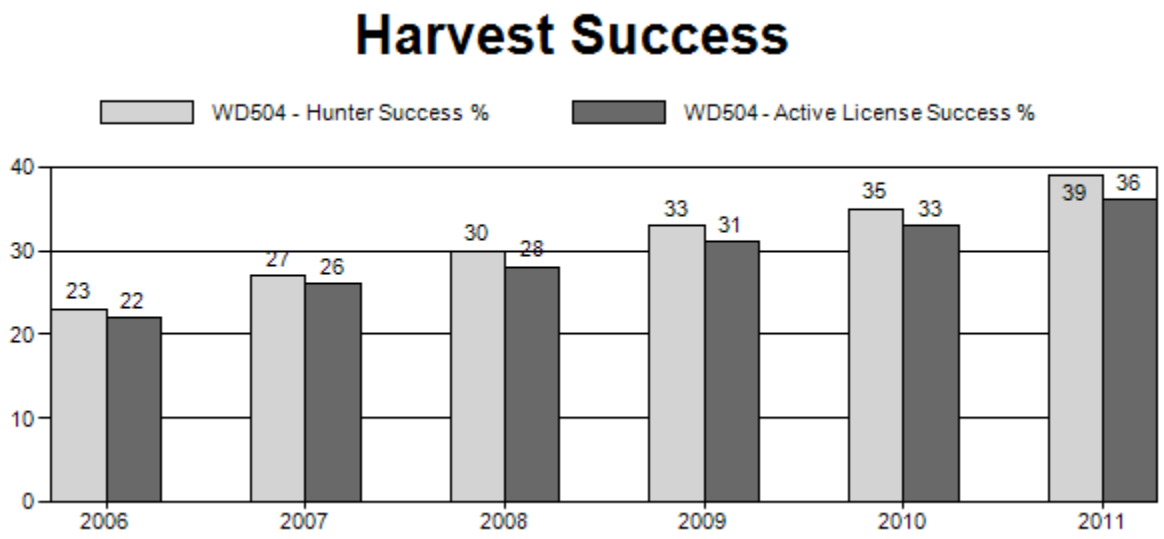
Graph 4. WTD504 Active Licenses, 2006-2011.



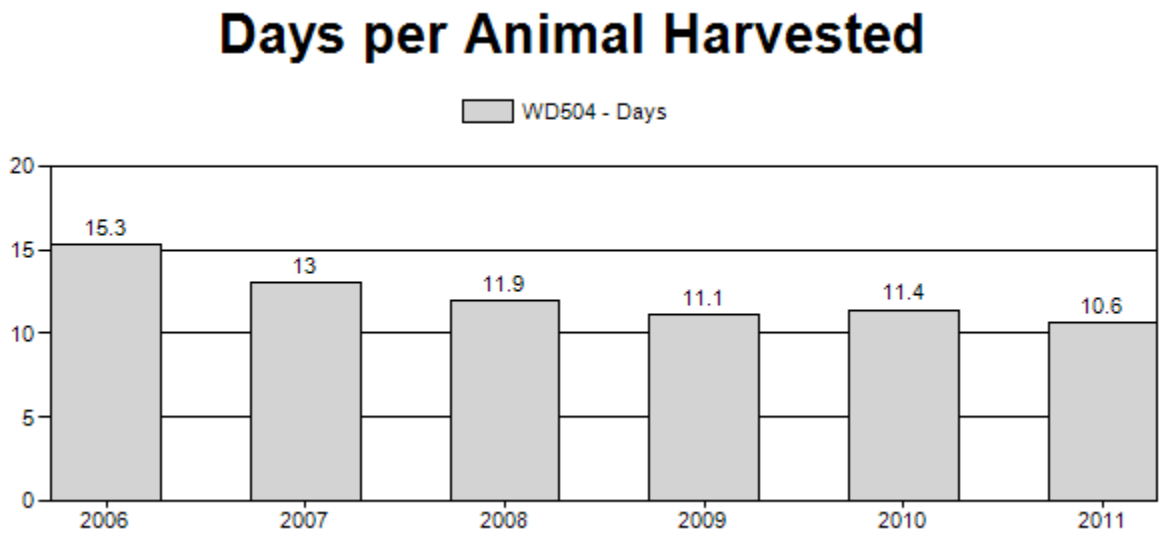
Active license numbers have increased (Graph 4) with the increase in Type 3, Type 8 and General licensed hunters within the Hunt Areas with the higher white-tailed deer densities. As the population has increased, so have active license hunters. In 2011

hunters could receive up to two full price deer licenses after the initial draw, provided one of the licenses was a Type 3 license. This enabled hunters who had access the opportunity to harvest either a mule deer buck, any white-tailed deer or two any white-tailed deer.

Graph 5. WTD504 Success, 2006-2011.



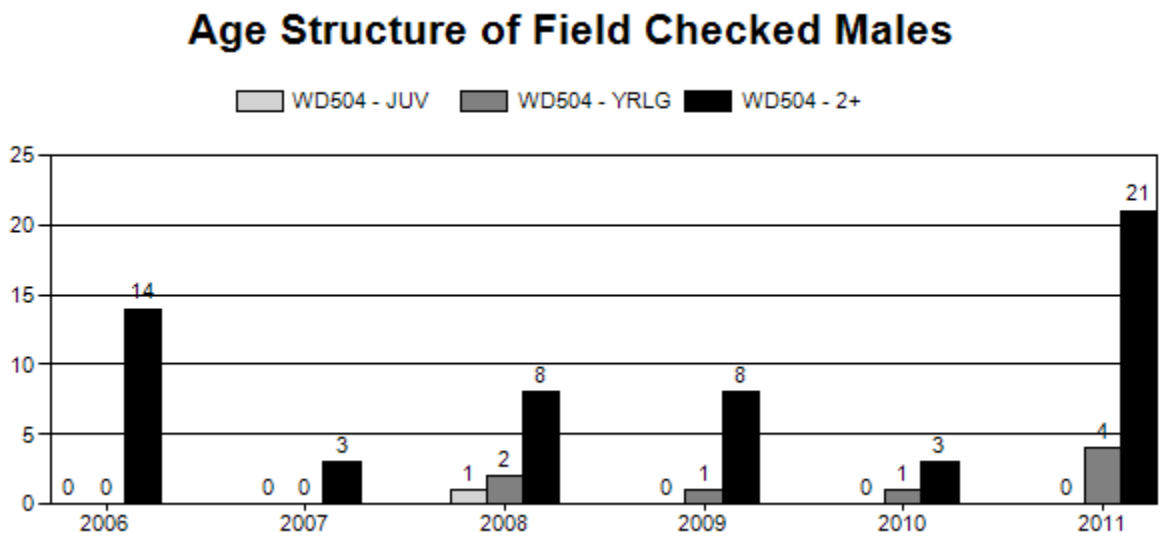
Graph 6. WTD504 Effort, 2006-2011.



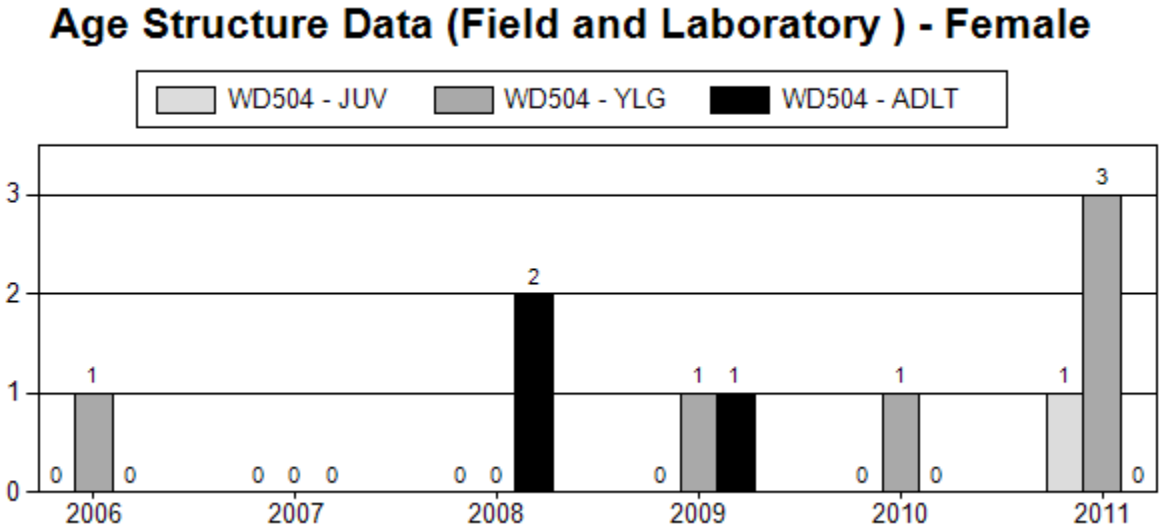
Harvest statistics indicate that this population is growing. Success has increased from 22% for active license hunters in 2006 to 36% in 2011 (Graph 5). Effort has decreased from 15.3 days per harvest in 2006 to 10.6 days per harvest in 2011 (Graph 6). These

data support classification sample sizes, field personnel and landowner and hunter observations that there are more white-tailed deer within their occupied habitat.

Graph 7. WTD504 Field Age Males, 2006-2011.



The opportunity to field check male WTD is sporadic at best and is dictated by factors such as weather conditions and the locations and timing of field check stations. The over whelming majority of male deer checked are 2+ (Graph 7) due to limited harvest pressure on private land and hunter selectivity for older aged males.. Typically male deer checked are from hunters paying a trespass fee or using an outfitter.
Graph 8. WTD504 Field Age Females, 2006-2011.



As indicated by Graph 8 there are very few female white-tailed deer field aged. Deer are sporadically harvested throughout the general and late-season making collection opportunities at check stations minimal.

OTHER MANAGEMENT ISSUES

Chronic Wasting Disease has been documented throughout most of the Herd Unit, but the population impact on WTD has not been determined. In 2011 there were 28 deer samples with 6 positives for a prevalence rate of 21%. This is similar to prevalence rates found in the Laramie Mountains Mule Deer herd (28% in 2011) and Goshen Rim Mule Deer herd (28% in 2011). A white-tailed deer study to determine the impact of CWD on this species is being conducted in Hunt Area 65 is but results have yet to be published. There have been no known epizootic hemorrhagic disease (EHD) outbreaks in the herd unit. There were several pronghorn within the same geographic areas (white-tailed deer hunt areas 64, 55, 57) that were diagnosed with EHD in 2011 so it is possible that limited mortality may have of occurred in white-tailed deer. Numerous samples were also taken during the 2011 hunting season as part of a graduate study trying to develop of baseline of EHD throughout the state. Weather conditions during the spring and early summer of 2012 are conducive to the transmission of EHD and may result in increased WTD mortality during August and September.

RECOMMENDATIONS

1) Surveillance of Chronic Wasting Disease and Epizootic Hemorrhagic disease should be continued during the 2012 season.
2) Continue to improve access for white-tailed deer doe harvest to try and reduce densities

Literature Cited:

Unsworth, JW, Pac DF, White GC, and Bartmann BC: Mule deer survival in Colorado, Montana, and Idaho. J. Wildl. Manage. 63(1):315-326, 1999

Southeast Wyoming White-tailed Deer Herd Unit (WTD504)
HUNT AREAS 16, 55, 57, 59 - 64, 70, 73 - 81, 83, 161
2012 HUNTING SEASONS

HUNT AREA	TYPE	OPENS	CLOSES	LIMITATIONS
*16,*55 *CWD Area	3	NOV. 1	NOV. 30	L.Q.; 150 licenses any white-tailed deer
		DEC. 1	DEC. 15	Unused Area 16,55 Type 3 licenses valid for doe or fawn white-tailed deer
	8	NOV. 1	DEC. 15	L.Q.; 100 licenses doe or fawn white-tailed deer
*16 *CWD Area	GEN	OCT. 1	OCT. 14	General license; antlered mule deer or any white-tailed deer
*55 *CWD Area	GEN	OCT. 1	OCT. 11	General license; antlered mule deer or any white-tailed deer.
	6	OCT. 1	OCT. 14	L.Q.; 50 licenses doe or fawn
		NOV. 1	DEC. 15	Unused Area 55 Type 6 licenses valid in that portion of Area 55 in Goshen County and north of the Laramie River in Platte county.
57* CWD Area	GEN	OCT. 1	OCT. 11	General license; antlered mule deer or any white-tailed deer.
57* *CWD Area	3	NOV. 1	NOV. 30	L.Q.; 75 licenses any white-tailed deer
57* *CWD Area	8	NOV. 1	DEC. 31	L.Q.; 50 licenses doe or fawn white-tailed deer
61*	GEN	OCT. 1	~~OCT. 14~~ OCT. 7	General Licnese; ~~any deer~~ antlered mule deer or any white-tailed deer
*59,*62,*63 *CWD Area	GEN	OCT. 15	OCT. ~~31~~25	General license; antlered mule deer or any white-tailed deer, except the Wyoming Game and Fish Commission's Tom Thorne/Beth Williams Wildlife Research Center at Sybille shall be closed
*64 *CWD Area	GEN	OCT. 15	OCT. ~~31~~25	General license; antlered mule deer or any white-tailed deer, except the Wyoming Game and Fish Commission's Tom Thorne/Beth Williams Wildlife Habitat Management Area and the Laramie Peak Wildlife Habitat Management Area north of the Tunnel Road (Albany County Rd 727), shall be closed to general license hunters
59*,60*,62,*63* *64 *CWD Area	3	NOV. 1	NOV. 30	L.Q.; 200 licenses any white-tailed deer, all lands within Curt Gowdy State Park, archery only; the Wyoming Game and Fish Commission's Tom Thorne/Beth Williams Wildlife Research Center at Sybille (Sybille Wildlife Research Unit) south of Wyoming Highway 34 shall be closed;
		DEC. 1	DEC. 15	Unused Area 59, 60, 62, 63, 64 Type 3 licenses valid for doe or fawn white-tailed deer in Area 63 and Area 64
59*,60*,62*,63*,64 * *CWD Area	8	NOV. 1	DEC. 31	L.Q.: 75 licenses doe or fawn white-tailed deer, except the Wyoming Game and Fish Commission's Tom Thorne/Beth Williams Wildlife Research Center at Sybille (Sybille Wildlife Research Unit) south of Wyoming Highway 34 shall be closed; all lands within Curt Gowdy State Park, archery only
*60 *CWD Area	1	OCT. 20	NOV. 5	L.Q.; 100 licenses antlered deer on national forest, any deer off national forest; all lands within Curt Gowdy State Park, archery only
	2	OCT. 20	NOV. 5	L.Q.; 150 licenses any deer off national forest; all lands within Curt Gowdy State Park, archery only
		NOV. 6	NOV. 30	Unused Area 60 Type 1, Type and Type 2 licenses valid for doe or fawn white-tailed deer off national forest; all lands within Curt Gowdy State Park, archery only
	6	OCT. 20	NOV. 5	L.Q.; 50 licenses doe or fawn valid in that portion of Area 60 in Laramie County; all lands within Curt Gowdy State Park, archery only
		NOV. 6	NOV. 30	Unused Area 60 Type 6 license valid for doe or fawn white-tailed deer; all lands within Curt Gowdy State Park, archery only
*62,*63, *64 *CWD Area	6	OCT. 15	OCT. 31	L.Q.; ~~200~~ 150 licenses doe or fawn on private land
		NOV. 1	DEC. 15	Unused Area 62, 63, 64 Type 6 licenses valid for doe or fawn white-tailed deer
*70 *CWD Area	GEN	OCT. 15	OCT. ~~22~~ 21	General license, antlered mule deer or any white-tailed deer
*74, 75, 76, 77 *CWD Area	GEN	OCT. 4	~~OCT. 14~~ OCT. 7	General License; antlered mule deer or any white-tailed deer
	3	OCT. 1	NOV. 30	L.Q.; 50 licenses any white-tailed deer
*78,*79,*80, *81, 161 *CWD Area	3	NOV. 1	NOV. 30	L.Q.; 25 licenses any white-tailed deer
	8	SEPT. 1	DEC. 15	L.Q.; 25 licenses doe or fawn white-tailed deer
ARCHERY 16, 55, 57, 59-64, 70, 73-81, 83, 161		SEPT. 1	SEPT. 30	General license; any deer; Limited quota license; Refer to Section 3 of this Chapter.

CHANGES FOR 2012

Season not specific to white-tailed deer are found in the mule deer reports; Goshen Rim Mule Deer Herd (HA's 15, 16, 55, 57), Laramie Mountain Mule Deer Herd (HA's 59, 60, 62, 63, 64, 73), Sheep Mountain Mule Deer (HA's 61,74-77), Shirley Mountain Mule Deer Herd (HA 70), and Platte Valley Mule Deer Herd (HA's 78-81, 83, 161).

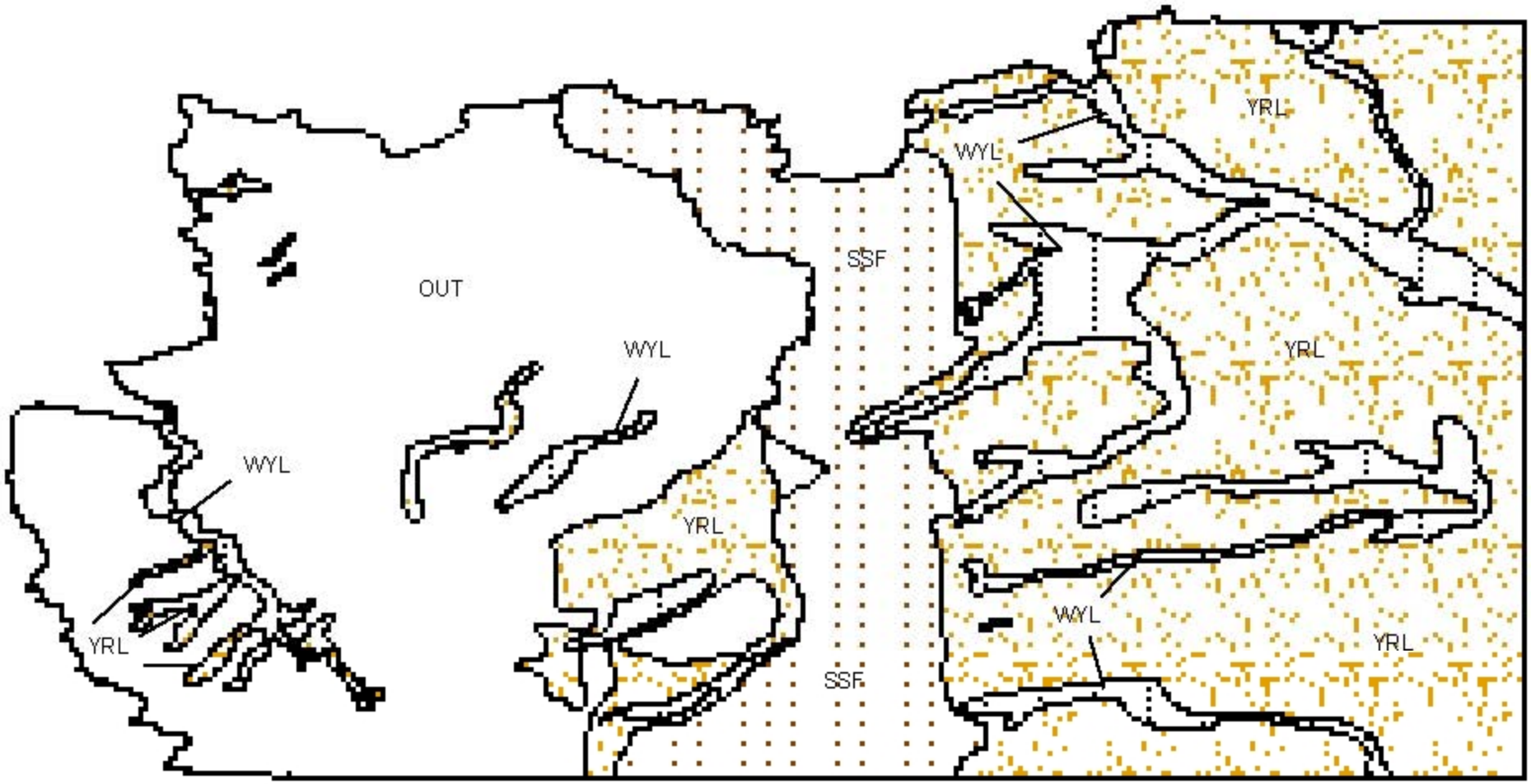
Changes for white-tailed deer include:

- Propose a Hunt Area 57 Type 8 license (50 licenses)
- Propose a Hunt Area 60,62-64 Type 8 license (75 licenses)
- Have Areas 59, 62, 63, 64 valid for any white-tailed deer during the general season

Hunt Area	License Type	Proposed Change
57	50 Type 8 licenses	New License Type
59,60,62-64	75 Type 8 licenses	New License Type
59,60-64	General License	Valid for any white-tailed deer

2012 Season

- White-tailed deer densities have increased in hunt areas with high quality white-tailed deer habitat (Hunt Areas 16/55, 59, 60, 62-64)
- White-tailed deer harvest in the SE WY Herd Unit is controlled by damage concerns on private land
- With average to above average fawn production, the population within these high quality habitat areas has exceeded landowner tolerance. Therefore we propose Type 8 licenses for Hunt Areas 57, 59, 60, 62-64 as well as an any white-tailed deer general season for Hunt Areas 59,60, 62-64.
- This population has been subject to irregular outbreaks of epizootic hemorrhagic disease (EHD), particularly during dry years with high deer densities. Outbreaks occurred in areas of higher white-tailed deer densities in 1998, 1999 and again in 2003. There were several cases of pronghorn positive for Blue Tongue, but no known cases were identified in 2011. Densities are approaching levels where if conditions were right we would see a massive die-off of white-tailed deer
- Harvest statistics are the only data collected for this herd. Classification data is collected incidental to other duties. A model was developed in 2006 to capture data. Inadequate data prevents any legitimate populations estimate. High fawn ratios have increased this herd in the past 3-5 years.
- The 2012 season is designed to reduce white-tailed deer densities, before an EHD/Blue Tongue event occurs.



White-tailed Deer (WT504) - Southeast Wyoming
HA 16, 55, 57, 59-64, 70, 73-81, 83, 161
Revised 10/99

ELK

2011 - JCR Evaluation Form

SPECIES: Elk | PERIOD: 6/1/2011 - 5/31/2012

HERD: EL531 - IRON MOUNTAIN

HUNT AREAS: 5-6 | PREPARED BY: LEE KNOX

	2006 - 2010 Average	2011	2012 Proposed
Population:	0	N/A	N/A
Harvest:	425	761	750
Hunters:	745	1,237	1,400
Hunter Success:	57%	62%	54 %
Active Licenses:	778	1,264	1,450
Active License Percent:	55%	60%	52 %
Recreation Days:	5,001	6,497	6,000
Days Per Animal:	11.8	8.5	8
Males per 100 Females	19	15	
Juveniles per 100 Females	45	62	

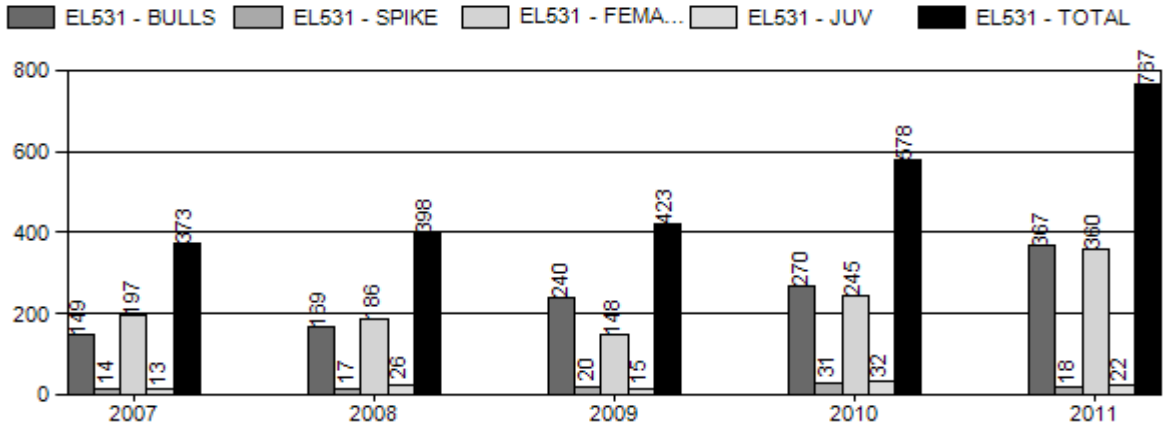
Population Objective:	1,800
Management Strategy:	Recreational
Percent population is above (+) or below (-) objective:	N/A%
Number of years population has been + or - objective in recent trend:	11
Model Date:	2/22/2012

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

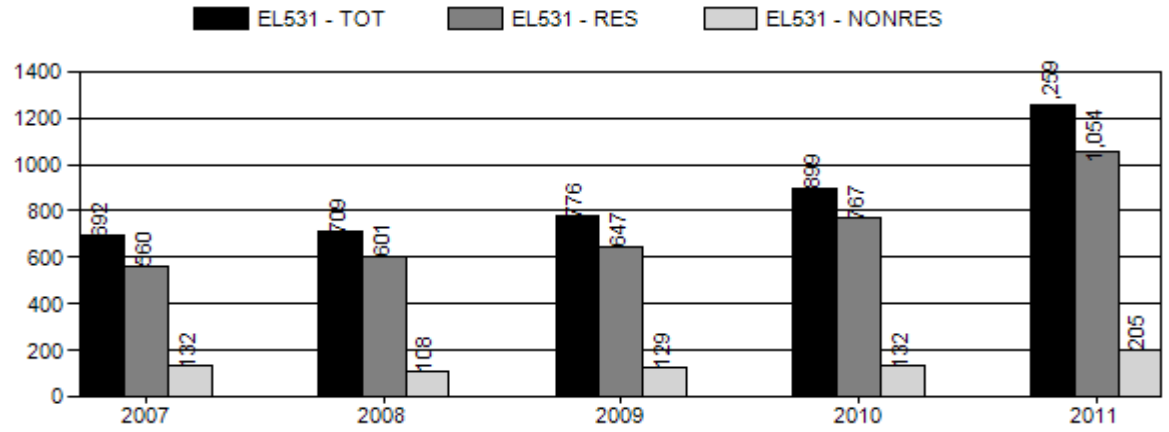
	JCR Year	Proposed
Females ≥ 1 year old:	0%	0%
Males ≥ 1 year old:	0%	0%
Juveniles (< 1 year old):	0%	0%
Total:	0%	0%
Proposed change in post-season population:	0%	0%

Population Size - Postseason

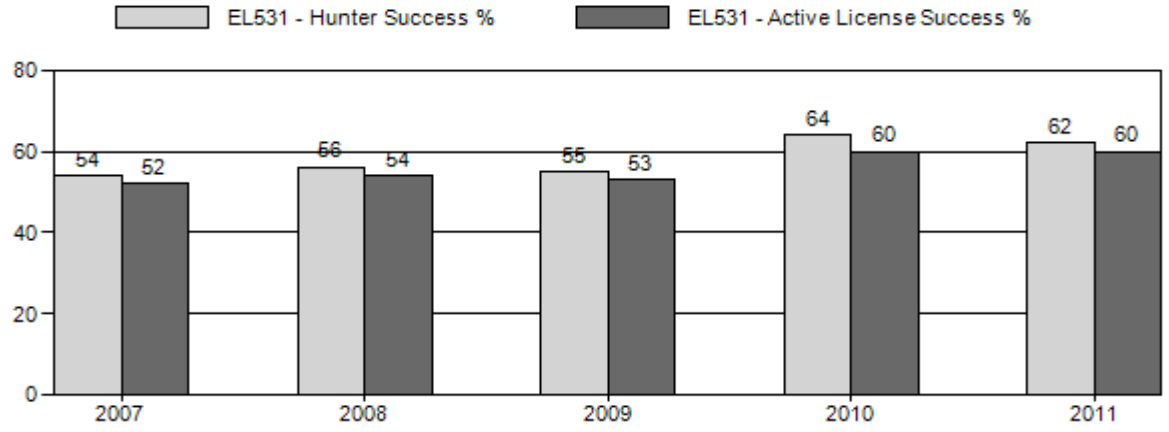
Harvest



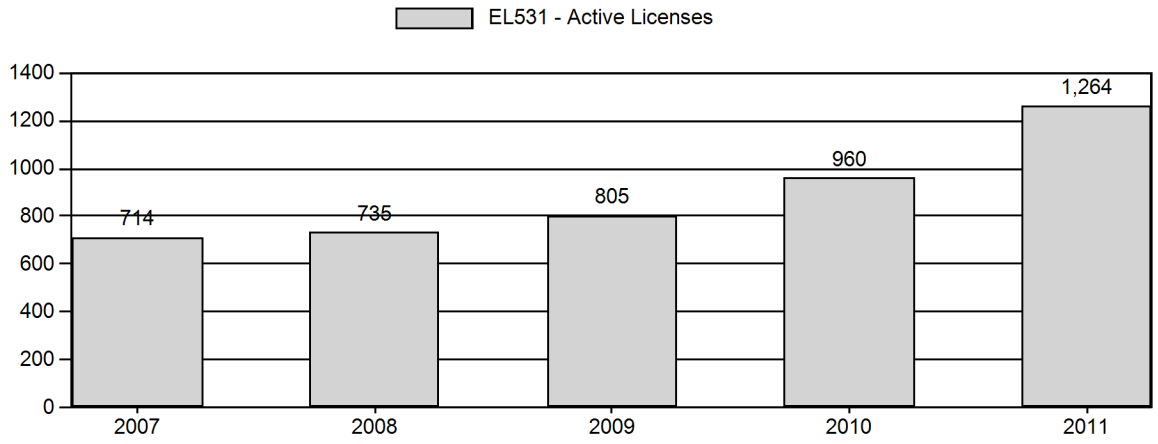
Number of Hunters



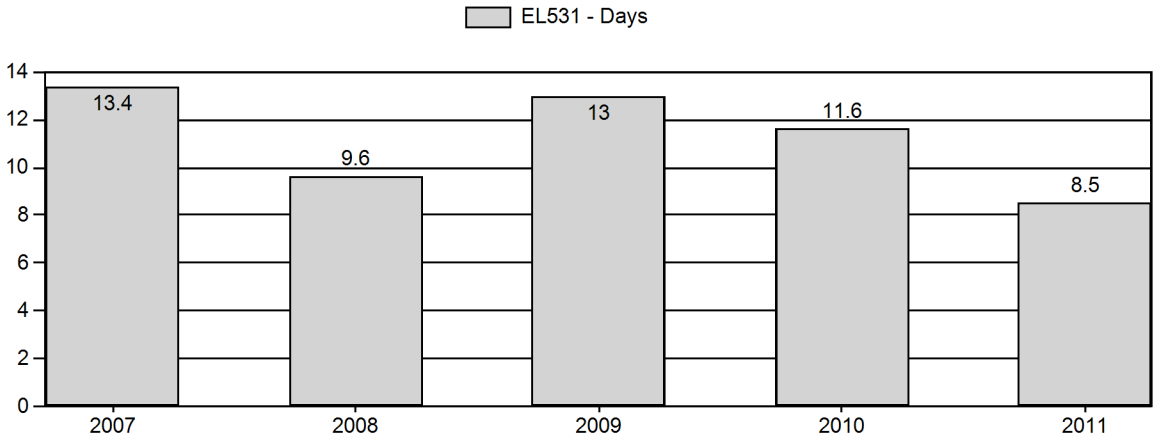
Harvest Success



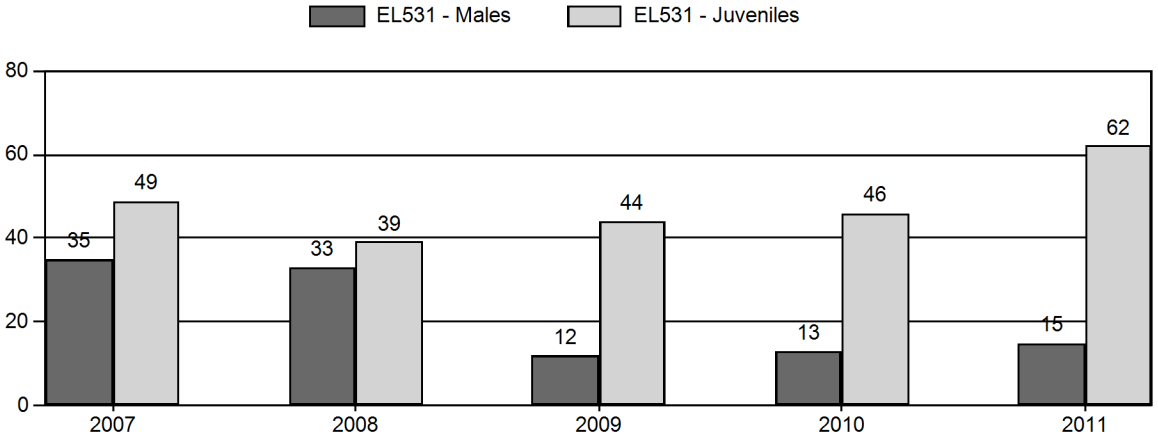
Active Licenses



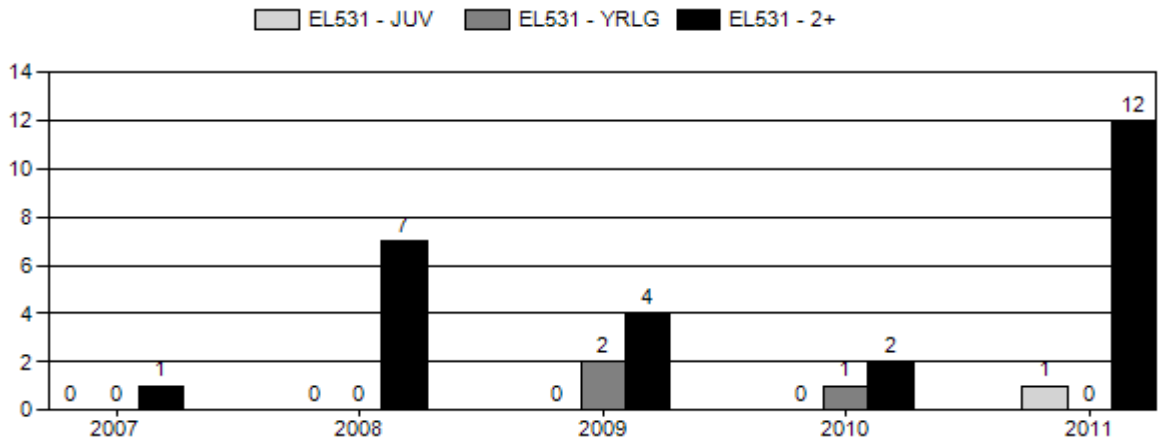
Days per Animal Harvested



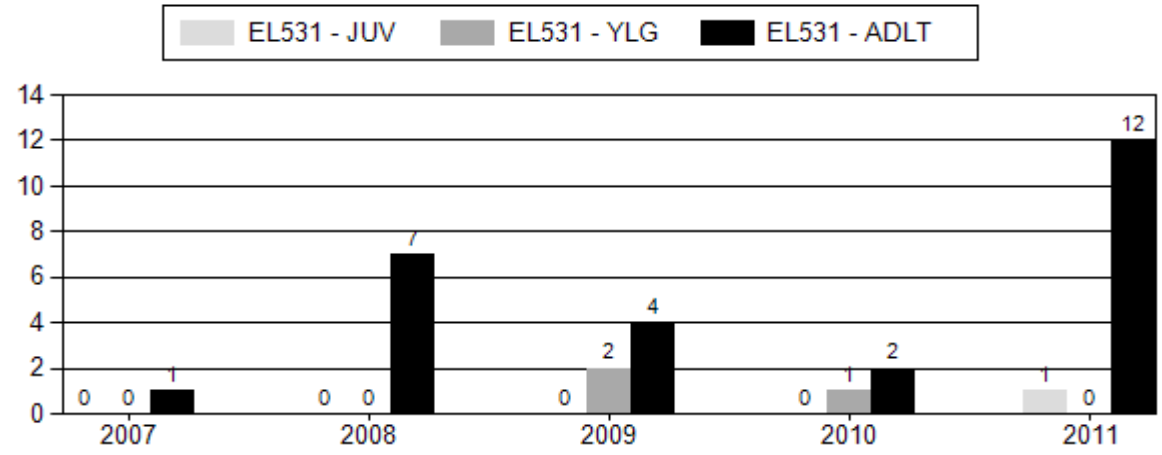
Postseason Animals per 100 Females



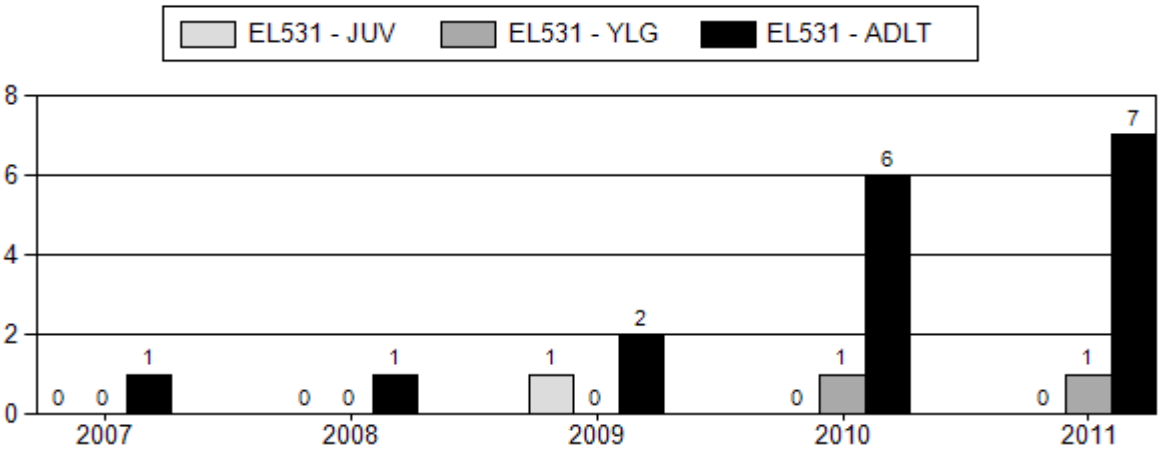
Age Structure of Field Checked Males



Age Structure Data (Field and Laboratory) - Male



Age Structure Data (Field and Laboratory) - Female



2007 - 2011 Postseason Classification Summary

for Elk Herd EL531 - IRON MOUNTAIN

		MALES				FEMALES		JUVENILES				Males to 100 Females				Young to		
Year	Post Pop	Ylg	Adult	Total	%	Total	%	Total	%	Tot Cls	Cls Obj	Ylng	Adult	Total	Conf Int	100 Fem	Conf Int	100 Adult
2007	0	27	68	95	19%	272	55%	132	26%	499	606	10	25	35	± 5	49	± 6	36
2008	0	36	19	55	19%	168	58%	66	23%	289	469	21	11	33	± 0	39	± 0	30
2009	0	70	21	91	8%	741	64%	325	28%	1,157	533	9	3	12	± 0	44	± 0	39
2010	0	53	26	79	8%	604	63%	278	29%	961	617	9	4	13	± 0	46	± 0	41
2011	0	20	16	36	9%	235	56%	145	35%	416	0	9	7	15	± 0	62	± 0	54

EL531 - IRON MOUNTAIN

Hunt Area	Add'l Hunt Areas	Type	Quota	Season Dates	Limitations
5	6	ARCH		09/01 - 09/30	Refer to Section 3 of this Chapter
5		Type 1	400	10/01 - 11/20	Any
5		Type 1	400	11/21 - 01/31	unused area 5 type 1 licenses vaild for antlerless elk
5		Type 6	400	08/15 - 01/31	Reduced Price cow/calf
6		Type 1	200	10/01 - 10/19	any elk off national forest
6		Type 1	200	10/20 - 11/15	unused area 6 type 1 licenses vaild for any elk in entire area
6		Type 1	200	11/16 - 01/31	unused area 6 type 1 licenses vaild for antlerless elk off national forest
6		Type 4	100	08/15 - 01/31	antlerless elk off national forest
6		Type 6	500	10/01 - 01/31	cow or calf off national forest

Area	Type	Active Lic/Htrs		Bull	Spike	Cow	Calf	Total	Success		Days/Harvest	Days	Licenses Sold
2011													
5 IRON MOUNTAIN													
	Type 1	399		251	13	45	5	314	78.70%		7.9	2470	399
	Type 6	319		0	0	173	8	181	56.70%		4.8	865	366
Pooled Total		713	(718)*	251	13	218	13	495	69.40%	(68.9%)*	6.7	3335	
Pooled Resident		575		196	13	192	0	401	69.70%		6.7	2690	
Pooled Nonresident		138		55	0	26	13	94	68.10%		6.9	645	
6 POLE MOUNTAIN													
	Type 1	191		116	5	5	0	126	66.00%		10.1	1268	205
	Type 4	62		0	0	29	0	29	46.80%		16.1	466	100
	Type 6	316		0	0	108	9	117	37.00%		16.6	1940	393
Pooled Total		535	(569)*	116	5	142	9	272	50.80%	(47.8%)*	13.5	3674	
Pooled Resident		469		80	5	135	0	220	46.90%		15.2	3354	
Pooled Nonresident		66		36	0	7	9	52	78.80%		6.2	320	
2011 Hunt Area Total		1248	(1287)*	367	18	360	22	767	61.50%	(59.6%)*	9.1	7009	1463
2011 Herd Total		1259	(1287)*	367	18	360	22	767	60.90%	(59.6%)*	9.1	7009	1463

*Active Licenses

2007 - 2011 Harvest Age Structure

for Elk Herd EL531 - IRON MOUNTAIN

	Males									Females									Herd
Year	Juv	1	% *	2 ^	% **	Tot Aged ++	Not Aged +++	Unk	Tot Chkd	Juv	1	% *	2 ^	% **	Tot Aged ++	Not Aged +++	Unk	Tot Chkd	Tot
2007	0	0	0%	1	100%	1	0	0	1	0	0	0%	0	0%	0	1	0	1	2
2008	0	0	0%	7	100%	7	0	0	7	0	0	0%	1	100%	1	0	2	3	10
2009	0	2	33%	0	0%	2	4	1	7	1	0	0%	0	0%	1	2	2	5	12
2010	0	1	33%	1	50%	2	1	0	3	0	1	14%	3	75%	4	3	1	8	11
2011	1	0	0%	11	100%	12	1	0	13	0	1	12%	5	83%	6	2	2	10	23

* Percent of aged animals (including unaged adults but excluding juveniles) 1 1/2 years old

^ Number of animals two years old and older. Animals aged older than two (excluding unaged adults) are lumped into this two plus category

** Percent of aged animals (not including juveniles or unaged adults) two years old or older

++ includes juveniles

+++ Unaged adults - unaged animals older than yearlings

IRON MOUNTAIN ELK (EL531)
Hunt Areas 5 and 6
2012 HUNTING SEASONS

HUNT AREA	TYPE	OPENS	CLOSES	LIMITATIONS
*5	Gen	Oct.1	Nov. 20	General license; any elk
*CWD Area		Nov. 21	Jan. 31	General license; antlerless elk
	6	Aug. 15	Jan. 31	Limited Quota; 750 licenses cow or calf
*6	Gen	Oct. 1	Oct. 31	General license; any elk off national forest
*CWD Area				General license; antlerless elk off national forest
		Nov. 1	Jan. 31	
				Limited quota; 100 licenses any elk
	1	Oct. 20	Nov. 15	
		Nov. 16	Jan. 31	Unused Area 6 Type 1 license; antlerless elk
	4	Aug. 15	Jan. 31	Limited Quota; 100 licenses antlerless elk off national forest
	6	Oct. 1	Jan. 31	Limited Quota.; 750 licenses cow or calf off national forest
5, 6 ARCHERY		Sept. 1	Sept. 30	Refer to Section 3 of this Chapter

SUMMARY OF CHANGES BY LICENSE NUMBER

Area	Type	Change from 2010
5	General 6	unlimited +350
6	General 1 4 6	unlimited 0 0 +150
Herd Totals	**General** **1** **4** **6**	**unlimited** **0** **0** **+500**

Changes for 2012 include:

- General licenses in Area 5 and 6
- Eliminate Area 5 type 1 licenses
- Increase Area 5 Type 6 quota by 350
- Increased the Area 6 Type 6 quota by 150.
- Area 6 type 1 quota by 100.
- Move opening date of Area 6 type 1 to Oct. 20th to address forest grazing leasee concerns and extend the closing date to Nov. 15th.
- Area 6 type 1 valid for antlerless elk from Nov. 21 to Jan. 31

MANAGEMENT EVALUATION

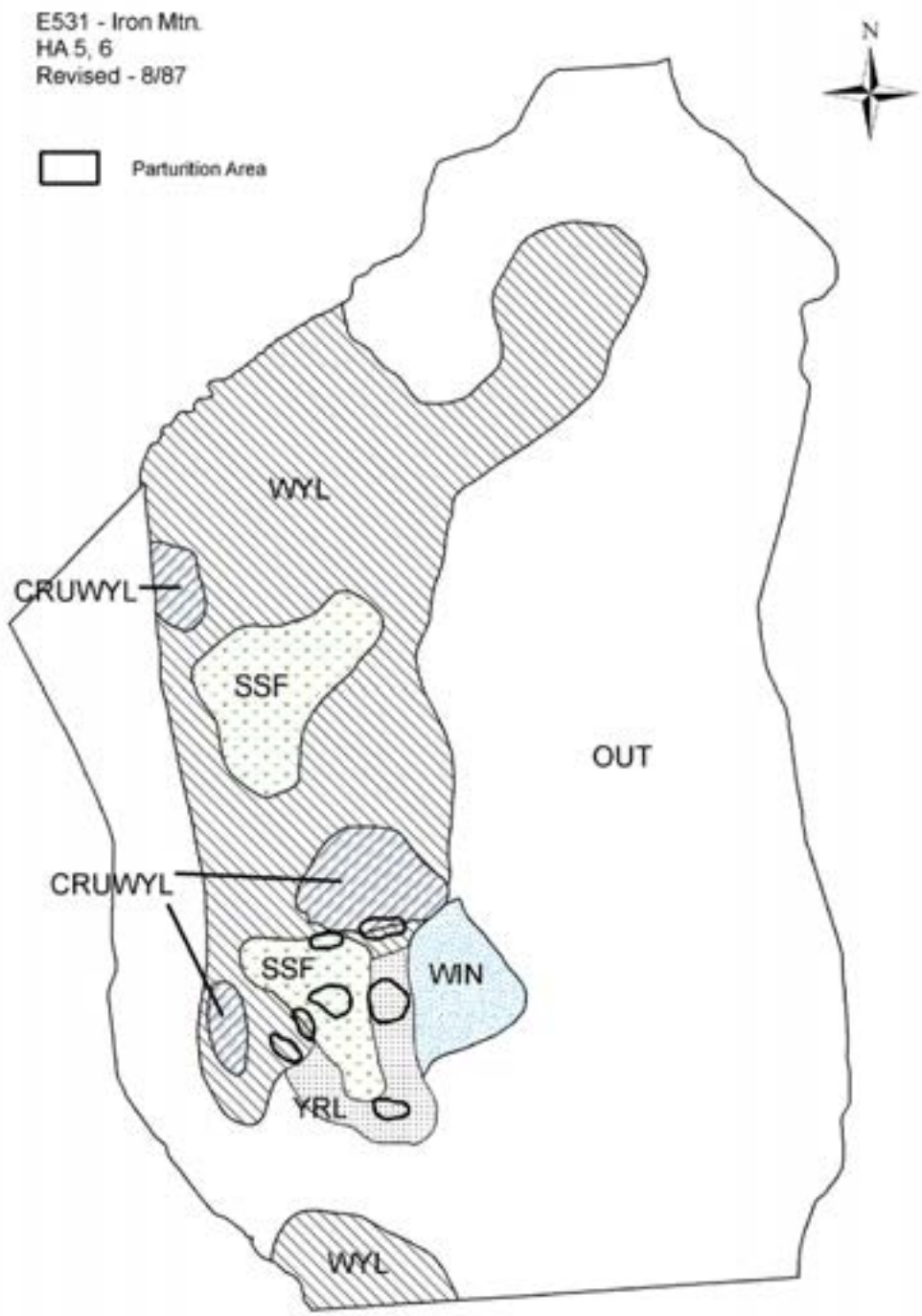
The Iron Mountain Elk Herd is managed under recreational guidelines with a season structured to reduce the population. Harvest management in the Iron Mountain Elk Herd has many challenges due to limited access, clumped elk distributions, interstate and other seasonal movements, lower priority for data collection efforts, varying tolerances for elk among landowners, differing goals for the elk herd among landowners, and different tolerances for who they will allow to hunt and when they will grant access. In 2011, the issue came to a head as winter conditions combined with large ranches that provide refuges from hunting prompted some landowners to complain to the Commission about the number of elk they have to tolerate, especially when licenses and/or season lengths did not allow harvest to address these problems. In recent years, we have made changes to try to increase opportunities for hunters to harvest elk. Harvest increased from 373 elk in 2007 to 761 in 2011. For 2012, there will be a General season

in both hunt Area 5 and 6 that will run from October 1st to January 31st. Type 6 licenses will be significantly increased in both hunt areas and will run to January 31st. Landowner access and tolerance of hunters is the key to addressing the herd's growth and currently landowners are highly polarized among themselves with regard to desired elk numbers.

Population: There is no population model for this herd because of poor to no classification data for most years because this herd receives lower management emphasis due to lack of access to harvest the population at desired rates. Interstate movements of elk between Wyoming and Colorado also confound our efforts to manage this herd. However, past efforts to try to simulate this herd's dynamics; cementum annuli data from 2000, 2001, and 2003; and harvest statistics support observations by field personnel, landowners and hunters that the herd is continuing to increase in number and expand in distribution. A Spreadsheet model simulation based upon only seven years of data suggests that the population is between 2,500 and 4,000 elk. We do not have a reliable way to monitor the herd's status relative to its postseason objective and have limited ability to manage the herd by harvest due to access constraints. The herd has expanded east of Interstate Highway 25 so we have adjusted unit boundaries accordingly. The proposed 2012 season and introduction of the Hunter Management and Access Program will hopefully reduce the elk herd and allow landowners wanting to harvest or redistribute elk ample opportunity to do so.

We classified 416 elk during our 2011 postseason deer surveys which is significantly less than years past. The observed calf:cow ratio of 62:100 is higher than what we observed in the last 5 years and could be due to the low sample size. Our observed bull:cow ratio of 15:100 is undoubtedly low given the number of bulls harvested in this population.

Harvest: The 2011 harvest of 761 elk is 32% higher than in 2010 and 79% higher than the 5 year average. Success rates for Type 6 licenses in both hunt areas did not increase however harvest increased by 48% in Area 5 and 178% in Area 6. We hope to continue to increase harvest with the proposed 2012 season while at the same time addressing landowner concerns.


E531 - Iron Mtn.
HA 5, 6
Revised - 8/87
Parturition Area
N
WYL
CRUWYL
SSF
OUT
CRUWYL
SSF
WIN
YRL
WYL

2011 - JCR Evaluation Form

SPECIES: Elk | PERIOD: 6/1/2011 - 5/31/2012

HERD: EL533 - SNOWY RANGE

HUNT AREAS: 8-12, 110, 114, 125 | PREPARED BY: WILL SCHULTZ

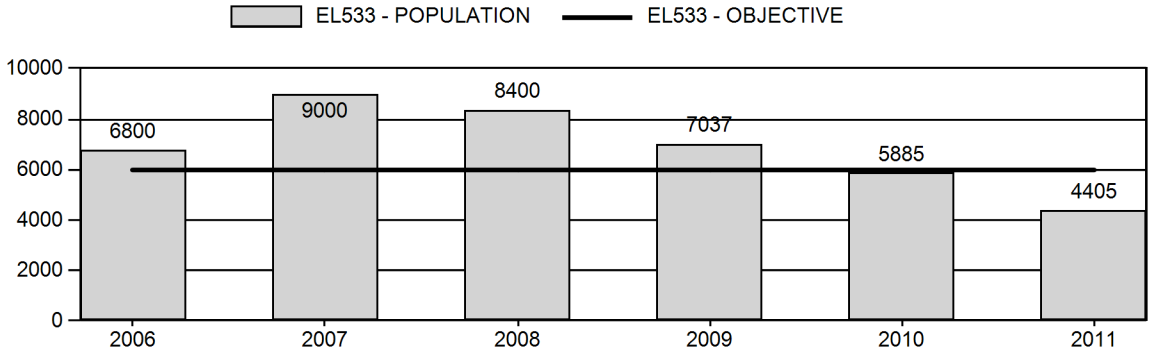
	2006 - 2010 Average	2011	2012 Proposed
Population:	7,424	4,405	3,277
Harvest:	1,575	1,786	1,420
Hunters:	5,218	5,721	5,500
Hunter Success:	30%	31%	26%
Active Licenses:	5,336	5,890	5,500
Active License Percent:	30%	30%	26%
Recreation Days:	36,483	42,110	32,000
Days Per Animal:	23.2	23.6	22.5
Males per 100 Females	24	19	
Juveniles per 100 Females	46	44	

Population Objective:	6,000
Management Strategy:	Recreational
Percent population is above (+) or below (-) objective:	-26.6%
Number of years population has been + or - objective in recent trend:	2
Model Date:	03/02/2012

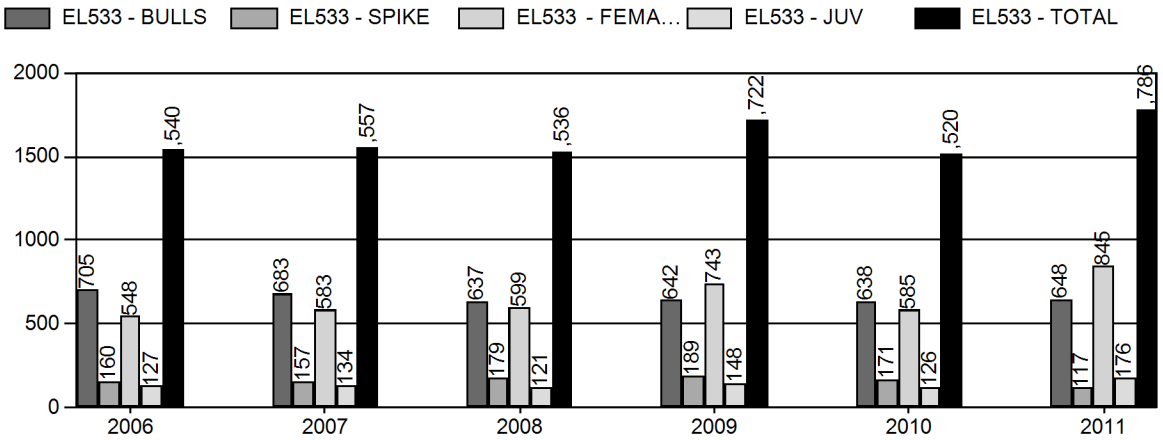
Proposed harvest rates (percent of pre-season estimate for each sex/age group):

	JCR Year	Proposed
Females ≥ 1 year old:	124.5%	28.0%
Males ≥ 1 year old:	56.4%	51.5%
Juveniles (< 1 year old):	13.5%	11.8%
Total:	29.1%	29.4%
Proposed change in post-season population:	-32.0%	-32.3%

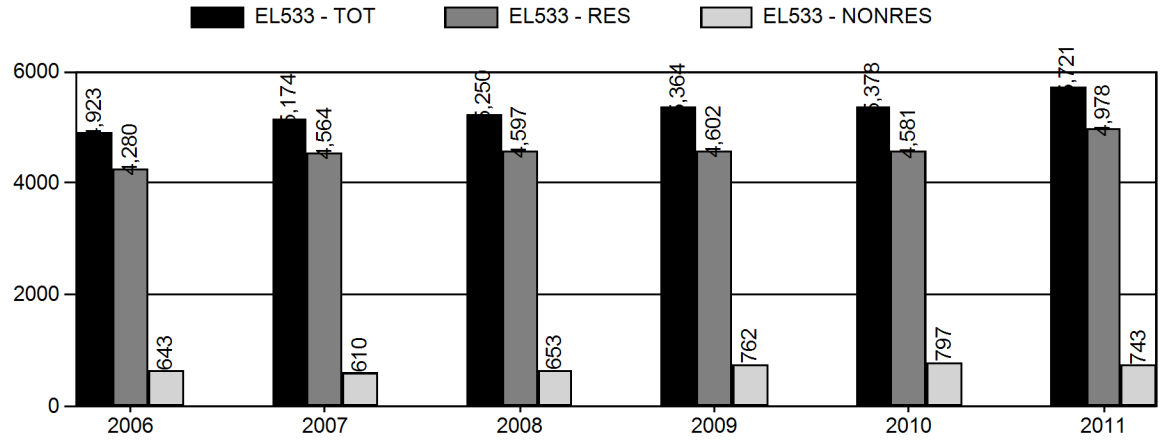
Population Size - Postseason



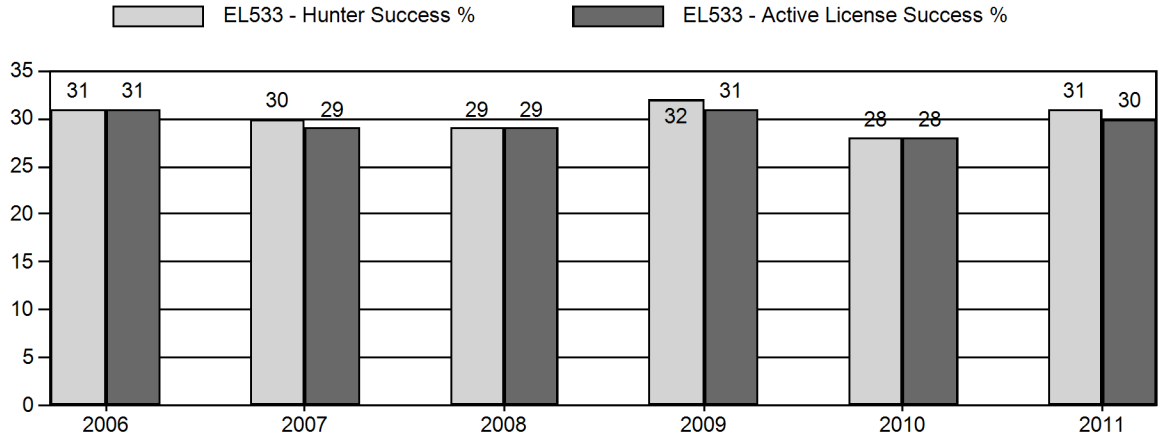
Harvest



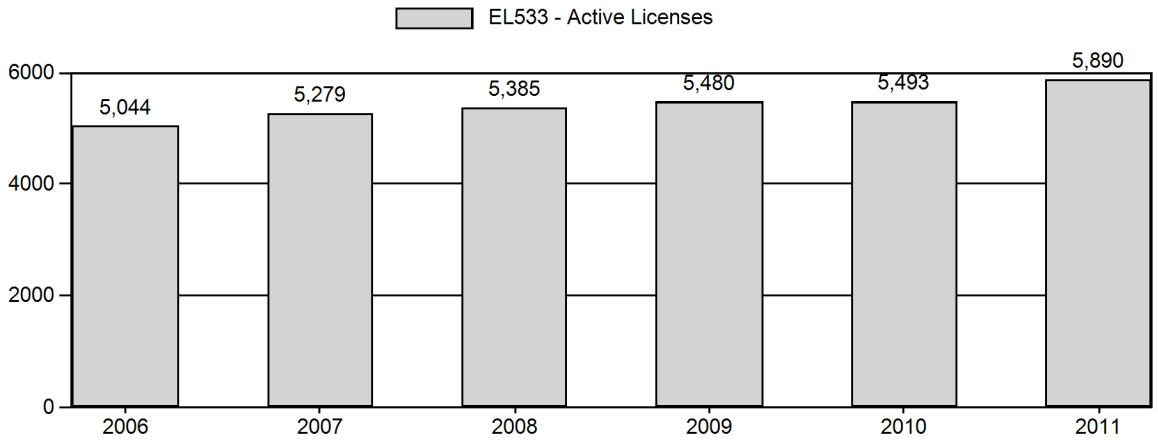
Number of Hunters



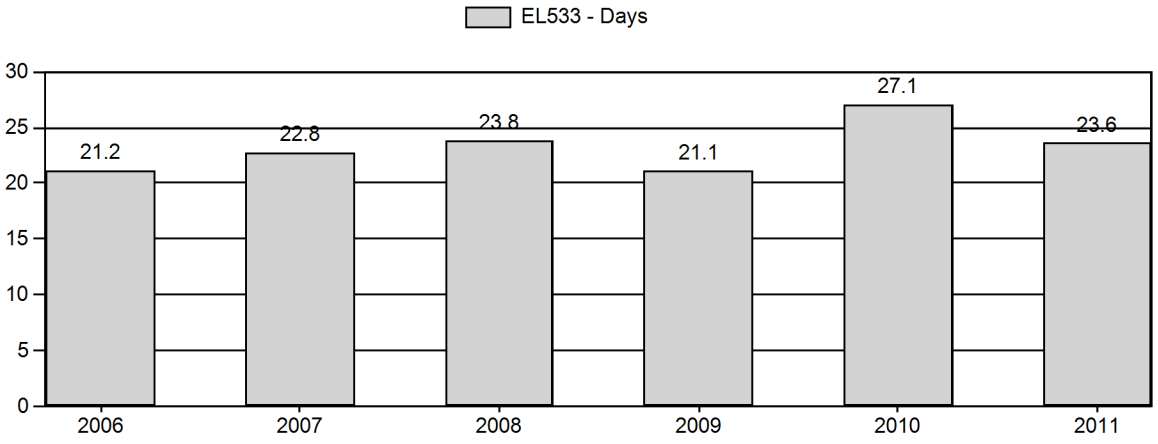
Harvest Success



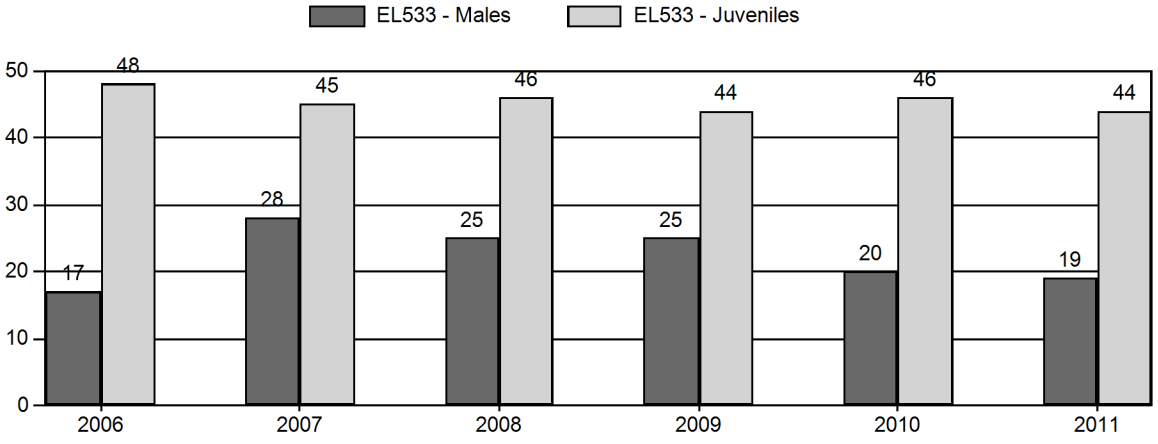
Active Licenses



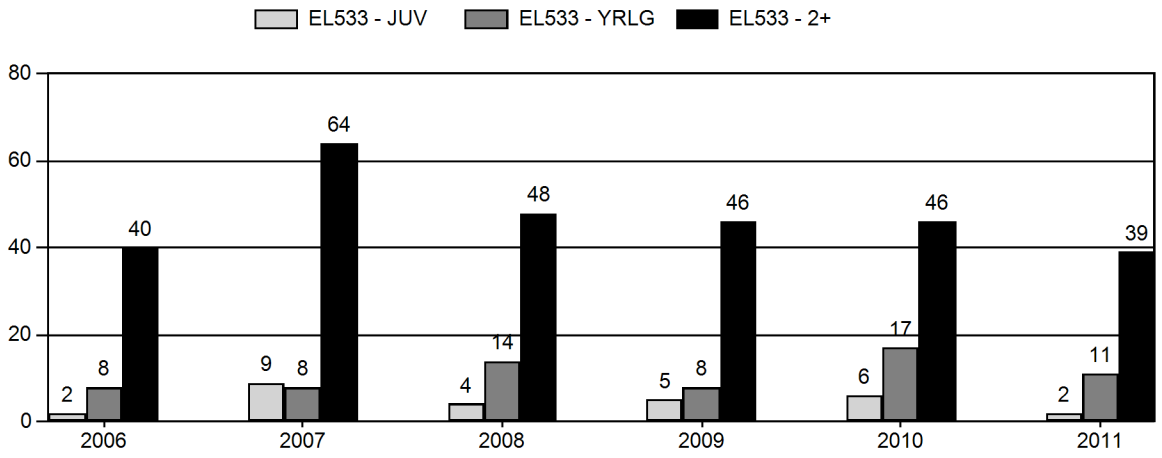
Days per Animal Harvested



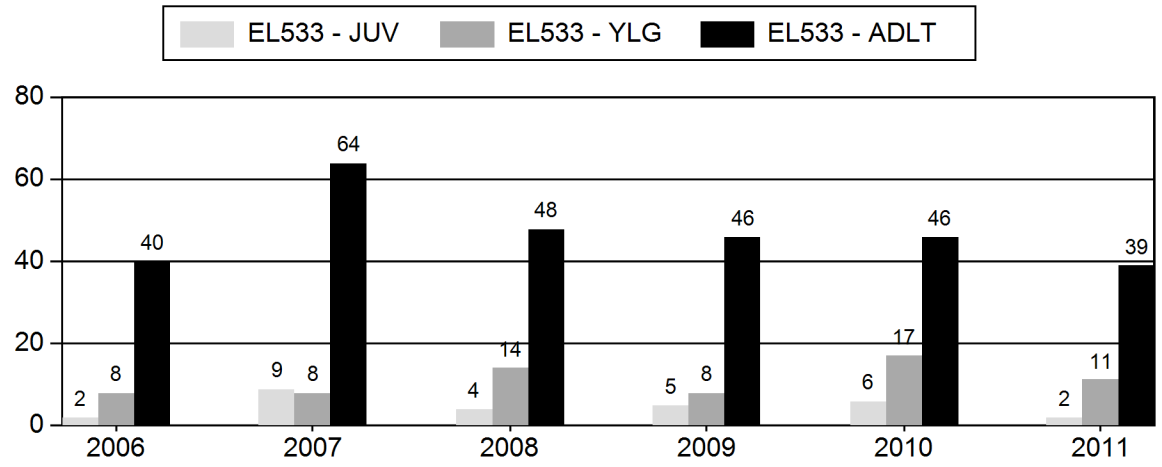
Postseason Animals per 100 Females



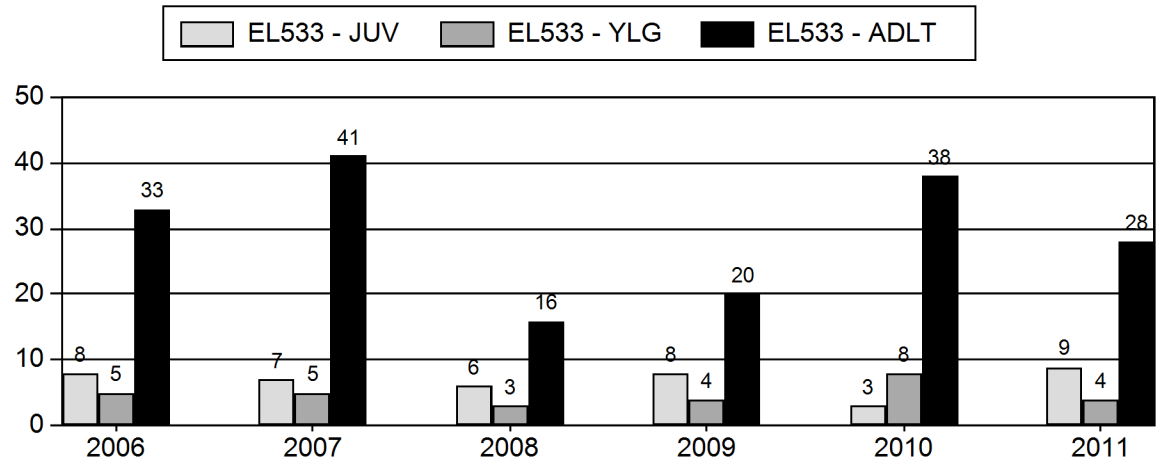
Age Structure of Field Checked Males



Age Structure Data (Field and Laboratory) - Male



Age Structure Data (Field and Laboratory) - Female



2006 - 2011 Postseason Classification Summary

for Elk Herd EL533 - SNOWY RANGE

		MALES				FEMALES		JUVENILES				Males to 100 Females				Young to		
Year	Post Pop	Ylg	Adult	Total	%	Total	%	Total	%	Tot Cls	Cls Obj	Ylng	Adult	Total	Conf Int	100 Fem	Conf Int	100 Adult
2006	6,800	136	55	191	10%	1,115	61%	530	29%	1,836	656	12	5	17	± 1	48	± 3	41
2007	9,000	482	399	881	16%	3,102	58%	1,394	26%	5,377	683	16	13	28	± 1	45	± 1	35
2008	8,400	215	271	486	14%	1,980	59%	909	27%	3,375	690	11	14	25	± 1	46	± 2	37
2009	7,037	279	179	458	15%	1,816	59%	802	26%	3,076	679	15	10	25	± 1	44	± 2	35
2010	5,885	318	200	518	12%	2,633	60%	1,211	28%	4,362	650	12	8	20	± 1	46	± 1	38
2011	4,405	145	109	254	12%	1,308	61%	576	27%	2,138	639	11	8	19	± 1	44	± 2	37

2011 HUNTING SEASONS

EL533 - SNOWY RANGE

Hunt Area	Add'l Hunt Areas	Type	Quota	Season Dates	Limitations
8		Type 1	150	10/01 - 10/31	Any
8		Type 1	150	11/01 - 12/31	Unused Area 8 Type 1 licenses valid for any elk west of Sand Creek Road (Albany County Road 34) and antlerless elk east of Sand Creek Road (Albany County Road 34)
9		GEN		10/15 - 10/19	any elk
9		GEN		10/20 - 11/30	antlered elk
9		Type 6	50	08/15 - 01/31	valid on private land
10		GEN		10/01 - 10/31	any elk
10		Type 4	250	08/15 - 09/30	valid on private land
10		Type 4	250	10/01 - 01/31	Full Priced Antlerless
10		Type 6	500	08/15 - 09/30	valid on private land
10		Type 6	500	10/01 - 01/31	Reduced Price cow/calf
11		Type 1	150	10/01 - 10/31	Any
11		Type 4	300	10/01 - 10/31	Full Priced Antlerless
11		Type 6	25	08/15 - 01/31	valid on private land
12		GEN		10/15 - 10/31	any elk
12		Type 4	100	10/08 - 11/30	Full Priced Antlerless
12	13, 15, 110	Type 6	125	08/15 - 01/31	valid on private land
12	130	Type 7	100	12/01 - 01/31	valid on Savage Meadows HMA (HMA permission slip required)
110		GEN		10/15 - 10/31	any elk
110		Type 4	75	10/08 - 11/30	Full Priced Antlerless
114		Type 1	150	10/01 - 01/31	Any
114	125	Type 4	75	10/01 - 01/31	also valid Area 125 north of I-80
114		Type 6	150	08/15 - 09/30	valid on private land
114	125	Type 6	150	10/01 - 10/31	also valid in Area 125 north of I-80
114		Type 6	150	11/01 - 01/31	valid entire Area 114
125		Type 1	125	10/01 - 11/14	Any
125		Type 1	125	11/14 - 01/31	valid antlerless elk
125		Type 6	200	10/01 - 01/31	Reduced Price cow/calf

Area	Type	Active Lic/Htrs		Bull	Cow	Calf	Total	Success		Days/Harvest	Days	Licenses Sold
2011												
8 BOULDER RIDGE												
	Type 1	142		39	46	0	85	59.90%		15.6	1323	148
Pooled Total		142	(142)*	39	46	0	85	59.90%	(59.9%)*	15.6	1323	
Pooled Resident		126		30	42	0	72	57.10%		17.3	1248	
Pooled Nonresiden		16		9	4	0	13	81.20%		5.8	75	
9 SOUTH SNOWY RANGE												
	General	774		81	43	7	131	16.90%		30.7	4026	
	Type 6	46		0	39	0	39	84.80%		3.9	151	50
Pooled Total		813	(820)*	81	82	7	170	20.90%	(20.7%)*	24.6	4177	
Pooled Resident		736		69	68	7	144	19.60%		26.1	3761	
Pooled Nonresiden		77		12	14	0	26	33.80%		16	416	
10 ROCK CREEK												
	General	1179		183	66	18	267	22.60%		27.6	7356	
	Type 4	73		0	29	4	33	45.20%		12.6	415	88
	Type 6	425		0	117	75	192	45.20%		21.8	4180	500
Pooled Total		1596	(1677)*	183	212	97	492	30.80%	(29.3%)*	24.3	11951	
Pooled Resident		1405		159	186	73	418	29.80%		25.9	10826	
Pooled Nonresiden		191		24	26	24	74	38.70%		15.2	1125	
11 MEDICINE BOW RIVER												
	Type 1	144		37	15	0	52	36.10%		25.9	1348	149
	Type 4	250		0	74	10	84	33.60%		18.7	1568	260
	Type 6	19		0	12	0	12	63.20%		6.8	81	25
Pooled Total		405	(413)*	37	101	10	148	36.50%	(35.8%)*	20.2	2997	
Pooled Resident		342		27	76	10	113	33.00%		22.8	2578	
Pooled Nonresiden		63		10	25	0	35	55.60%		12	419	
12 KENNADAY PEAK												
	General	997		96	66	15	177	17.80%		35.5	6288	
	Type 4	72		0	25	7	32	44.40%		15.9	508	89
	Type 6	49		0	25	2	27	55.10%		8.5	230	126
	Type 7	44		0	0	0	0	0%		0	149	67
Pooled Total		1151	(1162)*	96	116	24	236	20.50%	(20.3%)*	30.4	7175	
Pooled Resident		1007		72	82	22	176	17.50%		36.1	6346	
Pooled Nonresiden		144		24	34	2	60	41.70%		13.8	829	
110 UPPER PLATTE RIVER												
	General	1717		190	129	21	340	19.80%		29.4	10004	
	Type 4	68		0	16	3	19	27.90%		28.2	536	75
	Type 6	20		0	9	0	9	45%		13.4	121	0
Pooled Total		1801	(1805)*	190	154	24	368	20.40%	(20.4%)*	29	10661	
Pooled Resident		1629		170	147	20	337	20.70%		27.7	9319	
Pooled Nonresiden		172		20	7	4	31	18.00%		43.3	1342	
114 KYLE												
	Type 1	143		79	0	0	79	55.20%		16.7	1323	152
	Type 4	18		0	7	0	7	38.90%		14.1	99	24
	Type 6	136		0	31	12	43	31.60%		16.6	712	150
Pooled Total		277	(297)*	79	38	12	129	46.60%	(43.4%)*	16.5	2134	
Pooled Resident		232		64	19	12	95	40.90%		20.4	1936	
Pooled Nonresiden		45		15	19	0	34	75.60%		5.8	198	

Area	Type	Active Lic/Htrs		Bull	Cow	Calf	Total	Success		Days/Harvest	Days	Licenses Sold
2011												
125 ELK MOUNTAIN												
	Type 1	111		60	17	2	79	71.20%		6.6	522	127
	Type 4	2		0	0	0	0	0%		0	32	0
	Type 6	141		0	79	0	79	56.00%		14.4	1138	168
Pooled Total		254	(254)*	60	96	2	158	62.20%	(62.2%)*	10.7	1692	
Pooled Resident		164		25	60	0	85	51.80%		15.5	1321	
Pooled Nonresiden		90		35	36	2	73	81.10%		5.1	371	
2011 Hunt Area To		6439	(6570)*	765	845	176	1786	27.70%	(27.2%)*	23.6	42110	2198
2011 Herd Total		5721	(5890)*	765	845	176	1786	31.20%	(30.3%)*	23.6	42110	2198

*Active Licenses

2006 - 2011 Harvest Age Structure

for Elk Herd EL533 - SNOWY RANGE

	Males									Females									Herd
Year	**Juv**	**1**	**% ***	**2 ^**	**% ****	**Tot Aged ++**	**Not Aged +++**	**Unk**	**Tot Chkd**	**Juv**	**1**	**% ***	**2 ^**	**% ****	**Tot Aged ++**	**Not Aged +++**	**Unk**	**Tot Chkd**	**Tot**
2006	2	8	17%	40	83%	50	0	0	50	8	5	13%	33	87%	46	0	0	46	96
2007	9	8	11%	0	0%	17	64	0	81	7	5	11%	0	0%	12	41	0	53	134
2008	4	14	23%	47	77%	65	1	5	71	6	3	16%	16	84%	25	0	14	39	110
2009	5	8	15%	28	78%	41	18	16	75	8	4	17%	13	76%	25	7	39	71	146
2010	6	17	27%	19	53%	42	27	2	71	3	8	17%	1	11%	12	37	4	53	124
2011	2	11	22%	27	71%	40	12	4	56	9	4	12%	21	84%	34	7	11	52	108

*	Percent of aged animals (including unaged adults but excluding juveniles) 1 1/2 years old
^	Number of animals two years old and older. Animals aged older than two (excluding unaged adults) are lumped into this two plus category
**	Percent of aged animals (not including juveniles or unaged adults) two years old or older
++	includes juveniles
+++	Unaged adults - unaged animals older than yearlings

Snowy Range Elk (EL533)
Hunt Areas 8, 9, 10, 11, 12, 110, 114 and 125
2012 Season Recommendations

Hunt Area	Type	Dates of Seasons Opens	Closes	Limitations
*8	1	Oct. 1	Oct. 31	Limited quota; 150 licenses any elk
		Nov. 1	~~Dec. 31~~ Jan. 31	Unused Area 8 Type 1 licenses valid for any elk west of Sand Creek Road (Albany County Road 34) and antlerless elk east of Sand Creek Road (Albany County Road 34)
	6	Aug. 15	Jan. 31	Limited quota; 100 licenses cow or calf
9		Oct. ~~15~~ 1	Oct. ~~19~~ 7	General license; any elk
		Oct. ~~20~~ 8	Oct. 31	General license; ~~antlered~~ antlerless elk
	6	Aug. 15	~~Jan. 31~~ Sept. 30	Limited quota; ~~50~~ 100 licenses cow or calf valid on private land
		Oct. 1	Jan. 31	Unused Area 9 Type 6 licenses valid in the entire area
10		Oct. 1	Oct. 31	General license; any elk
	~~4~~	~~Aug. 15~~	~~Sep. 30~~	~~Limited quota; 250 licenses antlerless elk valid on private land~~
	6	Aug. 15	Sep. 30	Limited quota; ~~500~~ 800 licenses cow or calf valid on private land
		Oct 1	Jan. 31	Unused Area 10 ~~Type 4 and~~ Type 6 licenses valid ~~for antlerless elk~~ in the entire Area
11	1	Oct. 1	Oct. 31	Limited quota; 150 licenses any elk
	4	Oct. 1	Oct. 31	Limited quota; 300 licenses antlerless elk
	6	Aug. 15	Jan. 31	Limited quota; 25 licenses cow or calf valid on private land
12		Oct. 15	Oct. 31	General license; any elk
	~~4~~	~~Oct. 8~~	~~Nov. 30~~	~~Limited quota; 100 licenses antlerless elk~~
12, *13, 15, *110	6	Aug. 15	Jan. 31	Limited quota; ~~125~~ 75 licenses cow or calf valid on private land
12, 130	7	Oct. 1	Nov. 14	Limited quota; 200 licenses cow or calf valid in Area 12
		Dec. 1	Jan. 31	~~Limited quota; 100 licenses cow or calf~~ Unused Area 12, 130 Type 7 licenses valid on the Savage Meadows Hunter Management Area (HMA permission slip required)
*110		Oct. 15	Oct. 31	General license; any elk
		Oct. 22	Oct. 31	General license; antlerless elk
	~~4~~	~~Oct. 8~~	~~Nov. 30~~	~~Limited quota; 75 licenses antlerless elk~~
	7	Oct. 1	Nov. 14	Limited quota; 100 licenses cow or calf
114	1	Oct. 1	Jan. 31	Limited quota; ~~150~~ 100 licenses any elk
	~~4~~	~~Oct. 1~~	~~Oct. 31~~	~~Limited quota; 75 licenses antlerless elk; also valid in Area 125 north of Interstate Highway 80~~
	6	Aug. 15	~~Sep. 30~~ Jan. 31	Limited quota; 150 licenses cow or calf
		~~Oct. 1~~	~~Oct. 31~~	~~Unused Area 114 Type 6 licenses cow or calf; also valid in Area 125 north of Interstate Highway 80~~
		~~Nov. 1~~	~~Jan. 31~~	~~Unused Area 114 Type 4 and Type 6 licenses valid for antlerless elk in all of Area 114~~
*125	1	Oct. 1	~~Nov. 14~~ Dec. 31	Limited quota; ~~125~~ 150 licenses any elk
		~~Nov. 15~~ Jan. 1	Jan. 31	Unused Area 125 Type 1 licenses valid for antlerless elk
	6	Oct. 1	Jan. 31	Limited quota; 200 licenses cow or calf

Summary of Proposed Changes in License Numbers

Hunt Area	Type	Change From 2011
8	6	+100
9	6	+50
10	4	-250
10	6	+300
12	6	-50
12	4	-100
12, 130	7	+100
110	4	-75
110	7	+100
114	1	-50
114	4	-75
125	1	+25
Herd Unit Total	1	-25
Herd Unit Total	4	-500
Herd Unit Total	6	+400
Herd Unit Total	7	+200

Management Evaluation

A postseason classification sample of 2,138 elk produced ratios of 19 bulls and 44 calves /100 cows in this herd unit (Figure 1). The classification survey was conducted from a helicopter in conjunction with local mule deer classifications. A comparison of the trend in bull ratios between General season Hunt Areas and Limited Quota Hunt Areas in the Snowy Range Herd Unit demonstrates the difference in ratios between these two season strategies (Figure 2). It would appear the Limited Quota Hunt Area's ratio "carries" the bull ratio at the entire herd unit level.

The 2010 postseason population estimate for the Snowy Range herd unit was 4,405 elk. We consider the POP-II population model for this herd unit to be low quality. Annual postseason classification data collected from the ground in Hunt Areas 8 and 9 is known to contain an unknown proportion elk which have migrated into Wyoming from Colorado. Classification data from other Hunt Areas is typically collected in late fall, in conjunction with mule deer surveys, and may not provide adequate representation for this segment of the elk herd's composition, due to unknown elk which may be located at higher elevations on national forest. The applicability of current elk model parameters, to the Snowy Range Herd Unit, has not been validated either.

Figure 1. 2000-2011 Bull and calf ratios from the Snowy Range Elk Herd Unit, Wyoming.

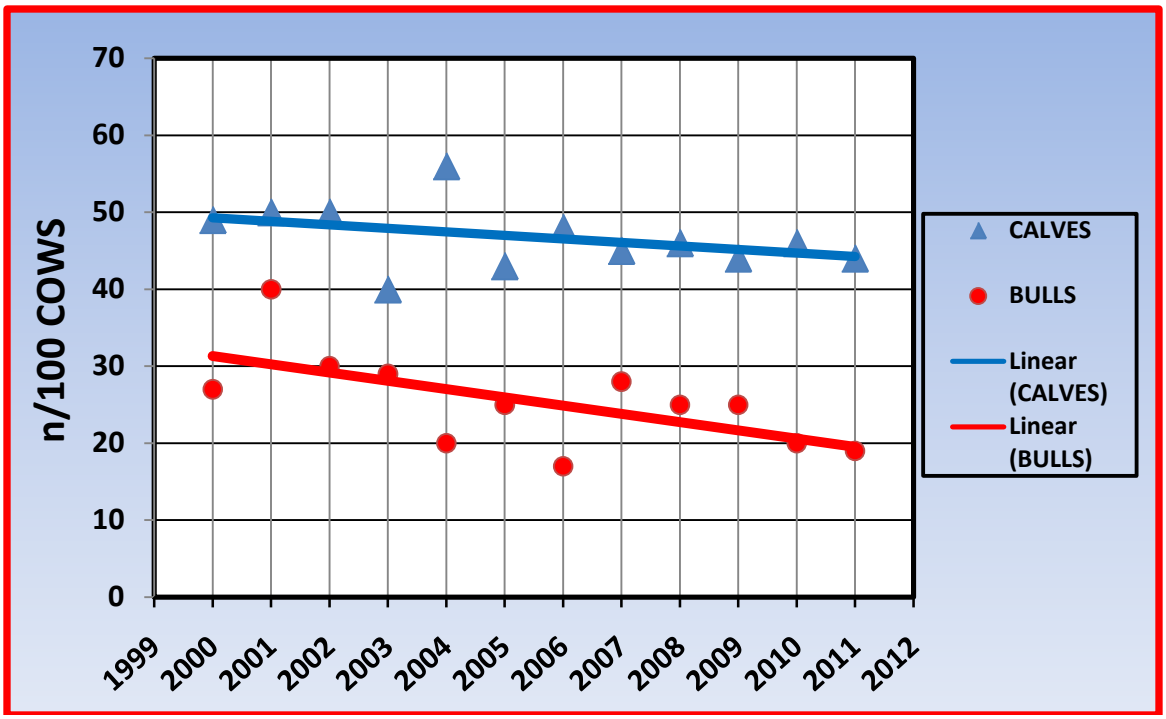
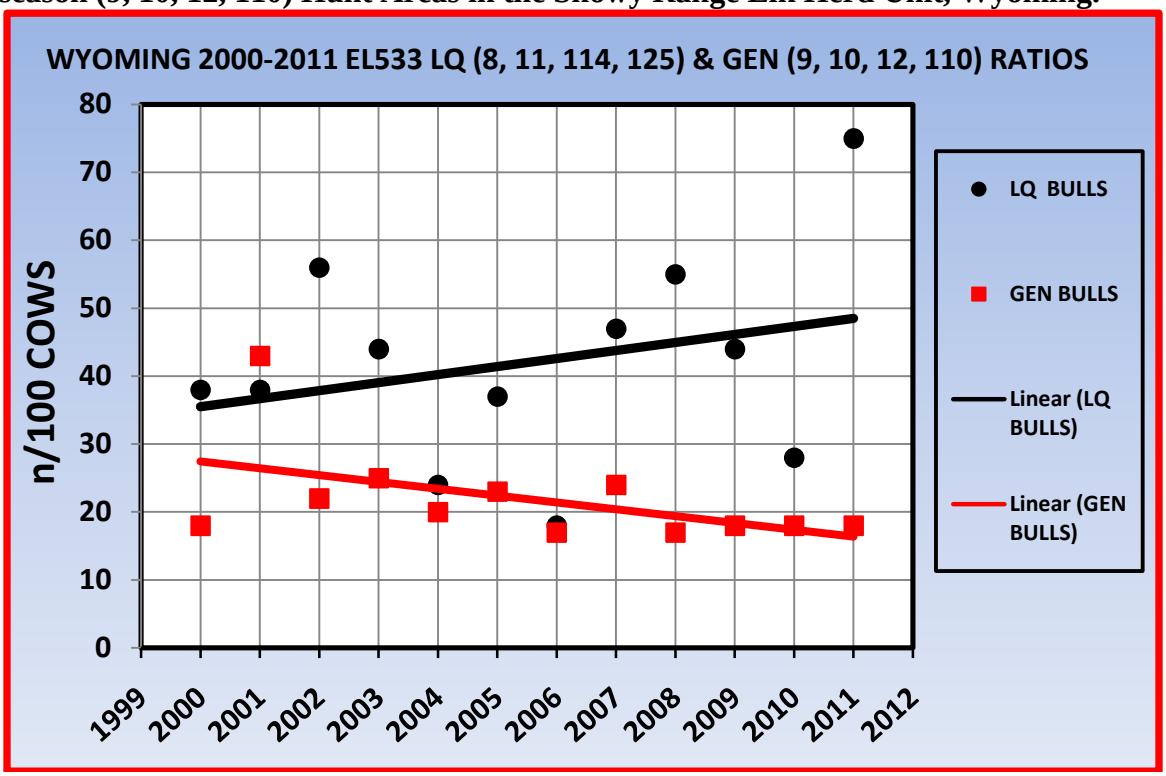


Figure 2. 2000-2011 Bull ratios from limited quota (8, 11, 114, 125) and general season (9, 10, 12, 110) Hunt Areas in the Snowy Range Elk Herd Unit, Wyoming.



Harvest

The 2011 preliminary harvest survey data indicated 5,857 (6% increase from 2010) active licensed hunters harvested 1,883 (19% increase from 2010), with a total harvest success

rate of 32% (4% increase from 2010). Branch antlered bulls accounted for 84% of the male harvest in 2011, and this was 5% more than the 2010 branch antlered bull harvest. Antlerless elk accounted for 58% of the total 2011 elk harvest in the Snowy Range Herd Unit.

2012 Season Proposal

The proposed seasons in the Snowy Range Herd Unit should continue to reduce the overall elk population. Opening limited quota antlerless seasons on private land in mid-August and increasing the length of these seasons should provide landowners and managers with an opportunity to address late summer and late winter damage issues. Offering additional Type 1 licenses and season days in Areas 8, 114 and 125 should assist in reducing the bull ratio towards the desired recreational management strategy ratio maximum. Future harvest opportunity for antlered elk may need to be further reduced to insure ratios do not reach the threshold for the recreational management strategy.

Data Set: E533_2012_SEASON.GN1 03/02/2012 02:09 pm Page 1

EL533_2012_SEASON
Data from 1987 to 2013 Simulation from 2005 to 2013

Age Class	Init Pop. Male	Init Pop. Female	Prop. Presn Male	Prop. Presn Female	Mort% Postsn Male	Mort% Postsn Female	Effort Set 1 Male	Effort Set 1 Female	Effort Set 2 Male	Effort Set 2 Female
0	31.0	31.0	40.0	40.0	10.0	10.0	1.00	1.00	1.00	1.00
1	17.0	20.2	1.0	1.0	6.5	6.0	0.55	1.00	0.30	1.00
2	10.2	16.2	1.0	1.0	6.5	6.0	1.00	1.00	1.00	1.00
3	6.1	12.9	1.0	1.0	6.5	6.0	1.00	1.00	1.00	1.00
4	3.7	10.4	1.0	1.0	6.5	6.0	1.00	1.00	1.00	1.00
5	2.2	8.3	1.0	1.0	6.5	6.0	1.00	1.00	1.00	1.00
6	1.3	6.6	1.0	1.0	6.5	6.0	1.00	1.00	1.00	1.00
7	0.8	5.3	1.0	1.0	25.0	10.0	1.00	1.00	1.00	1.00
8	0.5	4.2	1.0	1.0	50.0	10.0	1.00	1.00	1.00	1.00
9	0.3	3.4	1.0	1.0	75.0	10.0	1.00	1.00	1.00	1.00
10	0.2	2.7	1.0	1.0	80.0	10.0	1.00	1.00	1.00	1.00
11	0.1	2.2	1.0	1.0	100.0	10.0	1.00	1.00	1.00	1.00
12	0.1	1.7	1.0	1.0	100.0	20.0	1.00	1.00	1.00	1.00
13	0.0	1.4	1.0	1.0	100.0	30.0	1.00	1.00	1.00	1.00
14	0.0	1.1	1.0	1.0	100.0	40.0	1.00	1.00	1.00	1.00
15	0.0	0.9	1.0	1.0	100.0	50.0	1.00	1.00	1.00	1.00
16	0.0	0.7	1.0	1.0	100.0	60.0	1.00	1.00	1.00	1.00
17	0.0	0.6	1.0	1.0	100.0	70.0	1.00	1.00	1.00	1.00
18	0.0	0.5	1.0	1.0	100.0	80.0	1.00	1.00	1.00	1.00
19	0.0	0.4	1.0	1.0	100.0	90.0	1.00	1.00	1.00	1.00
20	0.0	0.3	1.0	1.0	100.0	100.0	1.00	1.00	1.00	1.00

Sum = 204.5 Estimated Sum = 10912 Subadults: Ages 0 to 0

Data Set: E533_2012_SEASON.GN1 03/02/2012 02:09 pm Page 2

MSI Function is Linear

Bio-Year	Preseason MSI	Harvest // Des. Pop Size in NA Subadults#	Males#	Females#	Postseason MSI	Effort & Wound Set Used
2005	0.88	110	796	520	0.23	1
2006	0.73	127	865	548	0.73	1
2007	0.85	134	840	583	1.53	1
2008	0.83	121	816	599	1.63	1
2009	0.97	148	831	743	1.85	1
2010	0.89	126	781	593	1.70	1
2011	1.07	187	793	903	1.50	1
2012	1.15	120	500	800	1.50	1
2013	1.28	120	500	800	1.50	1

Set 1	Wounding Loss	10.%	10.%	10.%	Yearling Male 10.%
Set 2	Wounding Loss	10.%	10.%	10.%	Yearling Male 10.%

Bio-Year	Young/100 Fems Age 1 - 1	Young/100 Fems Age 2 - 2	Young/100 Fems Age 3 - 20	Sex Ratio: 50 : 50
2005	0.0	30.0	90.0	
2006	0.0	30.0	90.0	
2007	0.0	30.0	90.0	
2008	0.0	30.0	90.0	
2009	0.0	30.0	90.0	
2010	0.0	30.0	90.0	
2011	0.0	30.0	90.0	
2012	0.0	30.0	90.0	
2013	0.0	30.0	90.0	
2014	0.0	30.0	90.0	

POP-II (V1.2.9) Simulation Output Tables for E533_2012_SEASON.GN1, 03/02/2012 02:09 pm

Table 1. Population Size During Bio-Year for E533_2012_SEASON.GN1 03/02/2012 02:09 pm

Bio-Year	Start	Pre-Season	Post Season	End	%Growth
2005	10912	9681	8112	7922	5.4
2006	11498	10396	8702	8099	2.0
2007	11732	10428	8715	7548	-6.8
2008	10931	9745	8056	6977	-7.2
2009	10143	8847	6952	5912	-14.8
2010	8643	7618	5968	5146	-12.4
2011	**7568**	**6476**	**4405**	**3868**	**-24.0**
2012	5748	4839	3277	2875	-25.9
2013	4259	3514	1952	1710	-40.0

Table 2. Preseason Natural Mortality for E533_2012_SEASON.GN1 03/02/2012 02:09 pm

Bio-Year	Sub-Adults	Adult Males	Adult Females	Total	% of Pop
2005	1165	20	47	1231	11.3
2006	1044	17	41	1102	9.6
2007	1235	20	48	1304	11.1
2008	1123	19	44	1186	10.8
2009	1228	20	48	1296	12.8
2010	972	15	37	1025	11.9
2011	1036	15	40	1091	14.4
2012	865	11	33	909	15.8
2013	708	10	27	745	17.5

Table 3. Harvest Mortality for E533_2012_SEASON.GN1 03/02/2012 02:09 pm

Bio-Year	Sub-Adults	Adult Males	Adult Females	Total	% of Pop
2005	110	796	520	1426	14.7
2006	127	865	548	1540	14.8
2007	134	840	583	1557	14.9
2008	121	816	599	1536	15.8
2009	148	831	743	1722	19.5
2010	126	781	593	1500	19.7
2011	187	793	903	1883	29.1
2012	120	500	800	1420	29.3
2013	120	500	800	1420	40.4

Table 4. Harvest Percentages for E533_2012_SEASON.GN1 03/02/2012 02:09 pm

Bio-Year	Sub-Adults	Adult Males	Adult Females	Total	Yearling Males
2005	5.1	35.4	9.8	14.73	26.8
2006	5.0	37.3	9.9	14.81	28.8
2007	5.6	35.4	10.3	14.93	32.1
2008	5.4	36.6	11.4	15.76	28.8
2009	7.6	40.5	15.3	19.46	29.3
2010	7.2	45.8	14.3	19.69	28.5
2011	**13.5**	**56.4**	**24.5**	**29.07**	**33.1**
2012	11.8	51.5	28.0	29.35	36.4
2013	17.8	67.1	38.2	40.41	35.2

Table 5. Postseason Natural Mortality for E533_2012_SEASON.GN1 03/02/2012 02:09 pm

Bio-Year	Sub-Adults	Adult Males	Adult Females	Total	% of Pop
2005	47	26	117	190	2.3
2006	175	78	350	603	6.9
2007	344	159	664	1167	13.4
2008	347	148	584	1079	13.4
2009	328	142	571	1041	15.0
2010	275	96	451	822	13.8
2011	177	53	307	537	12.2
2012	133	42	227	401	12.2
2013	81	19	141	242	12.4

Table 6. Preseason Ratios for E533_2012_SEASON.GN1 03/02/2012 02:09 pm

Bio-Year	Subadults /100 1+F	2+ Males /100 1+F	Yr. Males /100 1+F	Ad Males /100 1+F
2005	40.5	25.5	17.0	42.5
2006	45.6	24.1	17.7	41.8
2007	42.4	22.6	19.4	42.0
2008	43.0	24.4	18.0	42.4
2009	39.9	24.1	18.1	42.2
2010	42.3	23.8	17.2	41.0
2011	37.6	20.1	18.1	38.2
2012	35.6	16.7	17.4	34.1
2013	32.3	17.9	17.7	35.6

Table 7. Postseason Ratios for E533_2012_SEASON.GN1 03/02/2012 02:09 pm

Bio-Year	Subadults /100 1+F	2+ Males /100 1+F	Yr. Males /100 1+F	Ad Males /100 1+F
2005	42.9	15.0	14.1	29.1
2006	48.4	13.3	14.3	27.6
2007	44.9	13.0	16.0	29.0
2008	46.2	14.0	14.9	28.9
2009	43.9	13.0	15.2	28.2
2010	46.3	10.7	13.5	24.1
2011	43.8	5.8	14.0	19.8
2012	44.8	6.4	15.0	21.4
2013	44.8	1.5	14.6	16.1

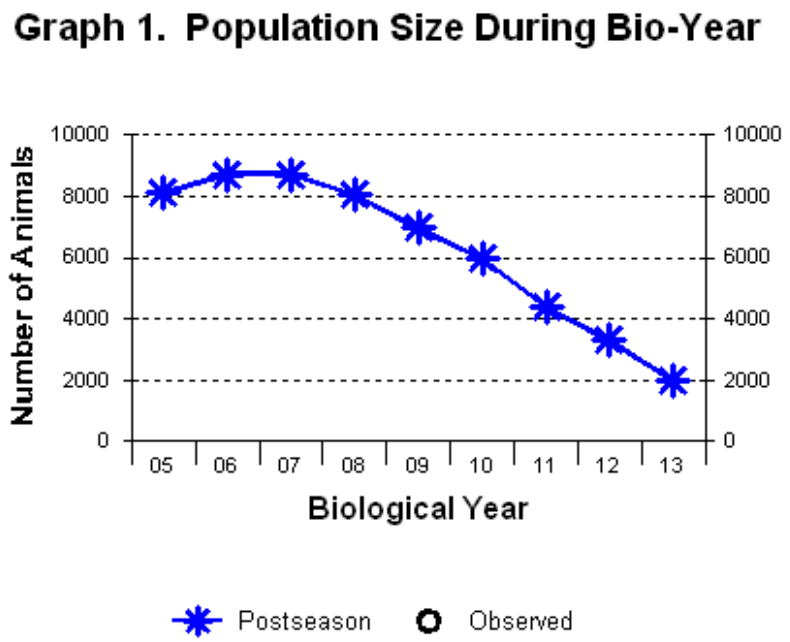
Table 8. End of Year Ratios for E533_2012_SEASON.GN1 03/02/2012 02:09 pm

Bio-Year	Subadults /100 Adlts	Subadults /100 1+F	Yr. Males /100 1+F	Ad Males /100 1+F
2005	33.2	43.0	14.2	29.3
2006	37.7	48.3	14.7	28.0
2007	33.8	43.8	16.6	29.7
2008	34.3	44.3	15.3	29.4
2009	32.4	41.7	15.6	28.7
2010	35.4	44.1	13.7	24.5
2011	35.0	42.0	14.3	20.2
2012	35.3	43.0	15.3	21.8
2013	37.0	43.1	14.9	16.5

Table 9. Reproduction at Start of Bio-Year for E533_2012_SEASON.GN1 03/02/2012 02:09 pm

Bio-Year	Young / 100 AF 1 +	Sub-Ad. / 100 AF 1 +	Total Young	Total Sub-Adult	Total Females 1 +
2005	62	62	3308	3308	5336
2006	64	64	3576	3576	5588
2007	64	64	3633	3633	5703
2008	64	64	3383	3383	5302
2009	65	65	3166	3166	4905
2010	65	65	2731	2731	4193
2011	65	65	2421	2421	3725
2012	65	65	1880	1880	2885
2013	65	65	1383	1383	2120

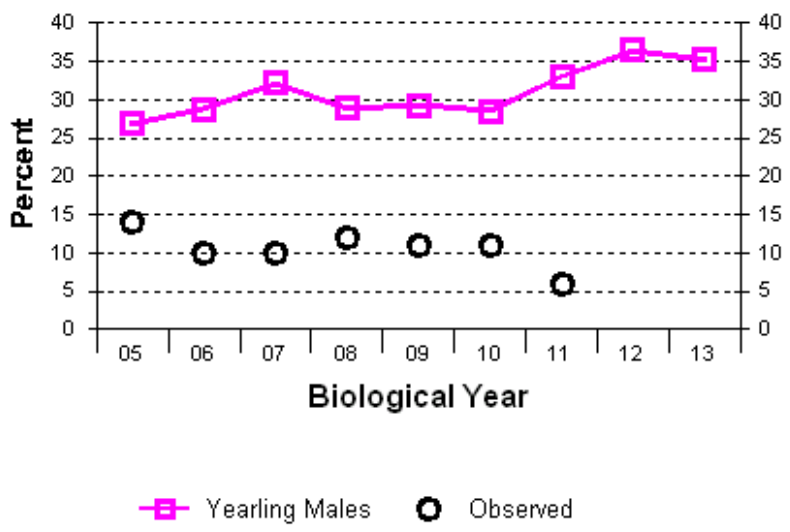
POP-II (V1.2.9) Graph 1. Population Size During Bio-Year



E533_2012_SEASON.GN1, 03/02/2012 02:09 pm

YR	SIM	OBS
05	8112	-----
06	8702	-----
07	8715	-----
08	8056	-----
09	6952	-----
10	5968	-----
11	4405	-----
12	3277	-----
13	1952	-----
	AVERAGES	
of Col.	6238	

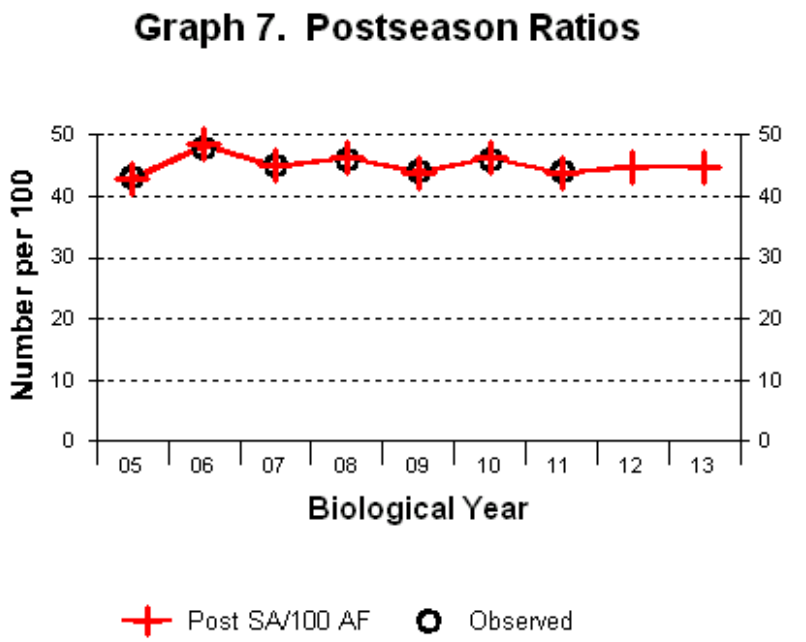
POP-II (V1.2.9) Graph 4. Harvest Percentages



12_SEASON.GN1, 03/02/2012 02:09 pm, Correlation (R) = -0.875, GOF = -0.845

YR	SIM	OBS
05	27	14
06	29	10
07	32	10
08	29	12
09	29	11
10	29	11
11	33	6
12	36	-----
13	35	-----
	AVERAGES	
of Col.	31	
of Pair	30	11

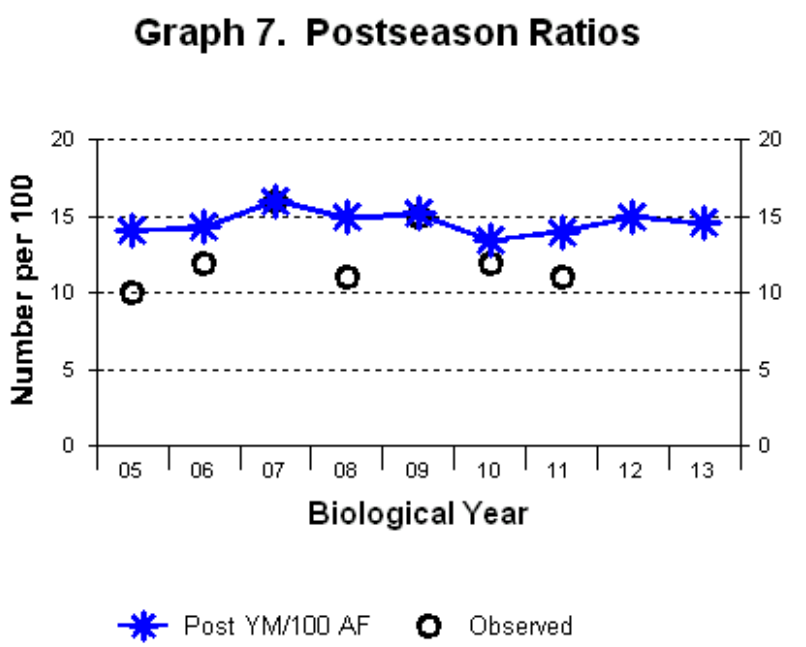
POP-II (V1.2.9) Graph 7. Postseason Ratios



012_SEASON.GN1, 03/02/2012 02:09 pm, Correlation (R) = 0.999, GOF = 0.995

YR	SIM	OBS
05	43	43
06	48	48
07	45	45
08	46	46
09	44	44
10	46	46
11	44	44
12	45	-----
13	45	-----
	AVERAGES	
of Col.	45	
of Pair	45	45

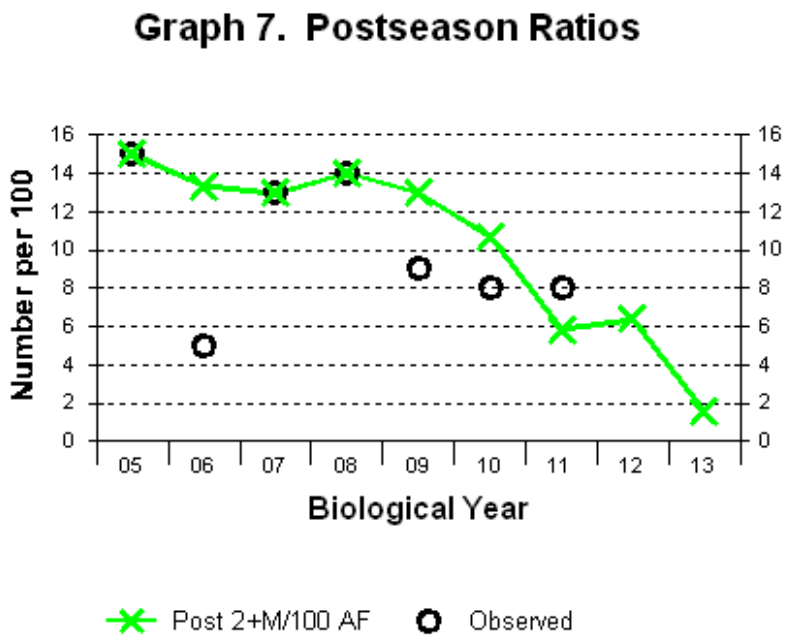
POP-II (V1.2.9) Graph 7. Postseason Ratios



012_SEASON.GN1, 03/02/2012 02:09 pm, Correlation (R) = 0.768, GOF = 0.788

YR	SIM	OBS
05	14	10
06	14	12
07	16	16
08	15	11
09	15	15
10	13	12
11	14	11
12	15	-----
13	15	-----
	AVERAGES	
of Col.	15	
of Pair	15	12

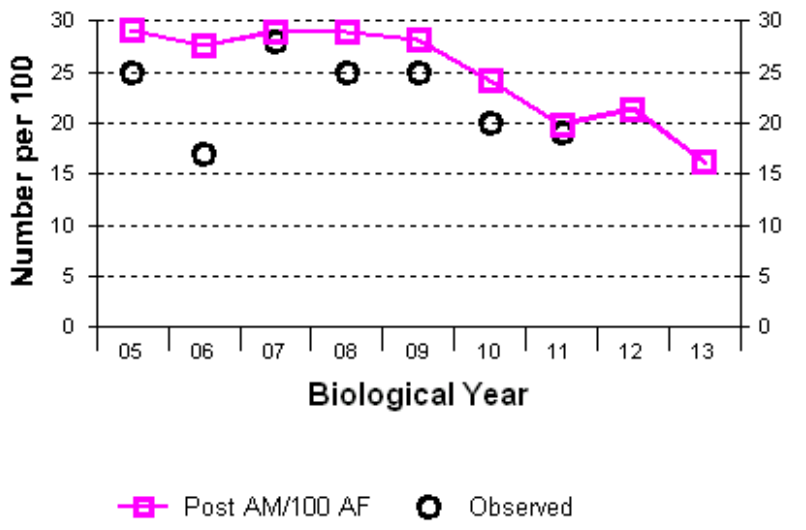
POP-II (V1.2.9) Graph 7. Postseason Ratios



012_SEASON.GN1, 03/02/2012 02:09 pm, Correlation (R) = 0.484, GOF = 0.639

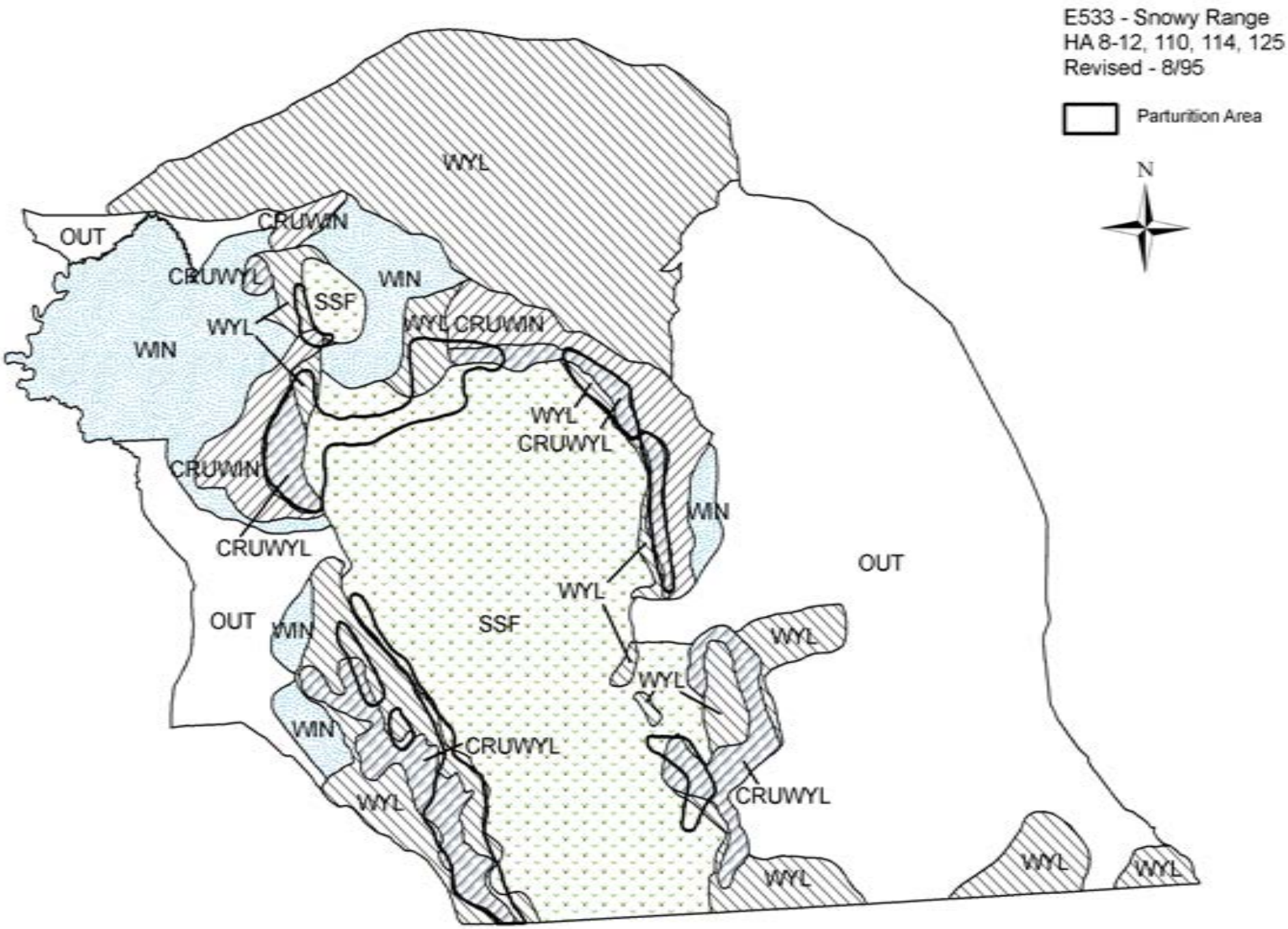
YR	SIM	OBS
05	15	15
06	13	5
07	13	13
08	14	14
09	13	9
10	11	8
11	6	8
12	6	-----
13	2	-----
	AVERAGES	
of Col.	10	
of Pair	12	10

POP-II (V1.2.9) Graph 7. Postseason Ratios



012_SEASON.GN1, 03/02/2012 02:09 pm, Correlation (R) = 0.632, GOF = 0.781

YR	SIM	OBS
05	29	25
06	28	17
07	29	28
08	29	25
09	28	25
10	24	20
11	20	19
12	21	-----
13	16	-----
	AVERAGES	
of Col.	25	
of Pair	27	23


E533 - Snowy Range
HA 8-12, 110, 114, 125
Revised - 8/95
Parturition Area
N
WYL
OUT
CRUWIN
CRUWYL
WIN
SSF
WYL
WYL CRUWIN
WIN
WYL
CRUWYL
CRUWIN
WIN
CRUWYL
OUT
WYL
OUT
WIN
SSF
WYL
WYL
WIN
CRUWYL
CRUWYL
WYL
WYL
WYL
WYL

2011 - JCR Evaluation Form

SPECIES: Elk | PERIOD: 6/1/2011 - 5/31/2012

HERD: EL534 - SHIRLEY MOUNTAIN

HUNT AREAS: 16 | PREPARED BY: WILL SCHULTZ

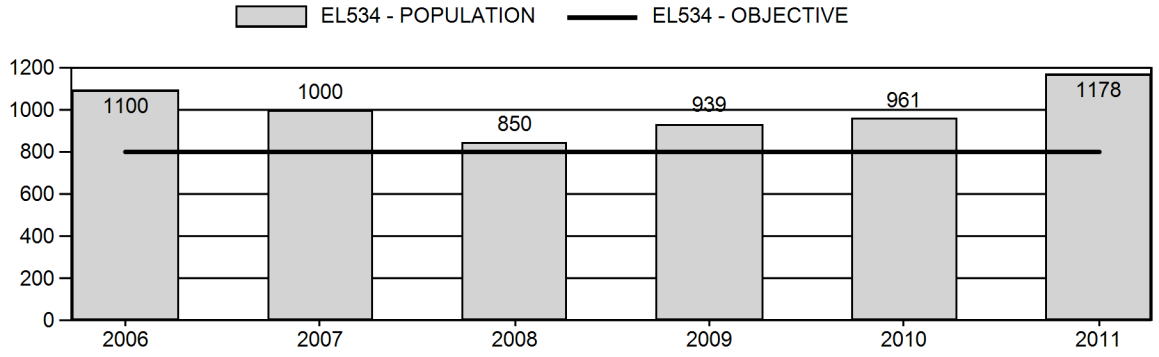
	2006 - 2010 Average	2011	2012 Proposed
Population:	970	1,178	1,034
Harvest:	270	364	308
Hunters:	543	576	600
Hunter Success:	50%	63%	51%
Active Licenses:	561	607	600
Active License Percent:	48%	60%	51%
Recreation Days:	3,572	4,670	4,600
Days Per Animal:	13.2	12.8	14.9
Males per 100 Females	33	0	
Juveniles per 100 Females	43	0	

Population Objective:	800
Management Strategy:	Recreational
Percent population is above (+) or below (-) objective:	47%
Number of years population has been + or - objective in recent trend:	10
Model Date:	03/02/2012

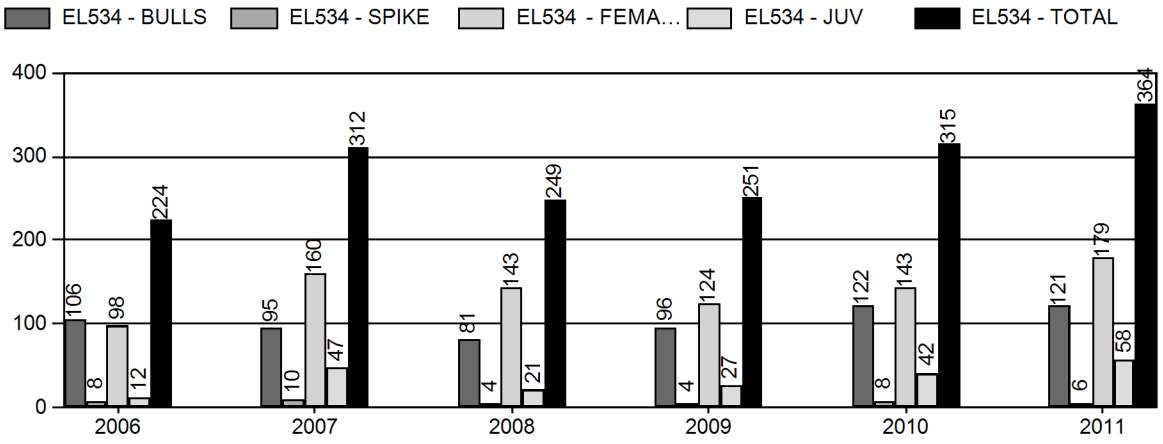
Proposed harvest rates (percent of pre-season estimate for each sex/age group):

	JCR Year	Proposed
Females ≥ 1 year old:	22.9%	21.4%
Males ≥ 1 year old:	30.9%	32.9%
Juveniles (< 1 year old):	16.3%	12.3%
Total:	23.4%	22.4%
Proposed change in post-season population:	-25.8%	-24.7%

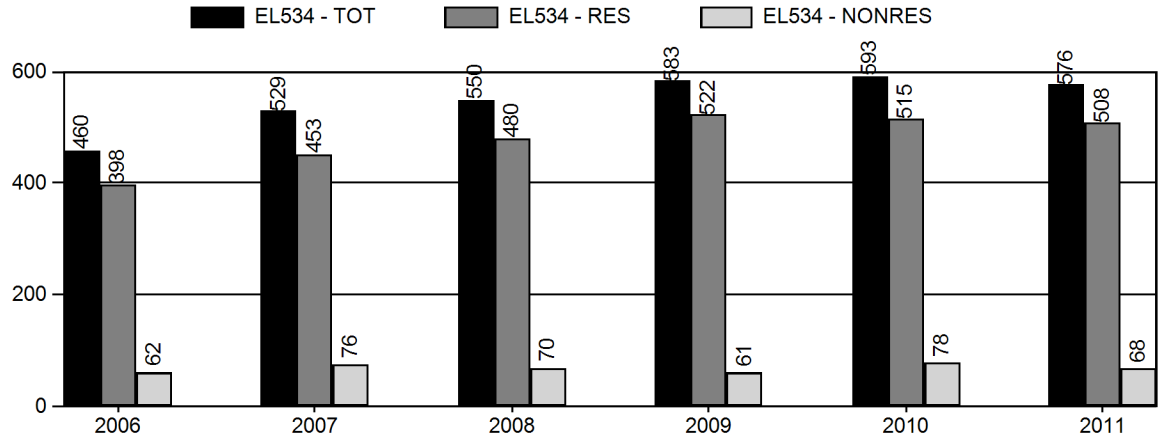
Population Size - Postseason



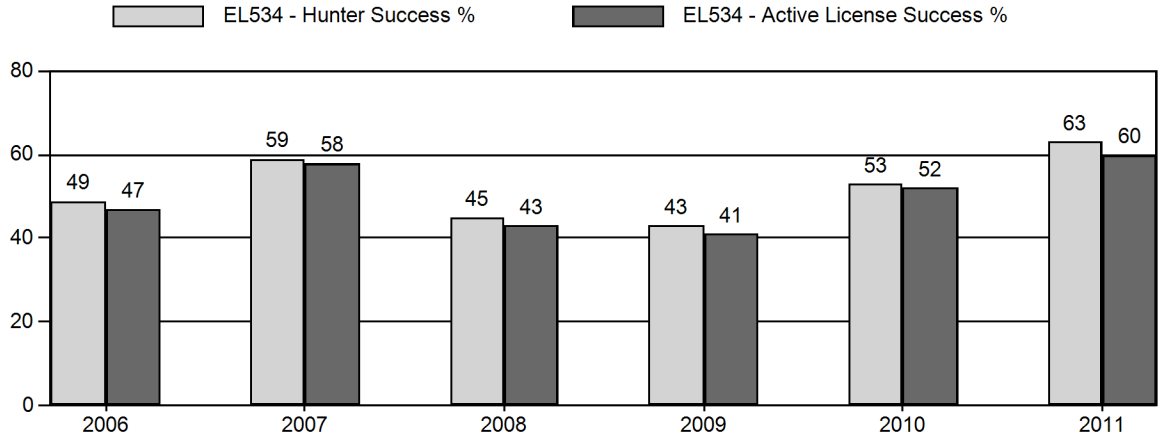
Harvest



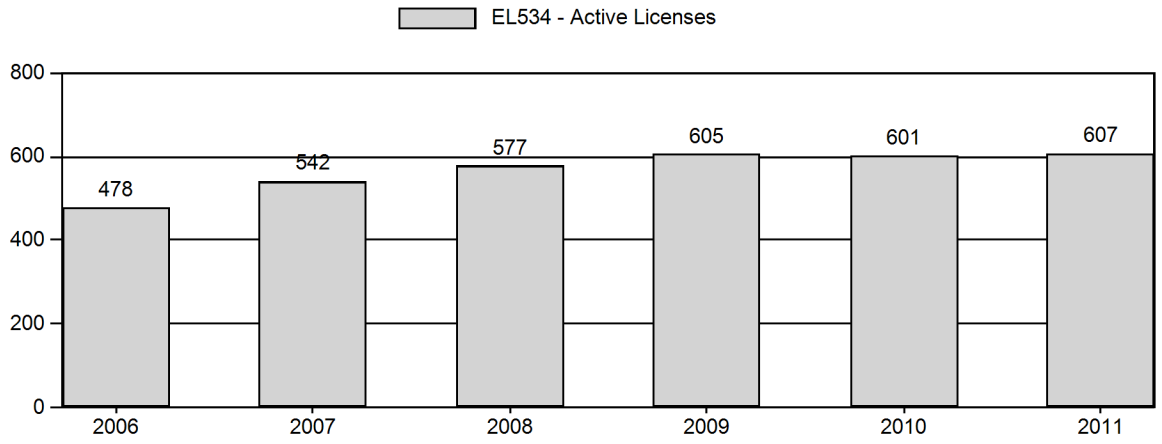
Number of Hunters



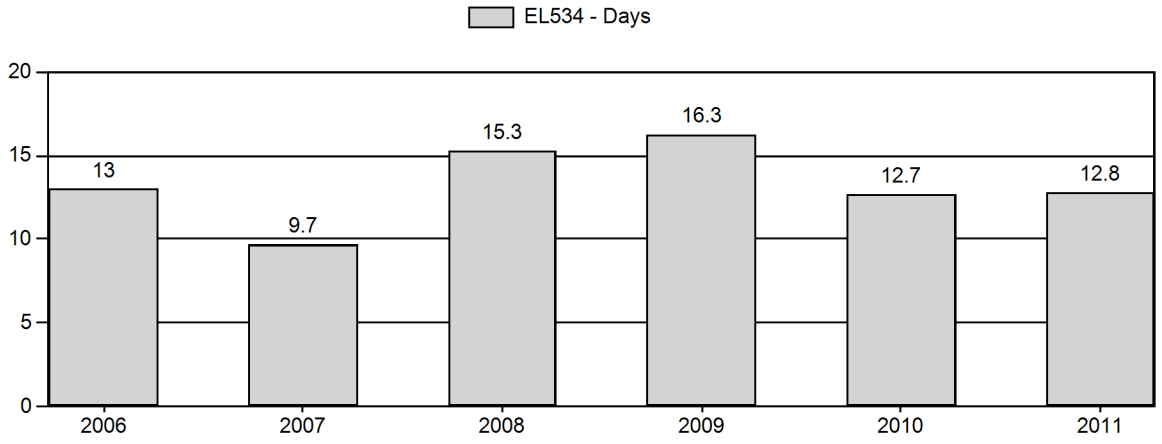
Harvest Success



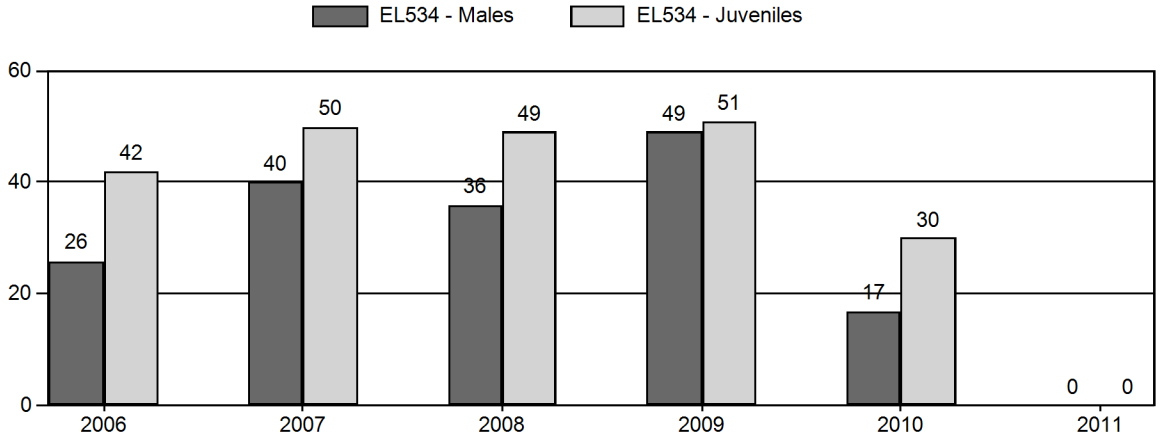
Active Licenses



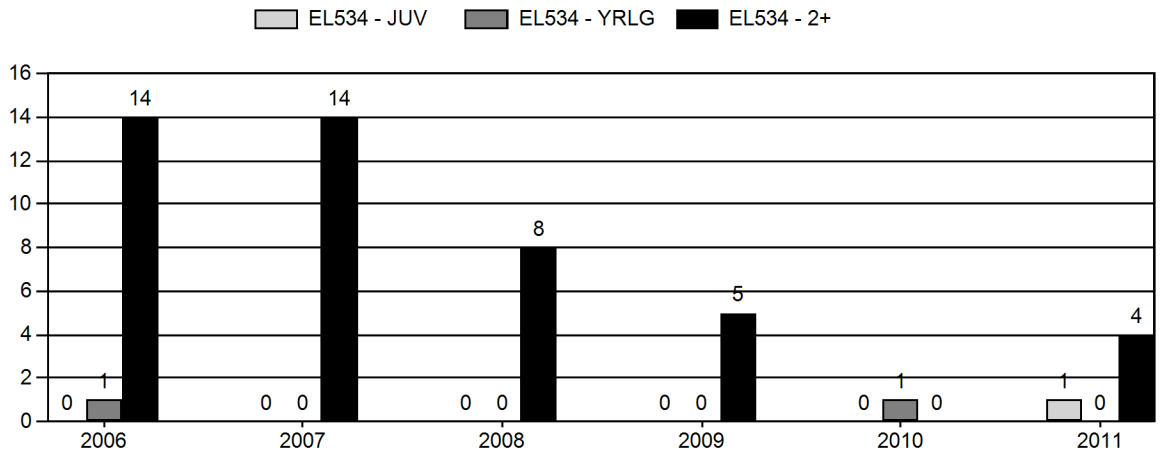
Days per Animal Harvested



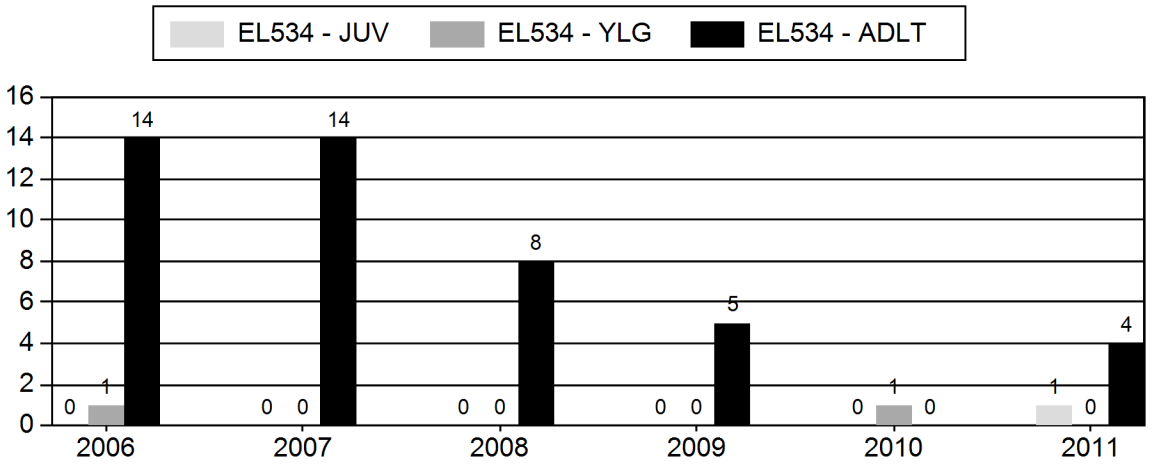
Postseason Animals per 100 Females



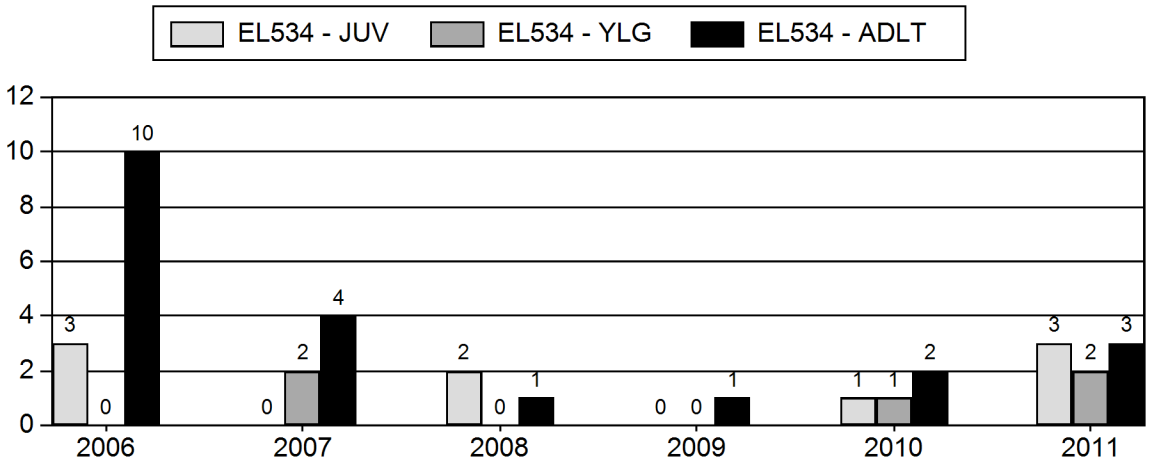
Age Structure of Field Checked Males



Age Structure Data (Field and Laboratory) - Male



Age Structure Data (Field and Laboratory) - Female



2006 - 2011 Postseason Classification Summary

for Elk Herd EL534 - SHIRLEY MOUNTAIN

		MALES				FEMALES		JUVENILES				Males to 100 Females				Young to		
Year	Post Pop	Ylg	Adult	Total	%	Total	%	Total	%	Tot Cls	Cls Obj	Ylng	Adult	Total	Conf Int	100 Fem	Conf Int	100 Adult
2006	1,100	40	28	68	16%	260	60%	108	25%	436	408	15	11	26	± 4	42	± 5	33
2007	1,000	30	42	72	21%	179	53%	89	26%	340	387	17	23	40	± 0	50	± 0	35
2008	850	71	91	162	20%	444	54%	216	26%	822	440	16	20	36	± 11	49	± 12	36
2009	939	37	108	145	25%	295	50%	151	26%	591	463	13	37	49	± 0	51	± 0	34
2010	961	39	27	66	11%	397	68%	121	21%	584	469	10	7	17	± 2	30	± 3	26
2011	1,178	0	0	0	0%	0	0%	0	0%	0	500	0	0	0	± 0	0	± 0	0

2011 HUNTING SEASONS

EL534 - SHIRLEY MOUNTAIN

Hunt Area	Add'l Hunt Areas	Type	Quota	Season Dates	Limitations
16		Type 1	200	10/01 - 10/31	Any
16		Type 1	25	11/01 - 11/15	Beer Mug HMA
16		Type 4	200	01/01 - 01/31	Full Priced Antlerless
16		Type 4	300	10/01 - 11/30	Full Priced Antlerless
16		Type 6	100	01/01 - 01/31	Reduced Price cow/calf
16		Type 6	100	10/01 - 11/30	Reduced Price cow/calf
16		Type 7	50	01/01 - 01/31	Reduced Price cow/calf
16		Type 7	50	08/15 - 09/30	Valid on private land
16		Type 7	50	10/01 - 11/30	Reduced Price cow/calf

Area	Type	Active Lic/Htrs	Bull	Cow	Calf	Total	Success	Days/Harvest	Days	Licenses Sol
2011										
16 SHIRLEY MOUNTAIN										
	Type 1	195	127	12	0	139	71.3%	9.6	1333	200
	Type 4	270	0	111	47	158	58.5%	14.2	2237	301
	Type 6	89	0	34	11	45	50.6%	16.7	752	100
	Type 7	53	0	22	0	22	41.5%	15.8	348	54
Pooled Total		572 (607)*	127	179	58	364	63.6% (60.0%)*	12.8	4670	
Pooled Resident		504	106	165	56	327	64.9%	12.7	4165	
Pooled Nonresident		68	21	14	2	37	54.4%	13.6	505	
2011 Hunt Area Tot		572 (607)*	127	179	58	364	63.6% (60.0%)*	12.8	4670	655
2011 Herd Total		576 (607)*	127	179	58	364	63.2% (60.0%)*	12.8	4670	655

*Active Licenses

2006 - 2011 Harvest Age Structure

for Elk Herd EL534 - SHIRLEY MOUNTAIN

	Males									Females									Herd
Year	**Juv**	**1**	**% ***	**2 ^**	**% ****	**Tot Aged ++**	**Not Aged +++**	**Unk**	**Tot Chkd**	**Juv**	**1**	**% ***	**2 ^**	**% ****	**Tot Aged ++**	**Not Aged +++**	**Unk**	**Tot Chkd**	**Tot**
2006	0	1	7%	14	93%	15	0	0	15	3	0	0%	10	100%	13	0	0	13	28
2007	0	0	0%	0	0%	0	14	0	14	0	2	33%	0	0%	2	4	0	6	20
2008	0	0	0%	7	100%	7	1	0	8	2	0	0%	1	100%	3	0	0	3	11
2009	0	0	0%	0	0%	0	5	0	5	0	0	0%	1	100%	1	0	0	1	6
2010	0	1	100%	0	0%	1	0	4	5	1	1	33%	2	67%	4	0	2	6	11
2011	1	0	0%	4	100%	5	0	6	11	3	2	40%	2	50%	7	1	1	9	20

*	Percent of aged animals (including unaged adults but excluding juveniles) 1 1/2 years old
^	Number of animals two years old and older. Animals aged older than two (excluding unaged adults) are lumped into this two plus category
**	Percent of aged animals (not including juveniles or unaged adults) two years old or older
++	includes juveniles
+++	Unaged adults - unaged animals older than yearlings

Shirley Mountain Elk (EL534)
Hunt Areas 16
2012 Season Recommendations

Hunt Area	Type	Dates of Seasons Opens	Closes	Limitations
*16	1	Oct. 1	Oct. 31	Limited quota; 200 licenses any elk
		~~Nov. 1~~	~~Nov. 15~~	~~Unused Area 16 Type 1 licenses valid on the Beer Mug Mountain Hunter Management Area (HMA permission slip required)~~
	2	Nov. 1	Nov. 30	Limited quota; 50 licenses any elk
		Dec. 1	Dec. 15	Unused Area 16 Type 1 and Type 2 licenses valid on the Beer Mug Hunter Management Area (HMA permission slip required)
		Jan. 1	Jan. ~~15~~ 31	Unused Area 16 Type 1 and Type 2 licenses valid on the Beer Mug Hunter Management Area (HMA permission slip required)
	4	Oct. 1	~~Nov. 30~~ Jan. 31	Limited quota; 300 licenses antlerless elk
	6	Aug. 15	Sep. 30	Limited quota; 150 licenses cow or calf valid on private land
		Oct. 1	~~Nov. 30~~ Jan. 31	Unused Area 16 Type 6 licenses cow or calf valid in the entire area
	~~7~~	~~Aug. 15~~	~~Sep. 30~~	~~Limited quota; 50 licenses cow or calf valid on private land~~
		~~Oct. 1~~	~~Nov. 30~~	~~Unused Area 16 Type 7 licenses cow or calf valid in the entire area~~
		~~Dec. 1~~	~~Dec. 15~~	~~Unused Area 16 Type 1, Type 4, and Type 6 and Type 7 licenses valid on the Beer Mug Hunter Management Area (HMA permission slip required)~~
		~~Jan. 1~~	~~Jan. 31~~	~~Unused Area 16 Type 4, Type 6 and Type 7 licenses valid for antlerless elk~~

Summary of Proposed Changes in License Numbers

Hunt Area	Type	Change From 2011
16	2	+50 (new)
16	6	+50
16	7	-50

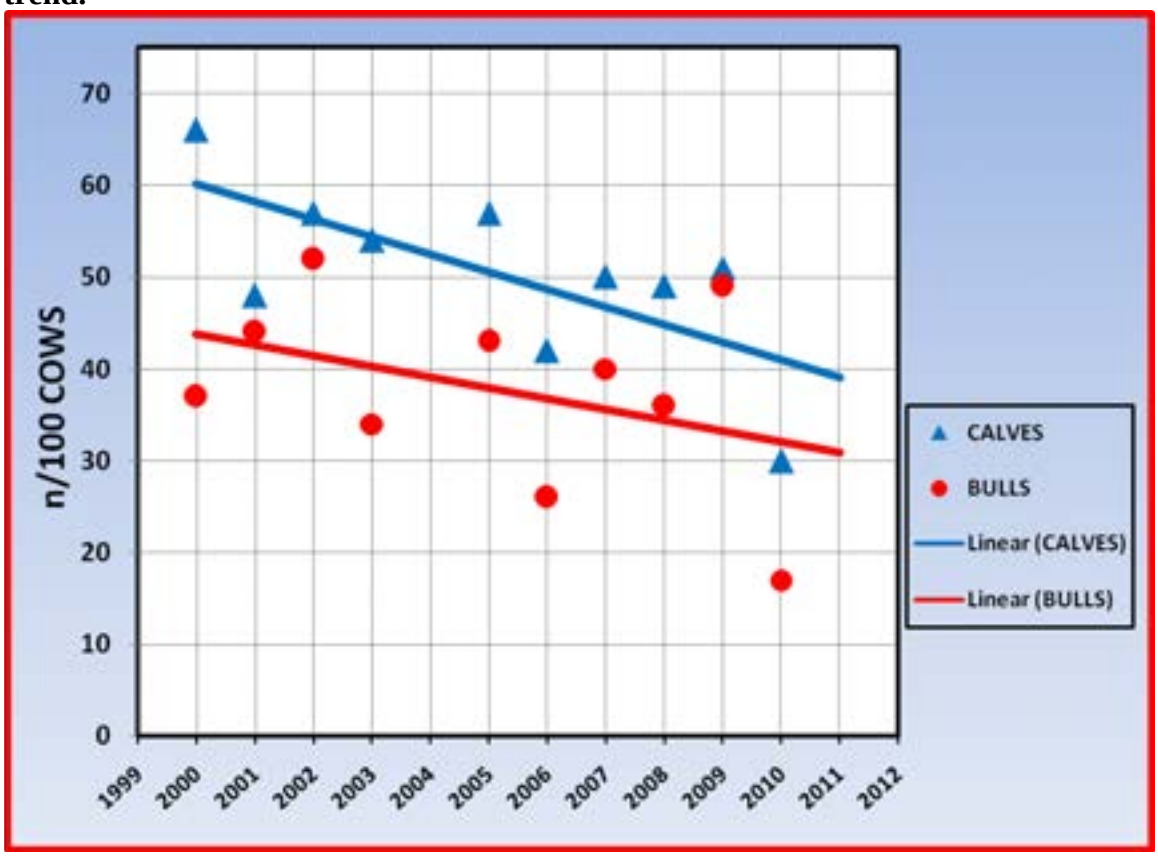
Management Evaluation

A 2011 postseason classification sample was not obtained for this herd unit. Trend from past classifications infer this herd unit was still above the recreational management strategy maximum for bull ratios (Figure 1). The 2010 ratios were well below the trend of ratios observed during the past 10 years, and likely contained observation and sampling bias. Habitat conditions continued to be good during 2011 with above normal

precipitation in the herd unit. Impacts to elk from the development of the Dunlap Wind Farm on the east side of this herd unit continued to be monitored through a University of Wyoming research.

The 2011 POP-II population model was revised for this herd unit to better align simulations with the observed values. This revision resulted in an increase in the 2011 postseason population estimate. The 2011 postseason population estimate was 1,178 elk. We consider the POP-II population model to be one of low quality. Classification data, a major variable in the model, has been inconsistent for this herd unit. The integrity of the herd unit boundaries for this herd unit, as well as for adjacent herd units, is suspect. However, the data collected from the Dunlap Wind Farm research may provide insight into the ranges of elk in this herd unit.

Figure 1. Wyoming 2000-2011 Shirley Mountain Elk Herd Unit bull and calf ratio trend.



Harvest

Preliminary harvest survey data indicated 605 active license hunters harvested 372 elk in 2011, with an overall success rate of 65%. The 2011 harvest increased 15% from the 2010 harvest. The 2011 bull harvest (n=127) was similar to the 2010 bull harvest. This continued rate of bull harvest success was attributed to the restored access to private

lands on the Beer Mug Mountain HMA. Antlerless harvest increased 22% in 2011, with no additional allocation of licenses but rather an increase in season lengths.

2012 Season Proposal

There are several changes proposed to the license quotas for the Shirley Mountain elk herd unit. A Type 2 license valid in November only is proposed, to increase hunting opportunity for any elk while not adding to hunter crowding in October. The Type 4 and 6 license season length has been increased. The Type 7 license had become redundant and was removed to simplify regulations. The continued operation of the Beer Mug Mountain Hunter Management Area should provide an additional opportunity for a limited number of elk hunters in this herd unit.

Data Set: EL534_2012_SEASON.GN1 03/02/2012 06:26 pm Page 1

EL534_2012_SEASON
Data from 2005 to 2013 Simulation from 2005 to 2013

Age Class	Init Pop. Male	Prop. Female	Presn Male	Mort% Female	Postsn Mort% Male	Mort% Female	Effort Set 1 Male	Effort Set 1 Female	Effort Set 2 Male	Effort Set 2 Female
0	40.0	40.0	40.0	40.0	20.0	10.0	1.00	1.00	1.00	1.00
1	14.3	20.2	1.0	1.0	10.0	5.0	0.98	1.00	0.60	1.00
2	10.3	16.2	1.0	1.0	10.0	5.0	1.00	1.00	1.00	1.00
3	7.4	12.9	1.0	1.0	10.0	5.0	1.00	1.00	1.00	1.00
4	5.3	10.4	1.0	1.0	10.0	5.0	1.00	1.00	1.00	1.00
5	3.8	8.3	1.0	1.0	10.0	5.0	1.00	1.00	1.00	1.00
6	2.8	6.6	1.0	1.0	10.0	5.0	1.00	1.00	1.00	1.00
7	2.0	5.3	1.0	1.0	25.0	10.0	1.00	1.00	1.00	1.00
8	1.4	4.2	1.0	1.0	50.0	10.0	1.00	1.00	1.00	1.00
9	1.0	3.4	1.0	1.0	75.0	10.0	1.00	1.00	1.00	1.00
10	0.7	2.7	1.0	1.0	80.0	10.0	1.00	1.00	1.00	1.00
11	0.5	2.2	1.0	1.0	100.0	10.0	1.00	1.00	1.00	1.00
12	0.4	1.7	1.0	1.0	100.0	20.0	1.00	1.00	1.00	1.00
13	0.3	1.4	1.0	1.0	100.0	30.0	1.00	1.00	1.00	1.00
14	0.2	1.1	1.0	1.0	100.0	40.0	1.00	1.00	1.00	1.00
15	0.1	0.9	1.0	1.0	100.0	50.0	1.00	1.00	1.00	1.00
16	0.1	0.7	1.0	1.0	100.0	60.0	1.00	1.00	1.00	1.00
17	0.1	0.6	1.0	1.0	100.0	70.0	1.00	1.00	1.00	1.00
18	0.1	0.5	1.0	1.0	100.0	80.0	1.00	1.00	1.00	1.00
19	0.0	0.4	1.0	1.0	100.0	90.0	1.00	1.00	1.00	1.00
20	0.0	0.3	1.0	1.0	100.0	100.0	1.00	1.00	1.00	1.00

Sum = 230.8 Estimated Sum = 2412.875 Subadults: Ages 0 to 0

Data Set: EL534_2012_SEASON.GN1 03/02/2012 06:26 pm Page 2

Bio-Year	Preseason MSI	MSI Function is Linear Harvest // Des. Pop Size in NA Subadults#	Males#	Females#	Postseason MSI	Effort & Wound Set Used
2005	0.88	19	126	113	1.36	1
2006	0.91	12	114	98	0.34	1
2007	0.68	47	105	163	1.36	1
2008	0.81	21	85	143	1.76	1
2009	0.67	27	100	124	0.96	1
2010	0.75	27	129	144	1.03	1
2011	0.70	60	127	185	0.89	1
2012	0.76	38	120	150	0.70	1
2013	0.78	38	120	150	0.70	1

Set 1	Wounding Loss	10.%	10.%	10.%	Yearling Male 10.%
Set 2	Wounding Loss	10.%	10.%	10.%	Yearling Male 10.%

Bio-Year	Young/100 Fems Age 1 - 1	Young/100 Fems Age 2 - 2	Young/100 Fems Age 3 - 20	Sex Ratio: 50 : 50
2006	0.0	30.0	90.0	
2007	0.0	30.0	90.0	
2008	0.0	30.0	90.0	
2009	0.0	30.0	90.0	
2010	0.0	30.0	90.0	
2011	0.0	30.0	90.0	
2012	0.0	30.0	90.0	
2013	0.0	30.0	90.0	
2014	0.0	30.0	90.0	

POP-II (V1.2.9) Simulation Output Tables for EL534_2012_SEASON.GN1, 03/02/2012 06:26 pm

Table 1. Population Size During Bio-Year for EL534_2012_SEASON.GN1 03/02/2012 06:26 pm

Bio-Year	Start	Pre-Season	Post Season	End	%Growth
2005	2413	2105	1821	1520	-11.4
2006	2138	1899	1653	1597	6.6
2007	2278	2082	1736	1487	-7.0
2008	2119	1902	1628	1340	-10.3
2009	1902	1742	1466	1326	-1.4
2010	1875	1700	1370	1228	-7.2
2011	**1739**	**1587**	**1178**	**1072**	**-12.8**
2012	1515	1373	1034	960	-10.5
2013	1357	1226	887	823	-14.1

Table 2. Preseason Natural Mortality for EL534_2012_SEASON.GN1 03/02/2012 06:26 pm

Bio-Year	Sub-Adults	Adult Males	Adult Females	Total	% of Pop
2005	294	5	9	308	12.8
2006	225	4	9	239	11.2
2007	185	4	7	196	8.6
2008	205	4	8	217	10.2
2009	151	3	6	160	8.4
2010	164	3	7	174	9.3
2011	143	3	6	152	8.7
2012	135	3	5	143	9.4
2013	124	3	5	131	9.7

Table 3. Harvest Mortality for EL534_2012_SEASON.GN1 03/02/2012 06:26 pm

Bio-Year	Sub-Adults	Adult Males	Adult Females	Total	% of Pop
2005	19	126	113	258	12.3
2006	12	114	98	224	11.8
2007	47	105	163	315	15.1
2008	21	85	143	249	13.1
2009	27	100	124	251	14.4
2010	27	129	144	300	17.6
2011	**60**	**127**	**185**	**372**	**23.4**
2012	38	120	150	308	22.4
2013	38	120	150	308	25.1

Table 4. Harvest Percentages for EL534_2012_SEASON.GN1 03/02/2012 06:26 pm

Bio-Year	Sub-Adults	Adult Males	Adult Females	Total	Yearling Males
2005	3.5	23.9	10.9	12.26	27.7
2006	3.1	23.3	9.6	11.79	38.0
2007	9.5	20.1	15.3	15.13	33.2
2008	4.9	17.2	14.6	13.09	31.9
2009	6.6	22.3	14.1	14.41	28.5
2010	7.0	28.5	16.7	17.65	33.3
2011	16.3	30.9	22.9	23.44	33.5
2012	12.3	32.9	21.4	22.44	33.3
2013	13.9	36.9	23.9	25.13	34.5

Table 5. Postseason Natural Mortality for EL534_2012_SEASON.GN1 03/02/2012 06:26 pm

Bio-Year	Sub-Adults	Adult Males	Adult Females	Total	% of Pop
2005	106	85	110	301	16.5
2006	19	15	22	56	3.4
2007	91	69	89	248	14.3
2008	107	81	101	289	17.7
2009	55	37	48	140	9.5
2010	55	37	50	142	10.4
2011	40	28	37	106	9.0
2012	28	19	27	74	7.1
2013	24	16	23	64	7.2

Table 6. Preseason Ratios for EL534_2012_SEASON.GN1 03/02/2012 06:26 pm

Bio-Year	Subadults /100 1+F	2+ Males /100 1+F	Yr. Males /100 1+F	Ad Males /100 1+F
2005	52.3	36.5	14.3	50.8
2006	38.7	29.5	18.5	48.0
2007	46.6	32.5	16.5	49.0
2008	43.6	34.2	16.4	50.6
2009	46.6	36.1	14.7	50.8
2010	44.4	34.7	17.7	52.4
2011	45.4	33.6	17.3	50.8
2012	44.1	34.5	17.6	52.1
2013	43.5	33.7	18.1	51.8

Table 7. Postseason Ratios for EL534_2012_SEASON.GN1 03/02/2012 06:26 pm

Bio-Year	Subadults /100 1+F	2+ Males /100 1+F	Yr. Males /100 1+F	Ad Males /100 1+F
2005	57.1	30.5	12.0	42.5
2006	41.8	24.5	15.4	39.9
2007	50.2	30.4	15.5	45.9
2008	49.1	33.0	15.9	48.9
2009	51.2	32.2	13.2	45.4
2010	50.2	29.0	15.0	44.0
2011	49.8	29.5	15.3	44.8
2012	49.9	28.7	14.8	43.4
2013	50.0	27.0	14.8	41.8

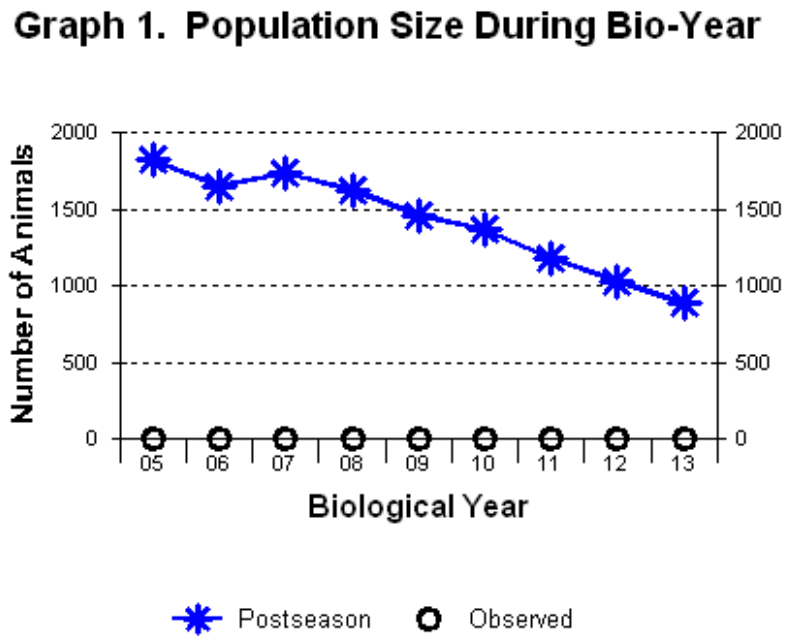
Table 8. End of Year Ratios for EL534_2012_SEASON.GN1 03/02/2012 06:26 pm

Bio-Year	Subadults /100 Adlts	Subadults /100 1+F	Yr. Males /100 1+F	Ad Males /100 1+F
2005	37.5	51.7	11.8	37.8
2006	29.2	40.6	15.3	39.2
2007	31.2	44.4	14.9	42.4
2008	28.5	41.2	14.9	44.4
2009	32.7	46.8	12.8	43.2
2010	32.2	45.7	14.5	41.7
2011	32.2	46.0	14.9	42.8
2012	33.1	47.0	14.5	41.9
2013	33.6	47.2	14.5	40.2

Table 9. Reproduction at Start of Bio-Year for EL534_2012_SEASON.GN1 03/02/2012 06:26 pm

Bio-Year	Young / 100 AF 1 +	Sub-Ad. / 100 AF 1 +	Total Young	Total Sub-Adult	Total Females 1 +
2005	80	80	836	836	1045
2006	60	60	619	619	1027
2007	64	64	681	681	1071
2008	64	64	632	632	988
2009	63	63	562	562	888
2010	63	63	548	548	870
2011	63	63	510	510	814
2012	63	63	443	443	705
2013	63	63	397	397	632

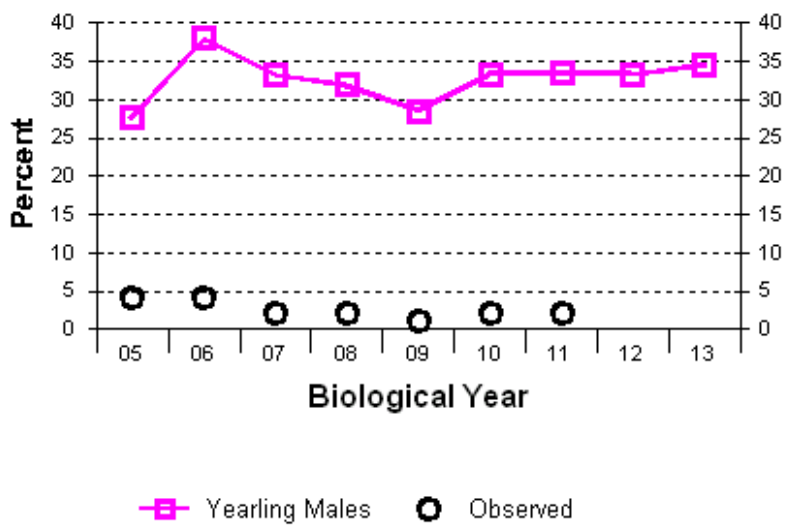
POP-II (V1.2.9) Graph 1. Population Size During Bio-Year



EL534_2012_SEASON.GN1, 03/02/2012 06:26 pm

YR	SIM	OBS
05	1821	0
06	1653	0
07	1736	0
08	1628	0
09	1466	0
10	1370	0
11	1178	0
12	1034	0
13	887	0
	AVERAGES	
of Col.	1419	
of Pair	1419	0

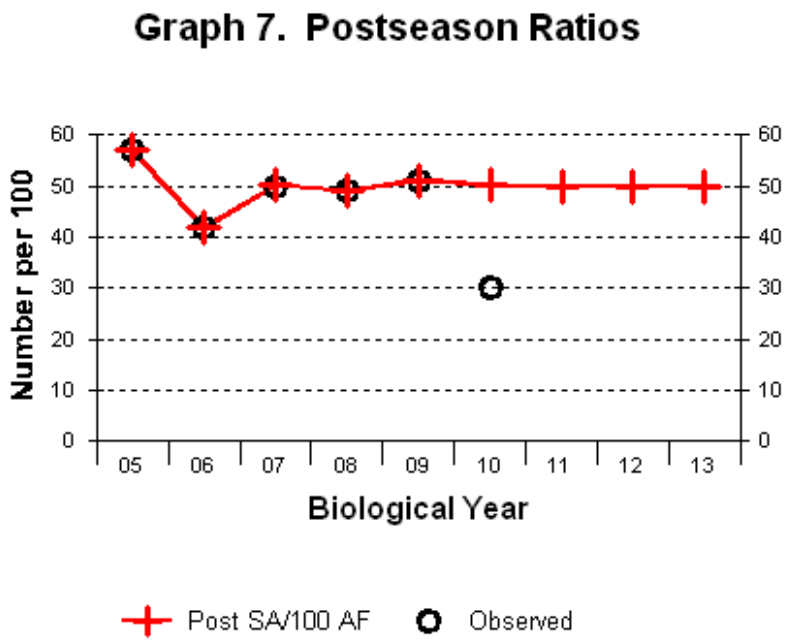
POP-II (V1.2.9) Graph 4. Harvest Percentages



I2_SEASON.GN1, 03/02/2012 06:26 pm, Correlation (R) = 0.253, GOF = -11.373

YR	SIM	OBS
05	28	4
06	38	4
07	33	2
08	32	2
09	29	1
10	33	2
11	33	2
12	33	-----
13	35	-----
	AVERAGES	
of Col.	33	
of Pair	32	2

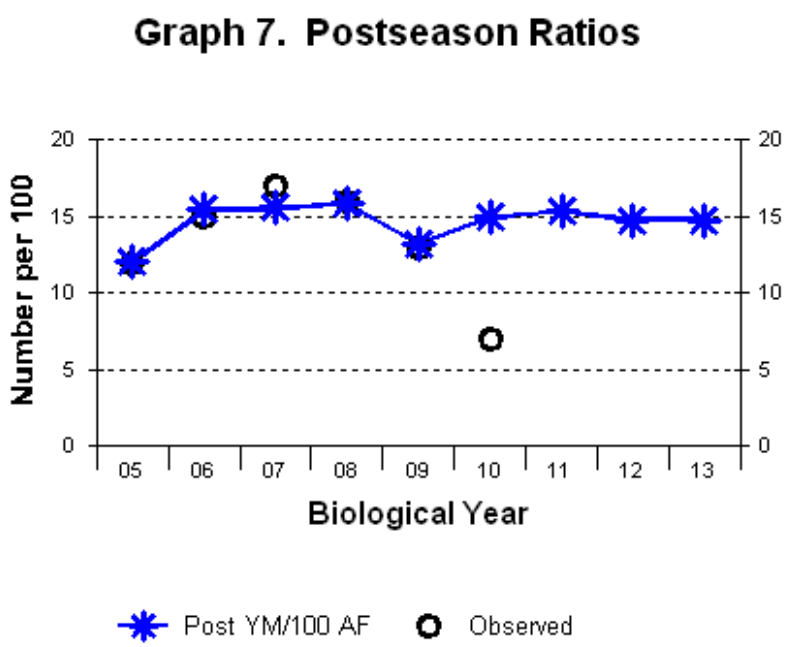
POP-II (V1.2.9) Graph 7. Postseason Ratios



012_SEASON.GN1, 03/02/2012 06:26 pm, Correlation (R) = 0.488, GOF = 0.823

YR	SIM	OBS
05	57	57
06	42	42
07	50	50
08	49	49
09	51	51
10	50	30
11	50	-----
12	50	-----
13	50	-----
	AVERAGES	
of Col.	50	
of Pair	50	47

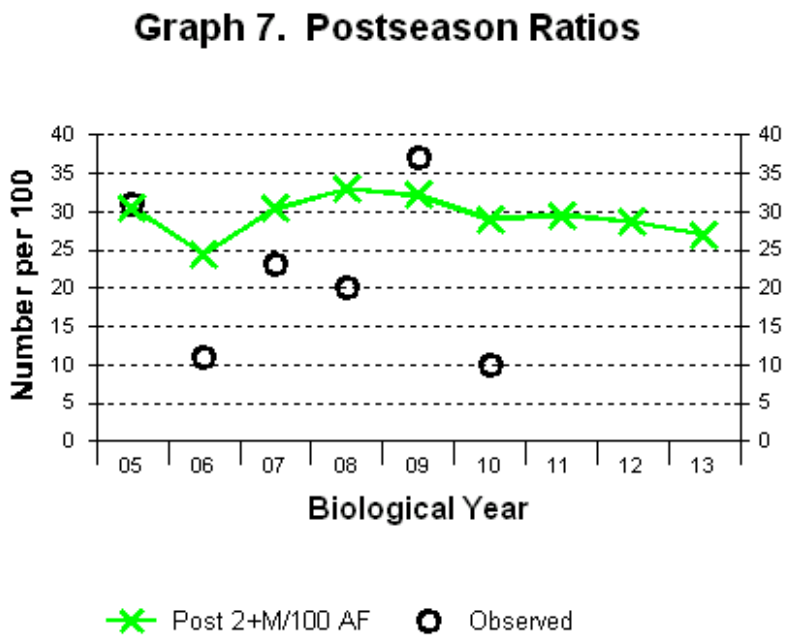
POP-II (V1.2.9) Graph 7. Postseason Ratios



012_SEASON.GN1, 03/02/2012 06:26 pm, Correlation (R) = 0.347, GOF = 0.751

YR	SIM	OBS
05	12	12
06	15	15
07	16	17
08	16	16
09	13	13
10	15	7
11	15	-----
12	15	-----
13	15	-----
	AVERAGES	
of Col.	15	
of Pair	15	13

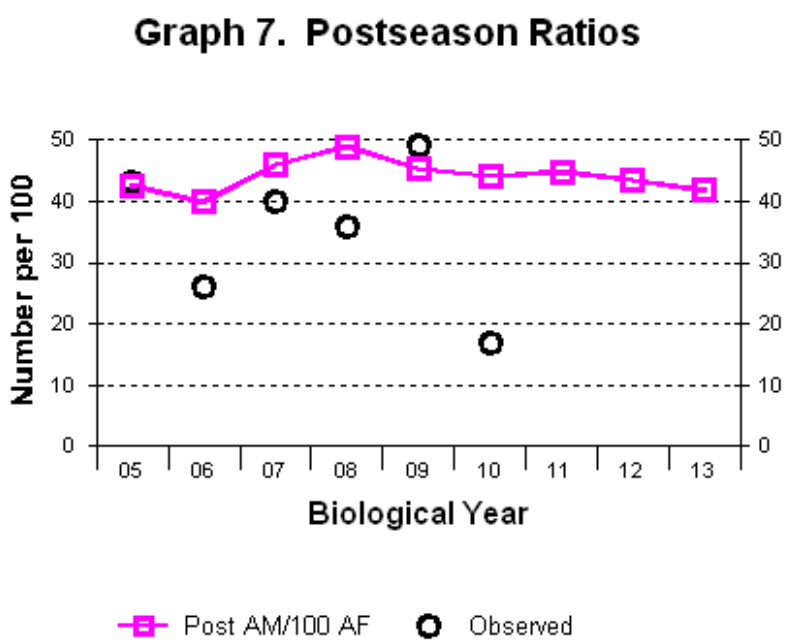
POP-II (V1.2.9) Graph 7. Postseason Ratios



012_SEASON.GN1, 03/02/2012 06:26 pm, Correlation (R) = 0.639, GOF = 0.478

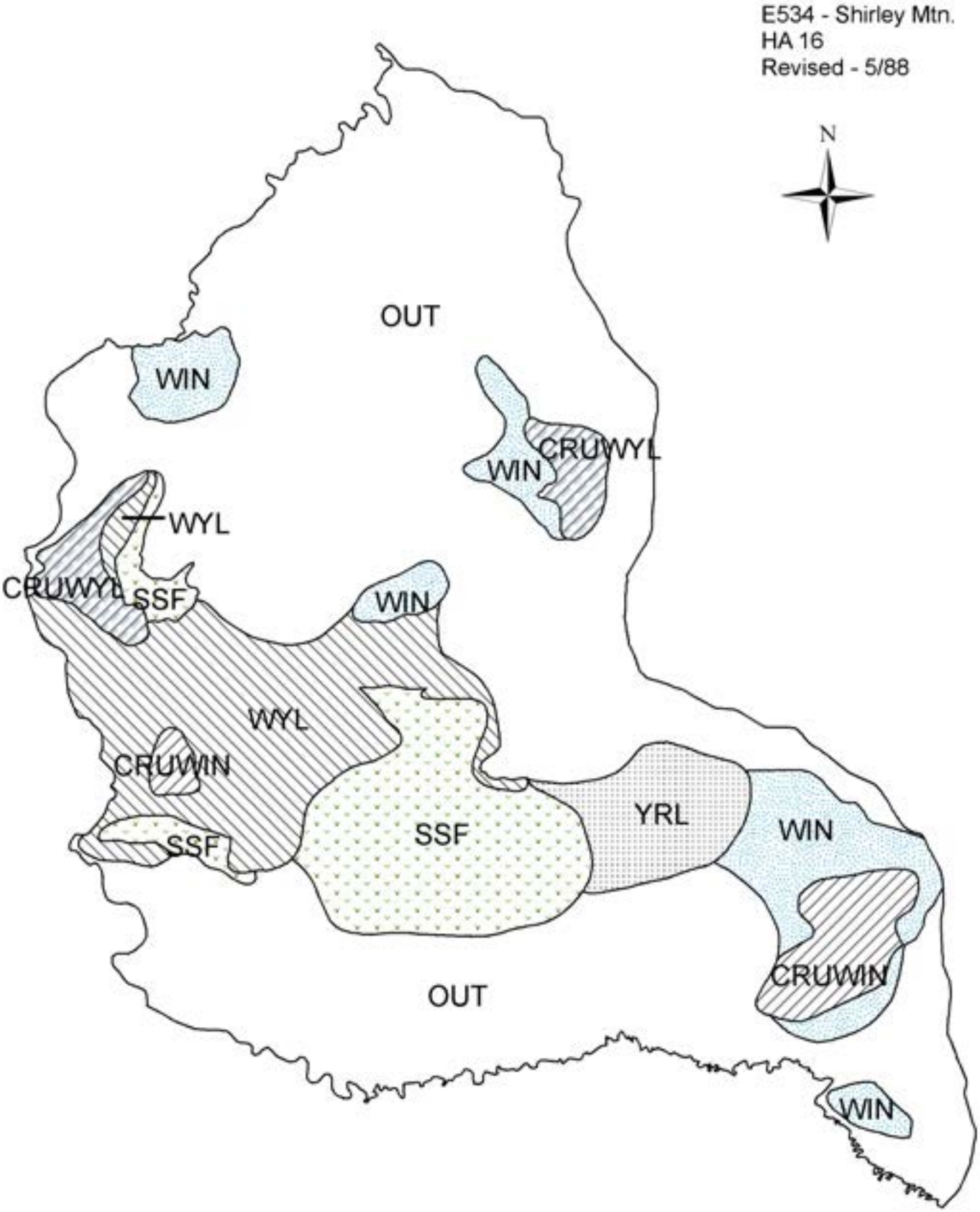
YR	SIM	OBS
05	30	31
06	24	11
07	30	23
08	33	20
09	32	37
10	29	10
11	29	-----
12	29	-----
13	27	-----
	AVERAGES	
of Col.	29	
of Pair	30	22

POP-II (V1.2.9) Graph 7. Postseason Ratios



2012_SEASON.GN1, 03/02/2012 06:26 pm, Correlation (R) = 0.32, GOF = 0.608

YR	SIM	OBS
05	43	43
06	40	26
07	46	40
08	49	36
09	45	49
10	44	17
11	45	-----
12	43	-----
13	42	-----
	AVERAGES	
of Col.	44	
of Pair	44	35


E534 - Shirley Mtn.
HA 16
Revised - 5/88
N
OUT
WIN
WIN
CRUWYL
WYL
CRUWYL
SSF
WIN
WYL
CRUWIN
SSF
SSF
YRL
WIN
CRUWIN
OUT
WIN

2011 - JCR Evaluation Form

SPECIES: Elk | PERIOD: 6/1/2011 - 5/31/2012

HERD: EL730 - RAWHIDE

HUNT AREAS: 3 | PREPARED BY: MARTIN HICKS

	2006 - 2010 Average	2011	2012 Proposed
Population:	0	N/A	N/A
Harvest:	62	103	105
Hunters:	124	296	300
Hunter Success:	50%	35%	35 %
Active Licenses:	133	318	325
Active License Percent:	47%	32%	32 %
Recreation Days:	1,252	2,487	2,500
Days Per Animal:	20.2	24.1	23.8
Males per 100 Females	30	52	
Juveniles per 100 Females	46	61	

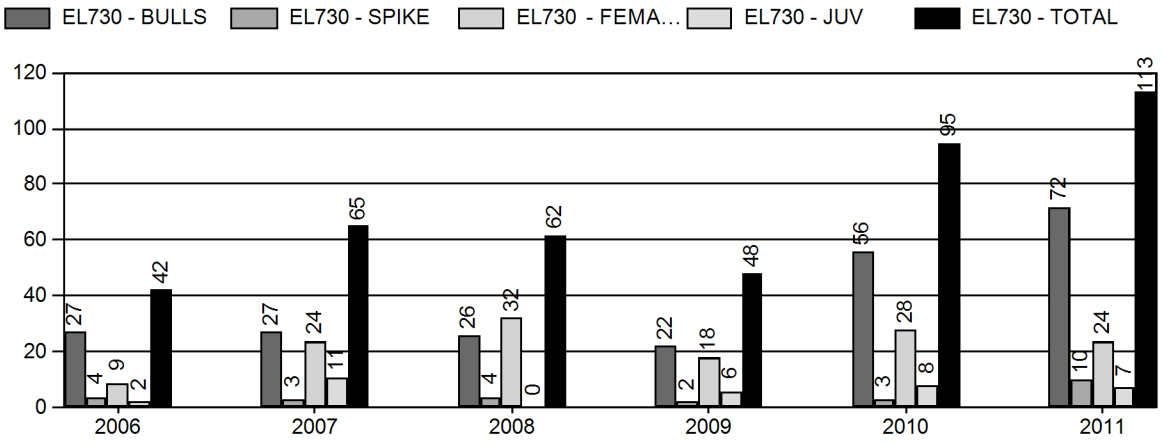
Population Objective:	40
Management Strategy:	Recreational
Percent population is above (+) or below (-) objective:	N/A%
Number of years population has been + or - objective in recent trend:	0
Model Date:	None

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

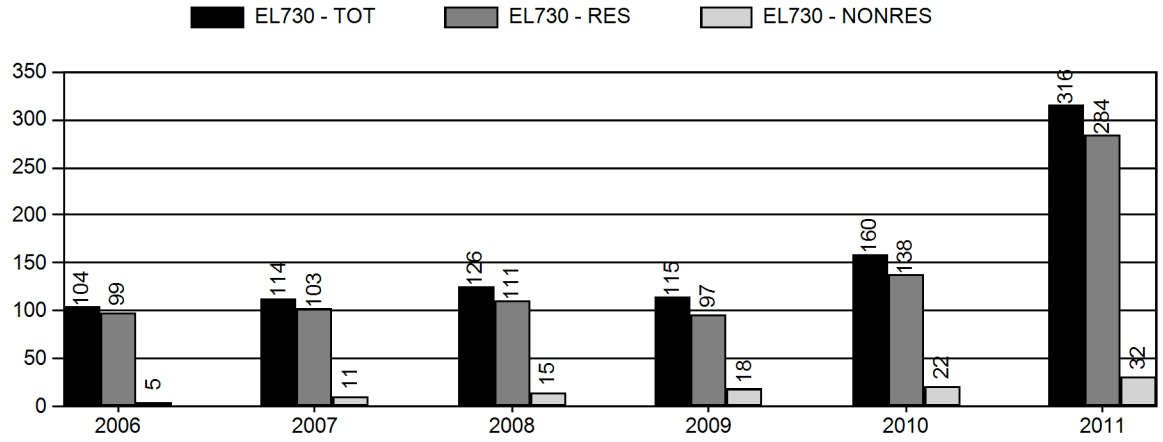
	JCR Year	Proposed
Females ≥ 1 year old:	NA%	NA%
Males ≥ 1 year old:	NA%	NA%
Juveniles (< 1 year old):	NA%	NA%
Total:	NA%	NA%
Proposed change in post-season population:	NA%	NA%

Population Size - Postseason

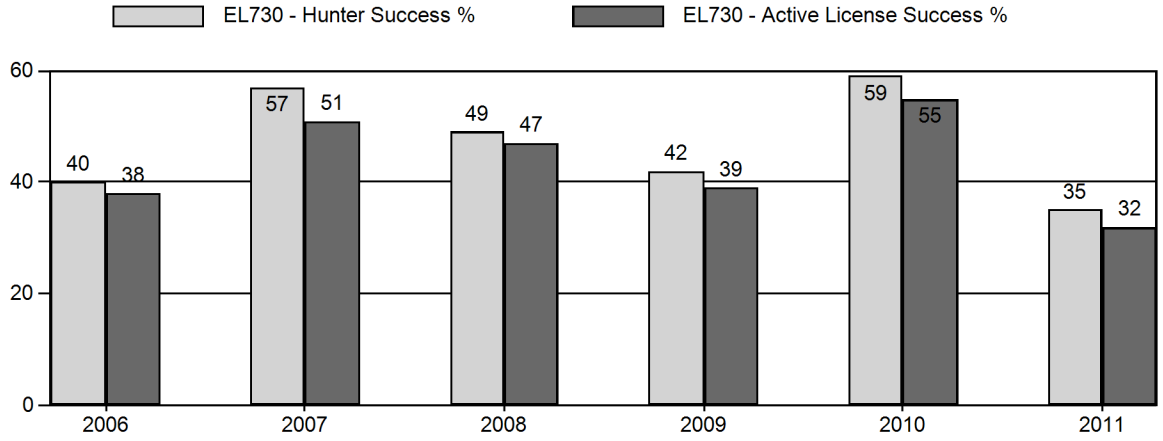
Harvest



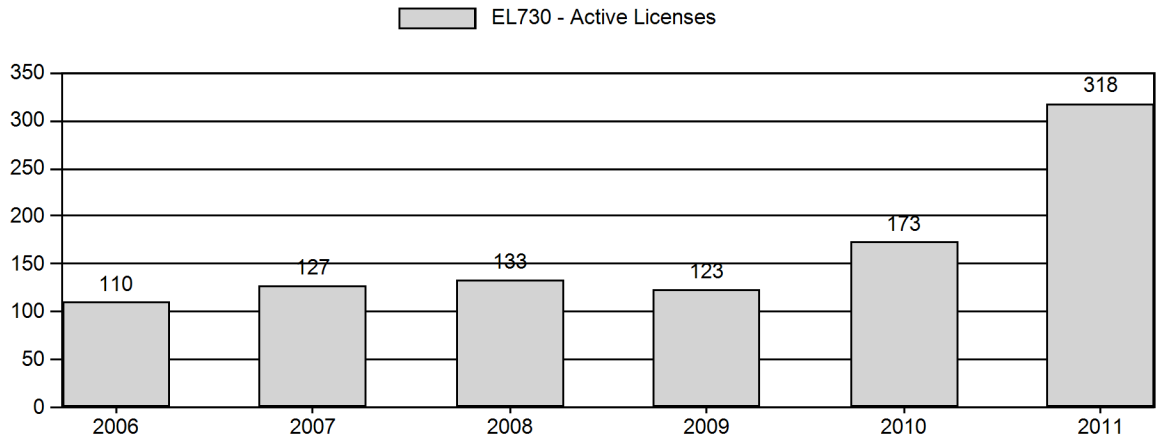
Number of Hunters



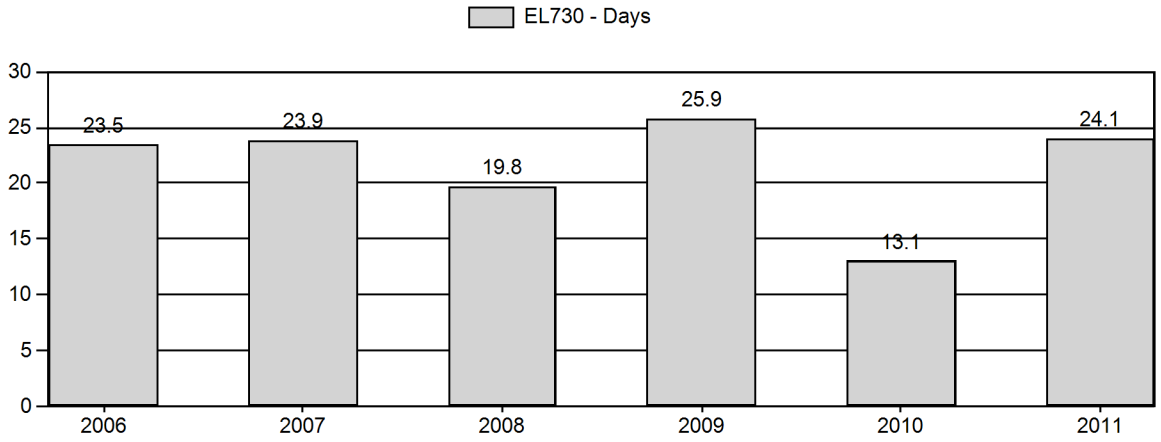
Harvest Success



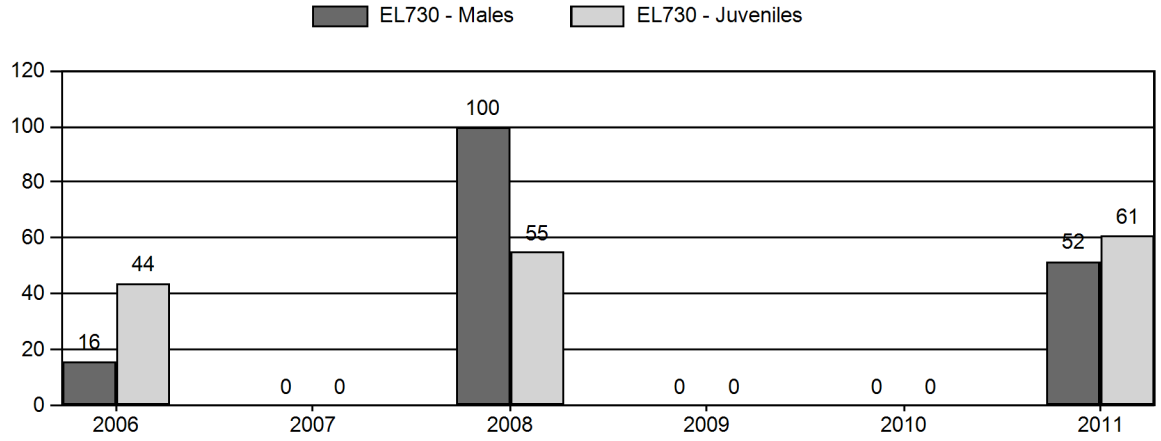
Active Licenses



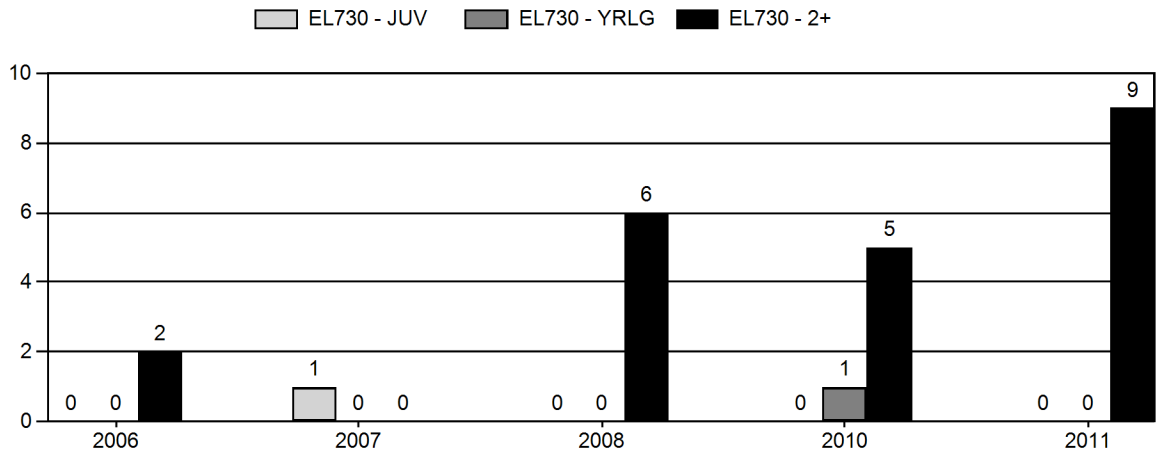
Days per Animal Harvested



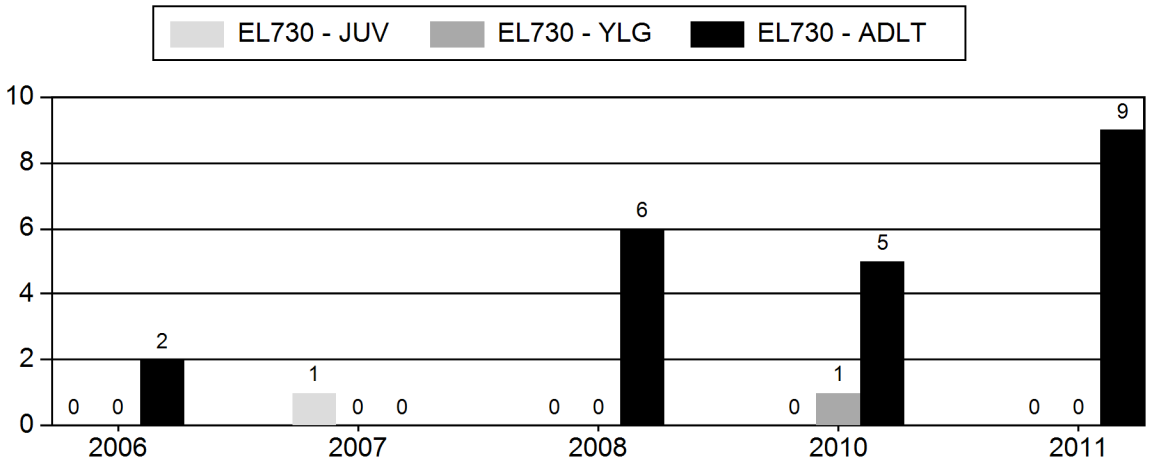
Postseason Animals per 100 Females



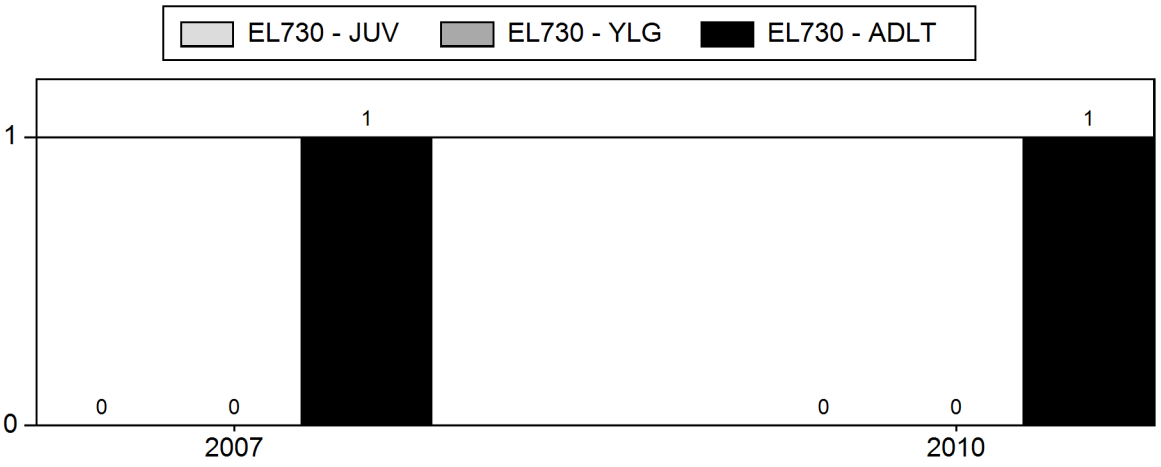
Age Structure of Field Checked Males



Age Structure Data (Field and Laboratory) - Male



Age Structure Data (Field and Laboratory) - Female



2006 - 2011 Postseason Classification Summary

for Elk Herd EL730 - RAWHIDE

		MALES				FEMALES		JUVENILES				Males to 100 Females				Young to		
Year	Post Pop	Ylg	Adult	Total	%	Total	%	Total	%	Tot Cls	Cls Obj	Ylng	Adult	Total	Conf Int	100 Fem	Conf Int	100 Adult
2006	0	11	6	17	10%	105	62%	46	27%	168	0	10	6	16	± 0	44	± 0	38
2007	0	0	0	0	0%	0	0%	0	0%	0	0	0	0	0	± 0	0	± 0	0
2008	0	5	15	20	39%	20	39%	11	22%	51	0	25	75	100	± 0	55	± 0	28
2009	0	0	0	0	0%	0	0%	0	0%	0	0	0	0	0	± 0	0	± 0	0
2010	0	0	0	0	0%	0	0%	0	0%	0	0	0	0	0	± 0	0	± 0	0
2011	0	3	14	17	24%	33	47%	20	29%	70	0	9	42	52	± 0	61	± 0	40

2011 HUNTING SEASONS

EL730 - RAWHIDE

Hunt Area	Add'l Hunt Areas	Type	Quota	Season Dates	Limitations
3		ARCH		09/01 - 09/14	Refer to Section 3 of this Chapter
3		GEN		09/15 - 01/31	any elk valid in that portion of Area 3 south of U.S. Highway 26.
3		Type 1	75	09/15 - 10/14	Any
3		Type 4	50	09/15 - 10/14	Full Priced Antlerless
3		Type 6	75	09/15 - 10/14	Reduced Price cow/calf
3		Type 6	200	11/01 - 12/31	Unused Area 3 Type 1, Type 4, Type 6 licenses valid for antlerless elk

Table 1. E730 Harvest Data, 2011.

Area	Type	Active Lic/H	Bull	Spike	Cow	Calf	Total	Success	Days/Harve	Licenses Sold
2011										
3 RAWHIDE										
	General	153	37	8	12	0	57	37.30%	15.6	
	Type 1	71	35	2	2	0	39	54.90%	13.8	77
	Type 4	50	0	0	7	4	11	22%	40.7	50
	Type 6	63	0	0	3	3	6	9.50%	134	75
Pooled Total		315	72	10	24	7	113	35.90%	23.7	
Pooled Resident		283	62	10	24	7	103	36.40%	24.4	
Pooled Nonresident		32	10	0	0	0	10	31.20%	16.5	
2011 Hunt Area Total		315	72	10	24	7	113	35.90%	23.7	202
2011 Herd Total		316	72	10	24	7	113	35.80%	23.7	202

*Active Licenses

2006 - 2011 Harvest Age Structure

for Elk Herd EL730 - RAWHIDE

	Males									Females									Herd
Year	Juv	1	% *	2 ^	% **	Tot Aged ++	Not Aged +++	Unk	Tot Chkd	Juv	1	% *	2 ^	% **	Tot Aged ++	Not Aged +++	Unk	Tot Chkd	Tot
2006	0	0	0%	2	100%	2	0	0	2	0	0	0%	0	0%	0	0	0	0	2
2007	1	0	0%	0	0%	1	0	0	1	0	0	0%	1	100%	1	0	0	1	2
2008	0	0	0%	6	100%	6	0	0	6	0	0	0%	0	0%	0	0	0	0	6
2010	0	1	17%	5	83%	6	0	0	6	0	0	0%	1	100%	1	0	0	1	7
2011	0	0	0%	9	100%	9	0	0	9	0	0	0%	0	0%	0	0	0	0	9

* Percent of aged animals (including unaged adults but excluding juveniles) 1 1/2 years old

^ Number of animals two years old and older. Animals aged older than two (excluding unaged adults) are lumped into this two plus category

** Percent of aged animals (not including juveniles or unaged adults) two years old or older

++ includes juveniles

+++ Unaged adults - unaged animals older than yearlings

RAWHIDE ELK(E730)
Hunt Area 3
2012 PROPOSED HUNTING SEASONS

HUNT AREA	TYPE	OPENS	CLOSES	LIMITATIONS
3	GEN	SEPT. 15	JAN. 31	Any elk valid in that portion of Area 3 south of U.S. Highway 26.
	1	SEPT. 15	OCT. 14	L.Q.; 75 licenses any elk
	4	SEPT. 15	OCT. 14	L.Q.; 50 licenses antlerless elk
	6	SEPT. 15	OCT. 14	L.Q. 75 licenses cow or calf
		NOV. 1	DEC. 31	Unused Area 3 Type 1, Type 4, and Type 6 licenses valid for antlerless elk
ARCHERY				
3		SEPT. 1	SEPT. 14	Refer to Section 3 of this Chapter

2012 PROPOSED CHANGES

Change the Hunt Area Boundary- see Attachment A

Management Evaluation

Population: There was an objective review for the 2011 biological year. Currently the objective is 40 elk. The high percentage of private land, rolling topography, extensive tree cover and the fact that there is no money to fly this herd make it difficult to collect population data in this DAU. Consequently there is no reliable estimate of population size. Classifications data from previous years with adequate samples sizes (2004, 2006 and 2008) indicate that the population continues to grow with average to above average calf ratios (2004- 83Juv:100 Cows, 2006- 43 Juv:100 Cows, 2008- 55Juv:100Cows).

The results of the objective review can be found in Attachment B. Basically this herd will no longer be managed on a numeric basis. Instead it will be managed based on a hunter/landowner satisfaction survey as the primary objective with bull harvest statistics as the secondary objective.

2011 Season: The 2011 season was designed to reduce elk numbers south of U.S. Highway 26 with a general license any elk season running from September 15-January 31. There were 46 elk harvested on that license type, 28 more than the Type 4 and Type 6 licenses combined. This season appeared to be well received by the public and landowners.

2012 Season: The 2012 season is designed to reduce elk numbers south of U.S. Highway 26 with a general any elk licenses from September 15 to January 31. Elk continue to move south of U.S. Highway 26 so all lands east of Interstate 25 to the Wyoming/Nebraska border and north of the Wyoming/Colorado boarder to

U.S. Highway 26 and follow the North Platte River up to U.S. Highway 18/20 will be the new hunt area (Attachment A).

For the 2013 season a proposal was brought forward to incorporate that portion of Area 3 north of U.S. Highway 26 and that portion of Elk Hunt Area 7 east of Interstate Highway 25 into the general license framework and converted to Hunt Area 3. Forty mailings with an attached survey were mailed out to landowners in Hunt Area 3 that own land north of Highway 26. Landowners that own land in Hunt Area 7 east of Interstate 25 were contacted in person to gather input on including that portion into Area 3 and making it a general license season. A public meeting was then held in Lusk, WY where comments were taken and additional surveys were handed out. There were 24 surveys returned (Attachment C) with thirteen against the general season and eleven for it. As a result of the returned surveys along with public comments, it was decided not to propose a general season structure for that portion of Elk Hunt Area 3 north of U.S. Highway 26 in 2013. This is the second time this proposal was considered in the last two years, with the majority opposed to it. Unless there is compelling evidence to propose this type of season structure again it will most likely remain a limited quota season. Also, the majority of landowners that own land in Hunt Area 7 east of Interstate 25 did not support converting that portion of Hunt Area 7 into Hunt Area 3.

Elk need to be reduced in this herd unit. However, until there is more cooperation from landowners north of U.S. Highway 26 to allow access, increasing Type 1, Type 4 and Type 6 licenses is not warranted.

Attachment A
Rawhide Herd Unit Map Boundary Change
Elk Hunt Area 3

Area 3. Rawhide. Beginning at the Intersection of U.S. Highway 20 and U.S. Highway 85 in the town of Lusk; easterly along U.S. Highway 20 to the Wyoming – Nebraska state line; southerly along said state line to the Wyoming – Colorado State line; westerly along said state line to U.S. Interstate 25; ~~Wyoming State Highway 151; westerly along said highway to U.S. Highway 85; northerly along said highway to Wyoming State Highway 313; westerly along said highway to the town of Chugwater and Interstate Highway 25~~; northerly along said Interstate to U.S. Highway 26; easterly along said highway to the North Platte River; northerly and westerly up said river to Interstate Highway 25; northerly along said Interstate to U.S. Highway 20; easterly along said highway to the intersection of U.S. Highway 20 and U.S. Highway 85 in the town of Lusk.

June 19, 2012 ATTACHMENT B

MEMORANDUM

TO: Tom Ryder, Assistant Chief Wildlife Division

FROM: Terry Creekmore, Laramie Regional Wildlife Coordinator

COPY TO: B. Nesvik, S. Edberg, B. Lanka,R. King, M. Hicks, B. Vandeberg, C. Smith, J. Stephens, J. Sandrini, J. Binfet

SUBJECT: Rawhide Herd Unit (E730) Elk Population Objective Review Recommendation

On February 17, 2012 Laramie Regional personnel received a memo from Tom Ryder, Wildlife Division Assistant Chief, regarding alternative objectives for big game management. We were charged with the task of taking two elk herds to the public for review. The Laramie Region personnel selected the Iron Mountain Elk Herd Unit and the Rawhide Elk Herd Unit.

Personnel responsible for the management of the Rawhide Herd Unit met internally and discussed the alternatives provided to us by Wildlife Division. We felt Alternative 3: Sportsmen and Landowner Satisfaction Surveys, in conjunction with harvest statistics was the best way to manage this herd in the future.

The Rawhide Elk Herd Unit was started in 1967 when 96 elk were released in the Rawhide Butte area. The objective of 40 was set at that time, and has not changed since. Based on recent years with adequate sample sizes for post-season classifications along with WGFD personnel, landowners and sportsmen observations there are at least 400 elk in the herd unit. Elk are also moving south of the North Platte River. As a result of this movement a more liberal season was set in 2011. In 2011, that portion of Elk Hunt Area 3 South of U.S. Highway 26 was a general any elk season from September 15 through January 31, and 44% of the total harvest came from that area. We proposed to maintain this season structure for 2012 and also expand the hunt area boundary south to the Wyoming/Colorado State Line and west to Interstate Highway 25.

Realizing there are more than 40 elk in the herd unit we still do not collect reliable data to derive a post-season population estimate. In the last ten years we have only met our post-season classification sample size three times. Our inability to manage the herd due to land status (the majority is private land), budget constraints for aerial surveys and safety issues of conducting aerial surveys in the Rawhide Butte area put this herd unit at a low priority for management emphasis.

2012 Harvest

											LICENSES
AREA	TYPE	ACTIVE	HARVEST					HUNTER	DAYS/	HUNTER	SOLD
		LICS/HTRS	BULL	SPIKE	COW	CALF	TOTAL	SUCCESS	HARVEST	DAYS	(cross hunt incl.)
3 Rawhide											
	Limited 1	71	35	2	2	0	39	54.9%	13.8	540	77
	Limited 4	50	0	0	7	4	11	22.0%	40.7	448	50
	Limited 6	63	0	0	3	3	6	9.5%	134.0	804	75
	General	153	37	8	12	0	57	37.3%	15.6	888	
Pooled Total		315	72	10	24	7	**113**	35.9%	23.7	2680	
Pooled Resident		283	62	10	24	7	103	36.4%	24.4	2515	
Pooled Nonresident		32	10	0	0	0	10	31.3%	16.5	165	

Total Harvest for the Rawhide herd has increased from a 2006-2010 average of 62 elk to 113 in 2011. This hunt area is predominantly private land and as such landowners dictate bull harvest. Consequently, the percent of branch antlered bulls in the harvest is very high (94.6% in 2011) and our ability to manipulate this ratio through harvest is extremely limited.

2012 Hunter Satisfaction

AREA	RESIDENCY	NUMBER OF HUNTERS	SATISFACTION WITH OVERALL QUALITY OF HUNT *				
			VERY SATISFIED	SATISFIED	NEUTRAL	DISSATISFIED	VERY DISSATISFIED
3. Rawhide	Nonresident	18	38.9%	38.9%	5.6%	16.7%	0.0%
	Resident	89	28.1%	28.1%	21.3%	12.4%	10.1%
	Total	107	29.9%	29.9%	18.7%	13.1%	8.4%

Overall hunter satisfaction in 2011 was 60%. Nonresident hunter satisfaction was high with 78% of hunters being either very satisfied or satisfied and only 17% of nonresident hunters were dissatisfied. In comparison, resident hunter satisfaction was somewhat lower (56 %) and resident hunter dissatisfaction was slightly higher (23%). With a harvest success rate of 55% for Type 1 licenses and a branch antlered bull harvest of 95% the hunter dissatisfaction percentages are probably driven more by access issues rather than bull quality.

Starting the spring of 2012 the department held three landowner meetings throughout the region to gather input from the landowners in elk hunt area 3. A survey was distributed as well. Meetings were held in Wheatland, Torrington and Lusk. A total of ten landowners attended the three meetings and six surveys were returned. All participants felt that there were too many elk and the majority of participants agreed with our recommendation of using Alternative 3, the landowner/sportsmen satisfaction objective. Survey responses are provided in Appendix A.

N = 6 survey responses

1) Do you think the post-season population objective of 40 elk is:
   a) Too High _____
   b) Too Low ___6___
   c) About Right _____

2) What management tool would you like to see the Department use to manage the Rawhide Elk Herd:
   a) A post-season population objective with a herd estimate derived or based on a population model or density trend _____
   b) Alternative objectives (e.g. harvest statistics) ___2___
   c) Alternative objectives along with secondary objectives (e.g. damage) _____
   d) A combination of all three ___2___
   e) Other ___2___ (1 bull quality, 1 General season?)

3) Do you agree with combining that portion of Elk Hunt area 7 that is east of I-25 into Hunt Area 3 for the 2013 season?
   a) Yes ___1___
   b) No ___4___
   c) Unknown ___1___

Landowner satisfaction will be determined by an annual mail survey and hunter satisfaction will be based upon the annual hunter satisfaction survey with a target objective of 60% satisfaction for all constituents. We also intend to utilize the percentage of branch antlered bull harvest as a subobjective. However, since the current percentage of branch antlered bulls in the harvest exceeds 90% and our ability to reduce that proportion through harvest is extremely limited we propose to change the existing management strategy for this herd from recreational to special. This change will result in a subobjective of maintaining a branch antlered bull harvest of greater than 61%. Currently, all five of the elk herds in the Laramie Region are managed using a recreational strategy.

Some landowners also felt it was time to again propose a general season structure for all of Elk Hunt Area 3. There was an extensive effort put forth in 2010 recommending a general firearm season north of Highway 26. However, the majority of landowners at that time disagreed with that type of season structure. Some of those same landowners now have a different opinion. As a result, department personnel responsible for the management of Elk Area 3 hosted another landowner meeting in May of 2012 to reevaluate options for the fall of 2013. Twenty-two landowners returned written surveys with 10 respondents in favor of a general season north of Highway 26 and 12 opposed. However, the majority of the negative responses were generated by a single landowner who made copies of the survey and hand delivered them to his friends and neighbors who he knew would be opposed to a general season.

In summary, the Laramie Region will abandon the current numerical objective of 40 elk in favor of a nonmumerical population objective based upon landowner and hunter satisfaction and the percentage of branch antlered bulls in the harvest. We will also change the management strategy from recreational to special and follow trends over time to make management decisions based on constituent satisfaction and bull harvest parameters. Given the options available, we feel this is the best approach to take. However, given the nature of this herd unit, we are concerned that meeting these parameters may become difficult as we approach our goal of reducing elk numbers. In this herd unit landowner satisfaction and sportsman satisfaction may be negatively correlated and maintaining bull quality is less important than minimizing damage and reducing the population size.

TC/tc
Attachments

ATTACHMENT C

Art Brosovich

Rawhide Elk Herd Unit (Elk Hunt Area 3) Landowner Survey

1) Would you be in favor of that portion of Elk Hunt Area 3 north of U.S. Highway 26 going to a general license any elk season structure for the 2013 season?

A) YES ✓
B) NO

2) If yes, what date would you prefer the season to open on?

A) Same, September 15 ✓
B) October 1
C) October 15
D) Other

3) Please provide any addition comments/concerns

THANK YOU FOR YOUR PARTICIPATION!

Please mail survey to:
WGFD
Attn: Martin Hicks
827 Grange Road
Wheatland, WY 82201

Rawhide Elk Herd Unit (Elk Hunt Area 3) Landowner Survey

1) Would you be in favor of that portion of Elk Hunt Area 3 north of U.S. Highway 26 going to a general license any elk season structure for the 2013 season?

A) YES ✓
B) NO

2) If yes, what date would you prefer the season to open on?

A) Same, September 15 ✓
B) October 1
C) October 15
D) Other

3) Please provide any addition comments/concerns

THANK YOU FOR YOUR PARTICIPATION! Steve Collins

Please mail survey to:
WGFD
Attn: Martin Hicks
827 Grange Road
Wheatland, WY 82201

Rawhide Elk Herd Unit (Elk Hunt Area 3) Landowner Survey

1) Would you be in favor of that portion of Elk Hunt Area 3 north of U.S. Highway 26 going to a general license any elk season structure for the 2013 season?

A) YES X
B) NO _____

2) If yes, what date would you prefer the season to open on?

A) Same, September 15 _____
B) October 1 _____
C) October 15 _____
D) Other Don't make any DIFFRENCE

3) Please provide any addition comments/concerns

With most of the Land involved Being Privet Let the Land Owners use there Land as thay see Fit.

THANK YOU FOR YOUR PARTICIPATION!

Please mail survey to:
WGFD
Attn: Martin Hicks
827 Grange Road
Wheatland, WY 82201

Rawhide Elk Herd Unit (Elk Hunt Area 3) Landowner Survey

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A) YES ✓
B) NO_____

2) If yes, what date would you prefer the season to open on?

A) Same, September 15_____
B) October 1_____
C) October 15 ✓
D) Other_____

3) Please provide any addition comments/concerns

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THANK YOU FOR YOUR PARTICIPATION!

Bill Lee

Please mail survey to:
WGFD
Attn: Martin Hicks
827 Grange Road
Wheatland, WY 82201

Rawhide Elk Herd Unit (Elk Hunt Area 3) Landowner Survey

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A) YES_____
B) NO_____

2) If yes, what date would you prefer the season to open on?

A) Same, September 15_____
B) October 1_____
C) October 15_____
D) Other_____

3) Please provide any addition comments/concerns

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THANK YOU FOR YOUR PARTICIPATION!

Please mail survey to:
WGFD
Attn: Martin Hicks
827 Grange Road
Wheatland, WY 82201

Rawhide Elk Herd Unit (Elk Hunt Area 3) Landowner Survey

1) Would you be in favor of that portion of Elk Hunt Area 3 north of U.S. Highway 26 going to a general license any elk season structure for the 2013 season?

A) YES yes
B) NO

2) If yes, what date would you prefer the season to open on?

A) Same, September 15
B) October 1
C) October 15 Oct 15
D) Other Later season

3) Please provide any addition comments/concerns

The elk season has opened way too soon. It's too hot for them to be down lower looking for feed. Our season has just warmed up too much. Oct 15th or later would be better.

THANK YOU FOR YOUR PARTICIPATION!

Please mail survey to:
WGFD
Attn: Martin Hicks
827 Grange Road
Wheatland, WY 82201

Rawhide Elk Herd Unit (Elk Hunt Area 3) Landowner Survey

1) Would you be in favor of that portion of Elk Hunt Area 3 north of U.S. Highway 26 going to a general license any elk season structure for the 2013 season?

A) YES ✓
B) NO _____

2) If yes, what date would you prefer the season to open on?

A) Same, September 15 _____
B) October 1 _____
C) October 15 ✓
D) Other _____

3) Please provide any addition comments/concerns

As a landowner in hunt area # 3. I would be willing to have all of hunt area # 3 general license if the Game & Fish will also change both hunt areas 113 and 123 from Limited Quota to general hunt areas as well.
Concluding that the following elk ~~area~~ areas, # 3, # 113 # 123, # 126 and # 129 are all combined to create one large general License elk area that opens as follows. The Season for Archer Aug 25 - OCT 14, Rifle Season would open OCT 15 - December 31st.
This new general area will also include that portion of hunt area # 7 East of Interstate 25.

THANK YOU FOR YOUR PARTICIPATION!

David A. Steiner

Please mail survey to:
WGFD
Attn: Martin Hicks
827 Grange Road
Wheatland, WY 82201

Rawhide Elk Herd Unit (Elk Hunt Area 3) Landowner Survey

1) Would you be in favor of that portion of Elk Hunt Area 3 north of U.S. Highway 26 going to a general license any elk season structure for the 2013 season?

A) YES X
B) NO _____

Don Frederick

2) If yes, what date would you prefer the season to open on?

A) Same, September 15 X
B) October 1 _____
C) October 15 _____
D) Other _____

3) Please provide any addition comments/concerns

THE NUMBER OF ELK SEEN IN MY AREA HAS BEEN CONSIDERABLY LESS THE PAST 2 YEARS. ALSO MOST OF MY LAND IS ALREADY COMMITTED SO I LIKELY WON'T BE ALLOWING ANY MORE HUNTERS ON THE LAND.

I HOPE THIS CHANGE WILL HELP ACHIEVE YOUR GOALS.

DON FREDERICK

THANK YOU FOR YOUR PARTICIPATION!

Please mail survey to:
WGFD
Attn: Martin Hicks
827 Grange Road
Wheatland, WY 82201

Rawhide Elk Herd Unit (Elk Hunt Area 3) Landowner Survey

1) Would you be in favor of that portion of Elk Hunt Area 3 north of U.S. Highway 26 going to a general license any elk season structure for the 2013 season?

A) YES ✓
B) NO

2) If yes, what date would you prefer the season to open on?

A) Same, September 15
B) October 1
C) October 15 TO NOV. 30TH
D) Other

3) Please provide any addition comments/concerns

IT IS TO WARM TO HUNT SEPT 15TH Then OCT 15TH The general would probably Keep The numbers down some. Were 6½ mi. north of Hartville, in The hills, and not seeing as many as we used To. The shorter season would be appreciated. most landowners dread The season. Too many people knocking at The door for Too Long!

NO season in Sept. or Dec.

THANK YOU FOR YOUR PARTICIPATION!

Please mail survey to:
WGFD
Attn: Martin Hicks
827 Grange Road
Wheatland, WY 82201

Rawhide Elk Herd Unit (Elk Hunt Area 3) Landowner Survey

1) Would you be in favor of that portion of Elk Hunt Area 3 north of U.S. Highway 26 going to a general license any elk season structure for the 2013 season?

A) YES ✓
B) NO _____

2) If yes, what date would you prefer the season to open on?

A) Same, September 15 ✓ to October 31
B) October 1 _____
C) October 15 _____
D) Other COW & CALF ~~[illegible]~~ NOV 15 - Dec 15

3) Please provide any addition comments/concerns

5/21 Every landowner story is different. All have differing ideas. I have from 30-150 hd of elk every day. It is so dry that they are hitting my meadows every night. I run them off before dark and they came back. they were on the meadow at daylight. It is mostly last years calves & about 8 bulls.

Let's try something different. I have too many and obviously my neighbors don't have enough. I can remedy that.

THANK YOU FOR YOUR PARTICIPATION!

Please mail survey to:
WGFD
Attn: Martin Hicks
827 Grange Road
Wheatland, WY 82201

Rawhide Elk Herd Unit (Elk Hunt Area 3) Landowner Survey

1) Would you be in favor of that portion of Elk Hunt Area 3 north of U.S. Highway 26 going to a general license any elk season structure for the 2013 season?

A) YES_____
B) NO X

2) If yes, what date would you prefer the season to open on?

A) Same, September 15_____
B) October 1_____
C) October 15 X
D) Other_____

3) Please provide any addition comments/concerns

From what I can see the herd of elk we did have moved to other areas or migrated else where changing there normal patterns,
There fore the population having changed, I don't feel the area could support general licensing.

THANK YOU FOR YOUR PARTICIPATION!

Please mail survey to:
WGFD
Attn: Martin Hicks
827 Grange Road
Wheatland, WY 82201

Rawhide Elk Herd Unit (Elk Hunt Area 3) Landowner Survey

1) Would you be in favor of that portion of Elk Hunt Area 3 north of U.S. Highway 26 going to a general license any elk season structure for the 2013 season?

A) YES_____
B) NO___X___

2) If yes, what date would you prefer the season to open on?

A) Same, September 15___X___
B) October 1_____
C) October 15_____
D) Other_____

3) Please provide any addition comments/concerns

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THANK YOU FOR YOUR PARTICIPATION!

Please mail survey to:
WGFD
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827 Grange Road
Wheatland, WY 82201

Rawhide Elk Herd Unit (Elk Hunt Area 3) Landowner Survey

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A) YES_____
B) NO__X_____

2) If yes, what date would you prefer the season to open on?

A) Same, September 15__X_____
B) October 1_____
C) October 15_____
D) Other_____

3) Please provide any addition comments/concerns

Trespassing Litter Drunks

THANK YOU FOR YOUR PARTICIPATION! Glenn Southwick

Please mail survey to:
WGFD
Attn: Martin Hicks
827 Grange Road
Wheatland, WY 82201

Rawhide Elk Herd Unit (Elk Hunt Area 3) Landowner Survey

1) Would you be in favor of that portion of Elk Hunt Area 3 north of U.S. Highway 26 going to a general license any elk season structure for the 2013 season?

A) YES_____
B) NO__X__

2) If yes, what date would you prefer the season to open on?

A) Same, September 15_____
B) October 1__X__
C) October 15_____
D) Other_____

3) Please provide any addition comments/concerns

It would seem appropriate to maintain a healthy herd in the area North of Highway 26. The presence of this wonderful resource was a major factor my wife and I considered when purchasing our property in the Haystacks in 2005. I would also like to see the opening date pushed back to at least October 1st to allow the Rut to be unencumbered by rifle hunting and better used for archery hunting warm weather in september makes use of carcasses problematic as well

Thanks for your consideration

Twyla M. Thalken

John P. + Twyla M. Thalken

THANK YOU FOR YOUR PARTICIPATION!

Please mail survey to:
WGFD
Attn: Martin Hicks
827 Grange Road
Wheatland, WY 82201

(over)

Rawhide Elk Herd Unit (Elk Hunt Area 3) Landowner Survey

1) Would you be in favor of that portion of Elk Hunt Area 3 north of U.S. Highway 26 going to a general license any elk season structure for the 2013 season?

A) YES_____
B) NO__X__

2) If yes, what date would you prefer the season to open on?

A) Same, September 15_____
B) October 1_____
C) October 15_____
D) Other_____

3) Please provide any addition comments/concerns

Not in Favor! Would Be ok To make a General COW season. But Leave Bull Season Limited Quota. Would prefer To Leave the whole area Limited Quota. It is working The way it is. If made into a Gen area it would Be a land owner night mare with Trespassers, and The Trophy Quality would go down. We Have been along Time building a Huntable population in area 3. I think It would be a Huge mistake To Go To a General at This point.
Ps. If Making a General season in area 3 why not a General in area 7? or State wide?

THANK YOU FOR YOUR PARTICIPATION!

Vin Miller
331-2398

Please mail survey to:
WGFD
Attn: Martin Hicks
827 Grange Road
Wheatland, WY 82201

Rawhide Elk Herd Unit (Elk Hunt Area 3) Landowner Survey

1) Would you be in favor of that portion of Elk Hunt Area 3 north of U.S. Highway 26 going to a general license any elk season structure for the 2013 season?

A) YES_____
B) NO___X___

2) If yes, what date would you prefer the season to open on?

A) Same, September 15_____
B) October 1_____
C) October 15_____
D) Other_____

3) Please provide any addition comments/concerns

Too much private land. Hunters would find great difficulty in finding a place to hunt.
Not that many elk in this area.

THANK YOU FOR YOUR PARTICIPATION!

Please mail survey to:
WGFD
Attn: Martin Hicks
827 Grange Road
Wheatland, WY 82201

No Name
(Glendo)

Rawhide Elk Herd Unit (Elk Hunt Area 3) Landowner Survey

1) Would you be in favor of that portion of Elk Hunt Area 3 north of U.S. Highway 26 going to a general license any elk season structure for the 2013 season?

A) YES_____
B) NO___XX___

2) If yes, what date would you prefer the season to open on?

A) Same, September 15_____
B) October 1_____
C) October 15_____
D) Other_____

3) Please provide any addition comments/concerns

General season would attract to many that are just impulse hunters, not true sportsman. the trespassing issue is of great concern. Most land owner allow a few hunters in, if you flooded them with hunters with a general area, they will shut off all hunting, don't want to deal with the flood of hunters, have seen this happen. I would accept the idea of raising the # of lic to reach the goal, but keep it limited, quota that would help keep the quality bulls we have now.

THANK YOU FOR YOUR PARTICIPATION!

Please mail survey to:
WGFD
Attn: Martin Hicks
827 Grange Road
Wheatland, WY 82201

Thanks
Butch Mellekin
Glendo, Wy

Rawhide Elk Herd Unit (Elk Hunt Area 3) Landowner Survey

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A) YES_____
B) NO___X___

2) If yes, what date would you prefer the season to open on?

A) Same, September 15_____
B) October 1_____
C) October 15_____
D) Other_____

3) Please provide any addition comments/concerns

Changing to a general license would increase trespassing issues from road hunters this area is predominatly private land north of the Nat Grand North feeding area and many hunters that have permission from the military do not seem to know where there boundarys are and private land starts
If for any reason they allowed this elk season should be concurrent with the present deer season so we don't have a different time having to deal with trespassers

Kelly & Cheryl Rabyn 984 Potter Cond
Glendo 82213

THANK YOU FOR YOUR PARTICIPATION!

Please mail survey to:
WGFD
Attn: Martin Hicks
827 Grange Road
Wheatland, WY 82201

Rawhide Elk Herd Unit (Elk Hunt Area 3) Landowner Survey

1) Would you be in favor of that portion of Elk Hunt Area 3 north of U.S. Highway 26 going to a general license any elk season structure for the 2013 season?

A) YES_____
B) NO_X_____

2) If yes, what date would you prefer the season to open on?

A) Same, September 15_____
B) October 1_____
C) October 15_____
D) Other_____

3) Please provide any addition comments/concerns

I think you should leave as is, but issue more cow tags. That is the only way to keep the herd under control, I think

Thanks Andy Barnette

THANK YOU FOR YOUR PARTICIPATION!

Please mail survey to:
WGFD
Attn: Martin Hicks
827 Grange Road
Wheatland, WY 82201

Rawhide Elk Herd Unit (Elk Hunt Area 3) Landowner Survey

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A) YES_____
B) NO___X___

2) If yes, what date would you prefer the season to open on?

A) Same, September 15_____
B) October 1_____
C) October 15_____
D) Other_____

3) Please provide any addition comments/concerns

THANK YOU FOR YOUR PARTICIPATION!

Please mail survey to:
WGFD
Attn: Martin Hicks
827 Grange Road
Wheatland, WY 82201

Brad Rose
Shawnee
307 334 2307

Rawhide Elk Herd Unit (Elk Hunt Area 3) Landowner Survey

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A) YES_____
B) NO___X_____

2) If yes, what date would you prefer the season to open on?

A) Same, September 15_____
B) October 1_____
C) October 15_____
D) Other_____

3) Please provide any addition comments/concerns

To keep less traffic.

THANK YOU FOR YOUR PARTICIPATION!

Please mail survey to:
WGFD
Attn: Martin Hicks
827 Grange Road
Wheatland, WY 82201

Lee Lamb
Jack Lamb
Ellen Lamb

Rawhide Elk Herd Unit (Elk Hunt Area 3) Landowner Survey

1) Would you be in favor of that portion of Elk Hunt Area 3 north of U.S. Highway 26 going to a general license any elk season structure for the 2013 season?

A) YES_____
B) NO ✓

2) If yes, what date would you prefer the season to open on?

A) Same, September 15_____
B) October 1_____
C) October 15_____
D) Other_____

3) Please provide any addition comments/concerns

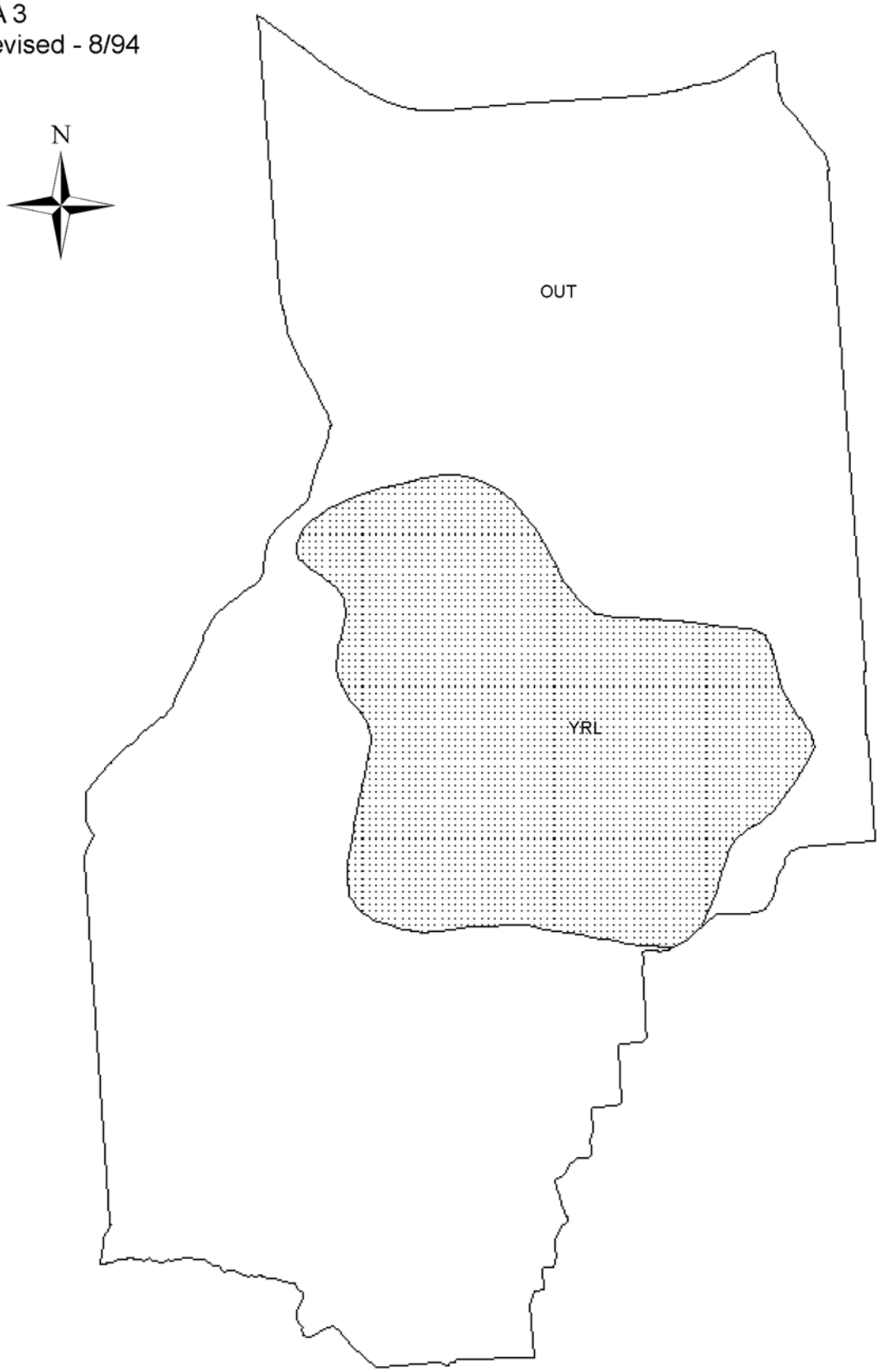
WHERE DO YOU THINK A GENRAL SEASON TAG PUBLIC WILL HUNT?
AREA 3 IS NEARLY ALL PRIVATE LAND!
I HAVE ALREADY HAD TRESSPASSERS TEAR DOWN SIGN'S, CUT FENCE'S & HUNT MY GROUND ARE YOU GOING TO PATROL IT?
LET MOTHER NATURE BALANCE THE HERD
YOU DONT PAY FOR MY LAND TAXES INSURACE ECT.
POOR DISISION! HOW ABOUT MORE LANDOWNER TAGS?

THANK YOU FOR YOUR PARTICIPATION!

Please mail survey to:
WGFD
Attn: Martin Hicks
827 Grange Road
Wheatland, WY 82201

P.S. I RECEIVED THIS MAILING AFTER THE MEETING!

E730 - Rawhide
HA 3
Revised - 8/94



MOOSE

2011 - JCR Evaluation Form

SPECIES: Moose | PERIOD: 6/1/2011 - 5/31/2012

HERD: MO545 - SNOWY RANGE

HUNT AREAS: 38, 41 | PREPARED BY: WILL SCHULTZ

	2006 - 2010 Average	2011	2012 Proposed
Population:	0	N/A	N/A
Harvest:	37	46	60
Hunters:	40	53	60
Hunter Success:	92%	87%	100 %
Active Licenses:	40	53	60
Active License Percent:	92%	87%	100 %
Recreation Days:	249	389	450
Days Per Animal:	6.7	8.5	7.5
Males per 100 Females	105	98	
Juveniles per 100 Females	47	46	

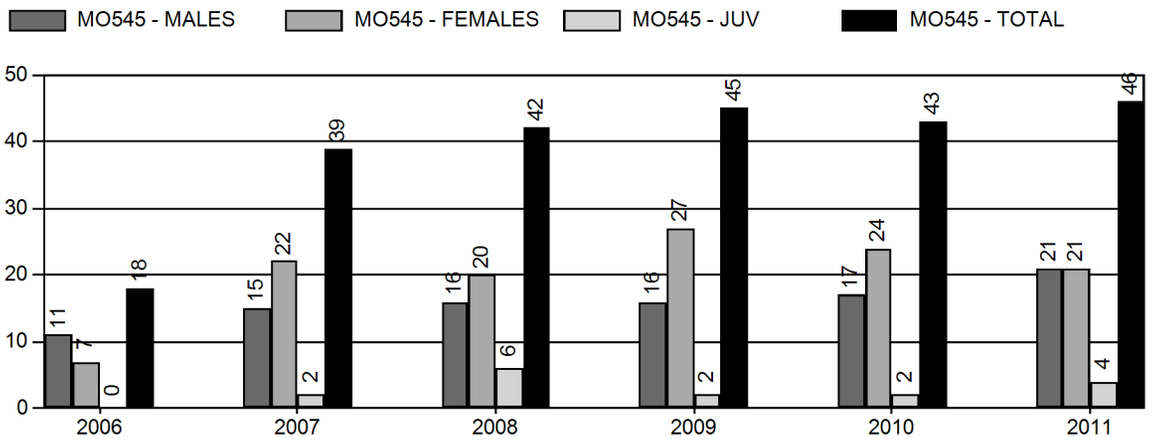
Population Objective:	100
Management Strategy:	Special
Percent population is above (+) or below (-) objective:	N/A%
Number of years population has been + or - objective in recent trend:	0
Model Date:	None

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

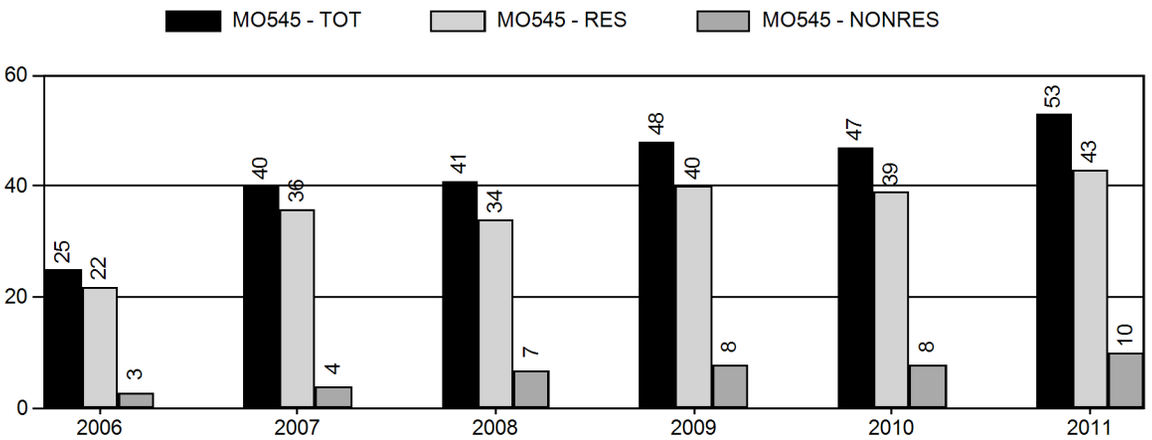
	JCR Year	Proposed
Females ≥ 1 year old:	NA%	NA%
Males ≥ 1 year old:	NA%	NA%
Juveniles (< 1 year old):	NA%	NA%
Total:	NA%	NA%
Proposed change in post-season population:	NA%	NA%

Population Size - Postseason

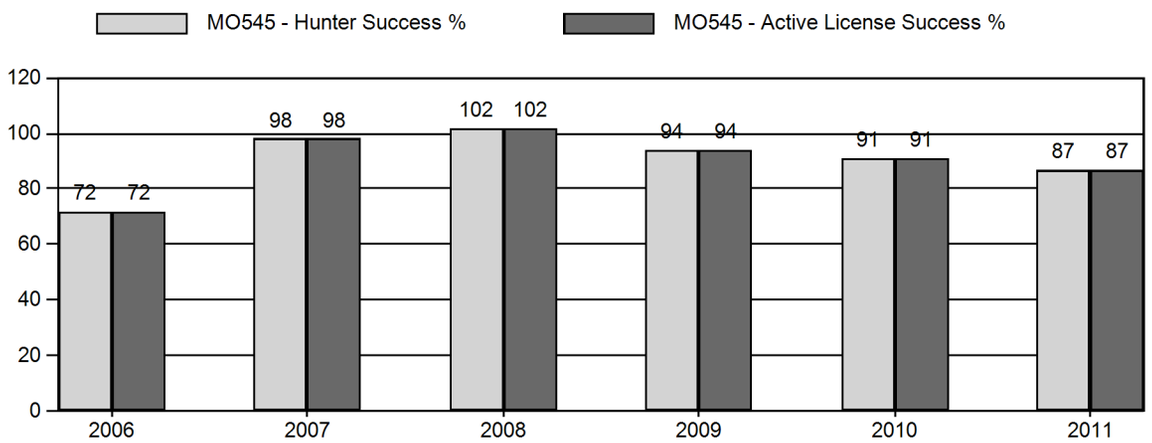
Harvest



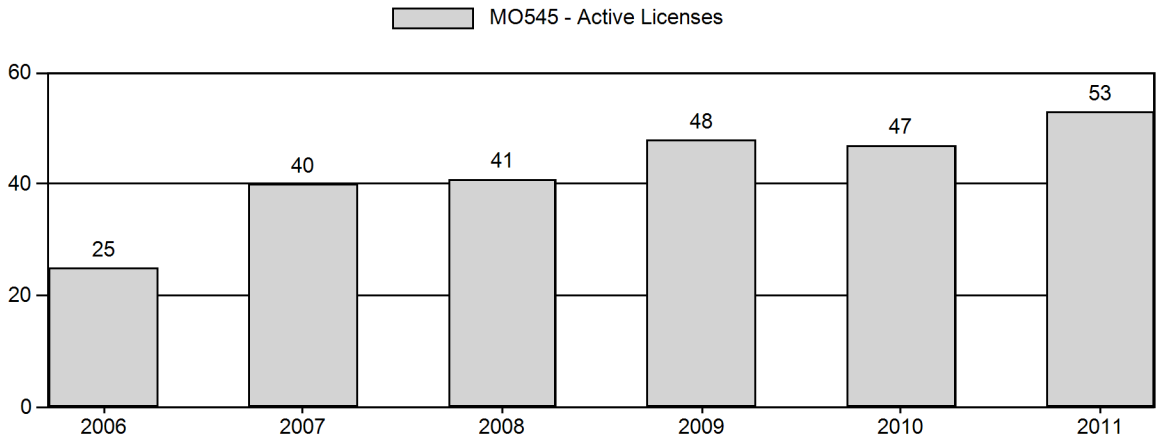
Number of Hunters



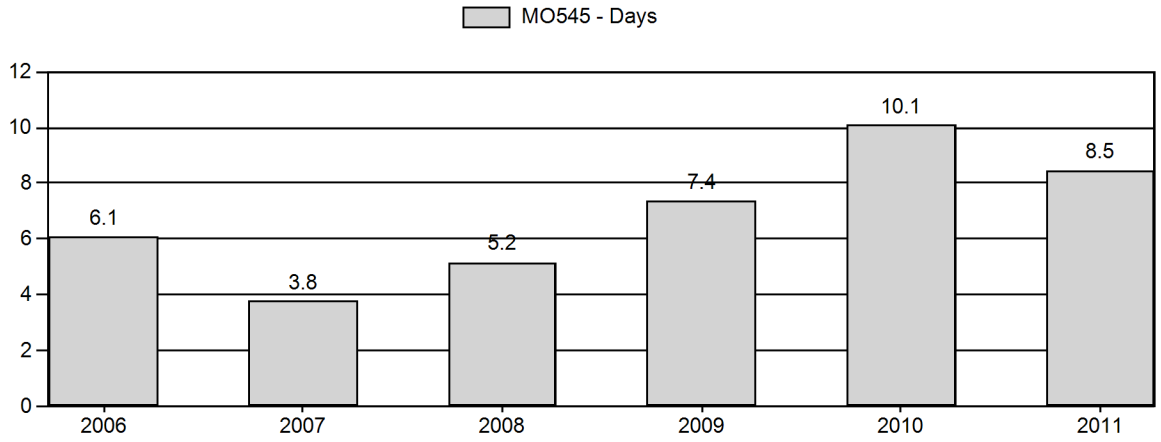
Harvest Success



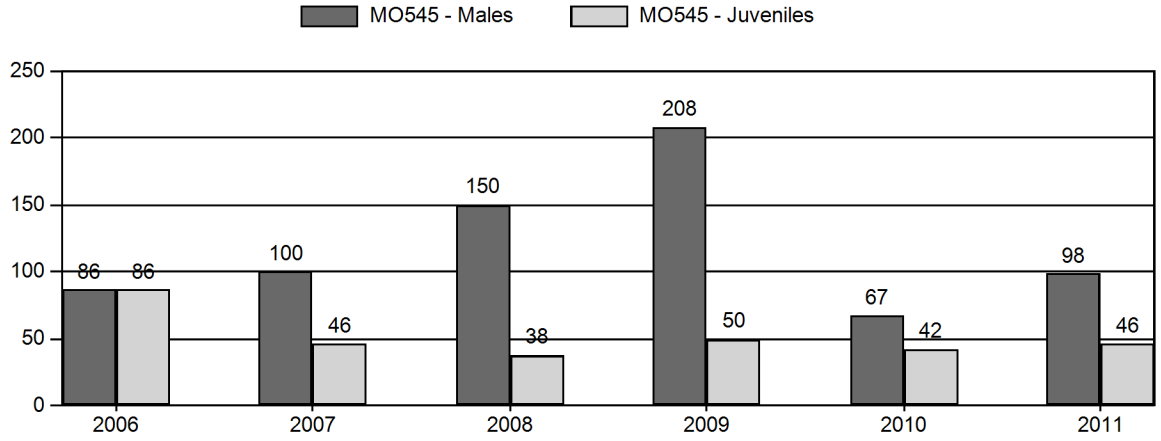
Active Licenses



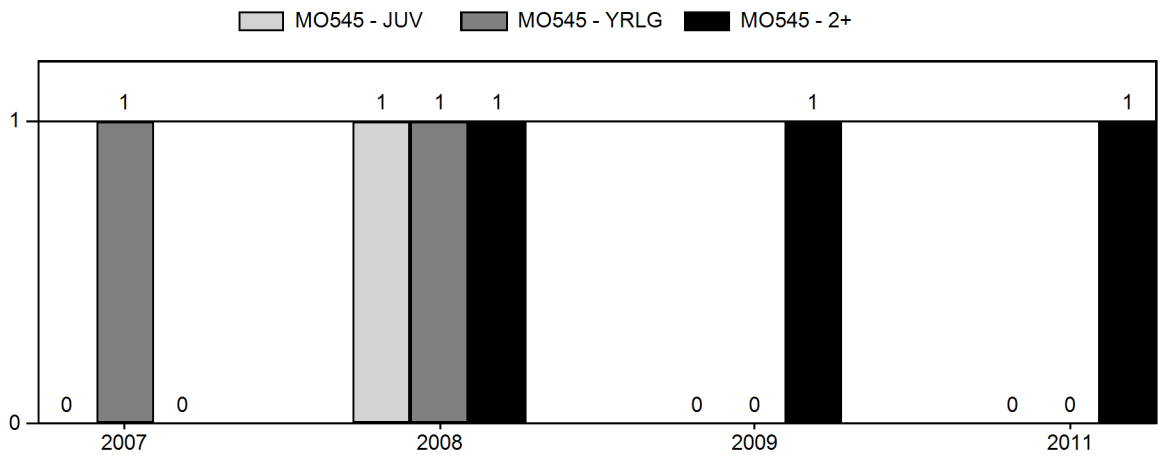
Days per Animal Harvested



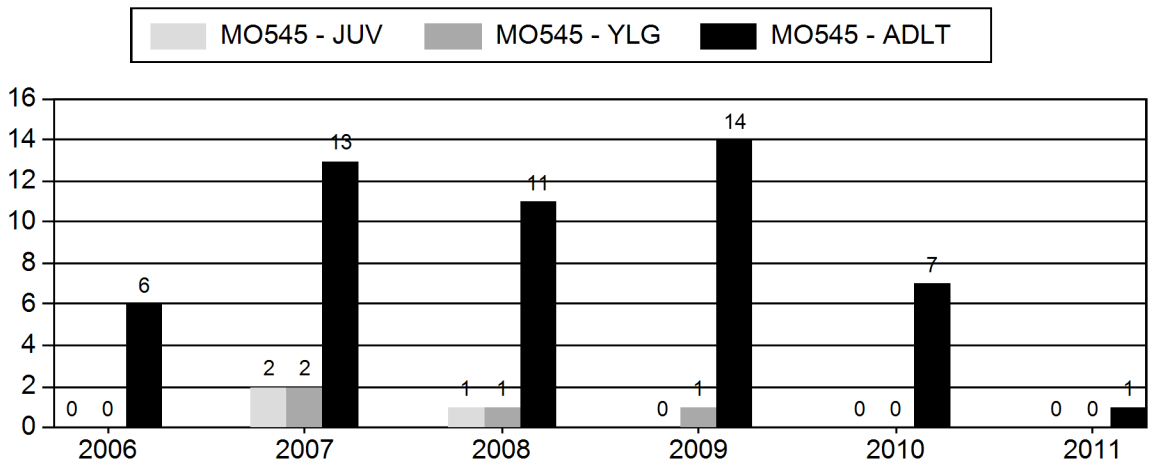
Postseason Animals per 100 Females



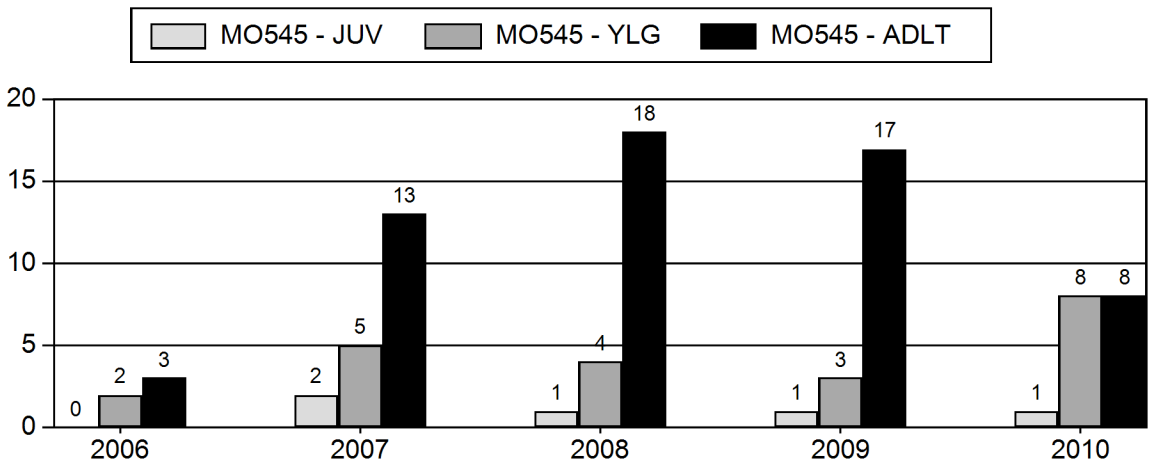
Age Structure of Field Checked Males



Age Structure Data (Field and Laboratory) - Male



Age Structure Data (Field and Laboratory) - Female



2006 - 2011 Postseason Classification Summary

for Moose Herd MO545 - SNOWY RANGE

		MALES				FEMALES		JUVENILES				Males to 100 Females				Young to		
Year	Post Pop	Ylg	Adult	Total	%	Total	%	Total	%	Tot Cls	Cls Obj	Ylng	Adult	Total	Conf Int	100 Fem	Conf Int	100 Adult
2006	0	1	5	6	32%	7	37%	6	32%	19	142	14	71	86	± 57	86	± 57	46
2007	0	3	10	13	41%	13	41%	6	19%	32	152	23	77	100	± 45	46	± 26	23
2008	0	1	11	12	52%	8	35%	3	13%	23	144	12	138	150	± 0	38	± 0	15
2009	0	4	21	25	58%	12	28%	6	14%	43	0	33	175	208	± 0	50	± 0	16
2010	0	7	17	24	32%	36	48%	15	20%	75	0	19	47	67	± 0	42	± 0	25
2011	0	3	46	49	40%	50	41%	23	19%	122	0	6	92	98	± 0	46	± 0	23

2011 HUNTING SEASONS

MO545 - SNOWY RANGE

Hunt Area	Add'l Hunt Areas	Type	Quota	Season Dates	Limitations
38	41	Type 1	20	10/01 - 11/14	any moose, except cow moose with calf at side
38	41	Type 4	35	10/01 - 11/14	antlerless moose, except cow moose with calf at side

Area	Type	Active Lic/Htrs	Bull	Cow	Calf	Total	Success	Days/Harvest	Days	Licenses Sold
2011										
38 SNOWY RANGE										
	Type 1	21	21	0	0	21	100%	8.6	180	20
	Type 4	31	0	21	3	24	77.40%	8.3	199	32
Pooled Total		52 (52)*	21	21	3	45	86.50% (86.5%)*	8.4	379	
Pooled Resident		42	14	18	3	35	83.30%	9	316	
Pooled Nonresident		10	7	3	0	10	100%	6.3	63	
41 SIERRA MADRE										
	Type 4	1	0	0	1	1	100%	10	10	0
Pooled Total		1 (1)*	0	0	1	1	100% (100%)*	10	10	
Pooled Resident		1	0	0	1	1	100%	10	10	
Pooled Nonresident		0	0	0	0	0	0	0	0	
2011 Hunt Area Tota		53 (53)*	21	21	4	46	86.80% (86.8%)*	8.5	389	52
2011 Herd Total		53 (53)*	21	21	4	46	86.80% (86.8%)*	8.5	389	52

*Active Licenses

2006 - 2011 Harvest Age Structure

for Moose Herd MO545 - SNOWY RANGE

	Males									Females									Herd
Year	**Juv**	**1**	**% ***	**2 ^**	**% ****	**Tot Aged ++**	**Not Aged +++**	**Unk**	**Tot Chkd**	**Juv**	**1**	**% ***	**2 ^**	**% ****	**Tot Aged ++**	**Not Aged +++**	**Unk**	**Tot Chkd**	**Tot**
2006	0	0	0%	6	100%	6	0	0	6	0	2	40%	3	60%	5	0	0	5	11
2007	2	2	13%	13	87%	17	0	0	17	2	5	28%	13	72%	20	0	0	20	37
2008	1	1	8%	11	92%	13	0	2	15	1	4	18%	18	82%	23	0	1	24	39
2009	0	1	7%	13	93%	14	1	0	15	1	3	15%	16	84%	20	1	3	24	39
2010	0	0	0%	7	100%	7	0	0	7	1	8	50%	8	50%	17	0	0	17	24
2011	0	0	0%	1	100%	1	0	0	1	0	0	0%	0	0%	0	0	0	0	1

*	Percent of aged animals (including unaged adults but excluding juveniles) 1 1/2 years old
^	Number of animals two years old and older. Animals aged older than two (excluding unaged adults) are lumped into this two plus category
**	Percent of aged animals (not including juveniles or unaged adults) two years old or older
++	includes juveniles
+++	Unaged adults - unaged animals older than yearlings

Snowy Range Moose (MO545)
Hunt Areas 38, 41
2012 Season Recommendations

Hunt Area	Type	Date of Seasons Opens	Date of Seasons Closes	Limitations
38, 41	1	Oct. 1	Nov. 14	Limited quota; ~~20~~ 25 licenses any moose, except cow moose with calf at side
	4	Oct. 1	Nov. 14	Limited quota; 35 licenses antlerless moose except cow moose with calf at side
Archery				Refer to Section 4 of this Chapter

Summary of Proposed Changes in License Numbers

Hunt Area	Type	Change From 2011
38, 41	1	+5

Management Evaluation

Traditionally there has been no allocation of funding in this herd unit to collect moose classification data. Moose classification data was collected incidentally during annual mule deer and elk classification surveys. However, in 2011 an additional 8 hours of helicopter time was allocated to collect moose classification data in the Snowy Range herd unit. The 2011 postseason classification sample (n=122) produced total bull ratios of 98/100 cows. Calf ratio were 46/100 cows. This was the largest classification sample ever collected in the Snowy Range herd unit. A POP-II population model has not been developed for this moose herd unit. However, it is assumed the population is stable to decreasing in trend.

Harvest

In 2011, 53 hunters harvested 21 bulls, 21 cows and 4 calves. A total of 3 illegally harvested moose were documented this year, compared to 1 moose documented in 2010. Male lab-aged tooth samples (n=20) indicated this year's median age and percentage of the bull harvest ≥ 5 years of age, were within the "prime-age bull" class (Figures 1, 2 and 3) (Thomas 2008). Age class distribution from female lab-aged tooth samples (n=20) indicated 55% of the antlerless moose harvest were ≤ 2 years old (Figure 4).

Figure 1. Median age of bulls harvested for the Snowy Range Moose Herd Unit (MO545), Wyoming 2011.

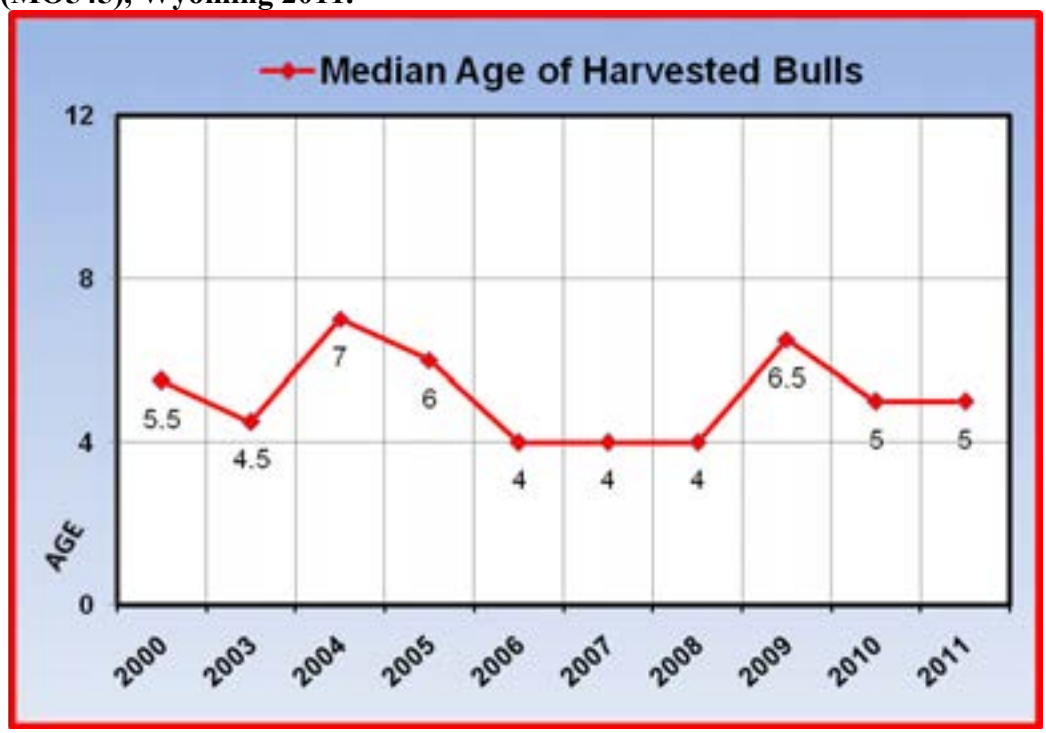


Figure 2. Average (3-year running) median age of bulls harvested for the Snowy Range Moose Herd Unit (MO545), Wyoming 2011.

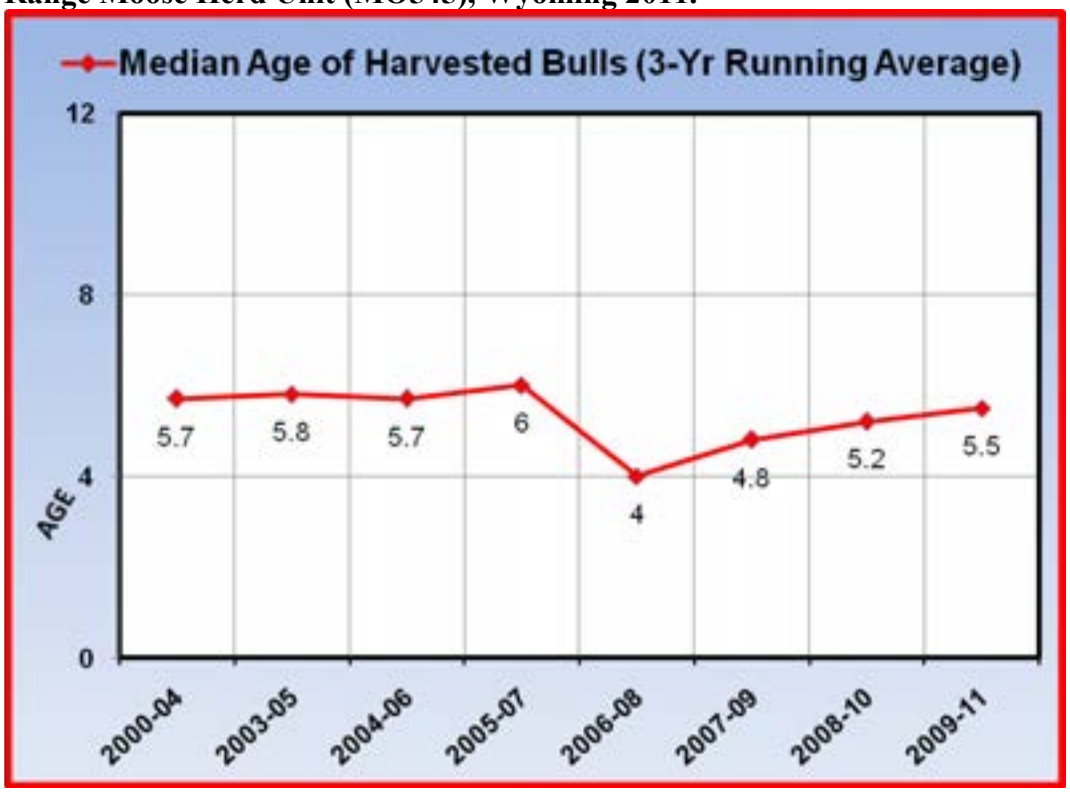


Figure 3. Annual Percentages of the bull harvest ≥ 5-years in age from Snowy Range Moose Herd Unit (MO545), Wyoming 2011.

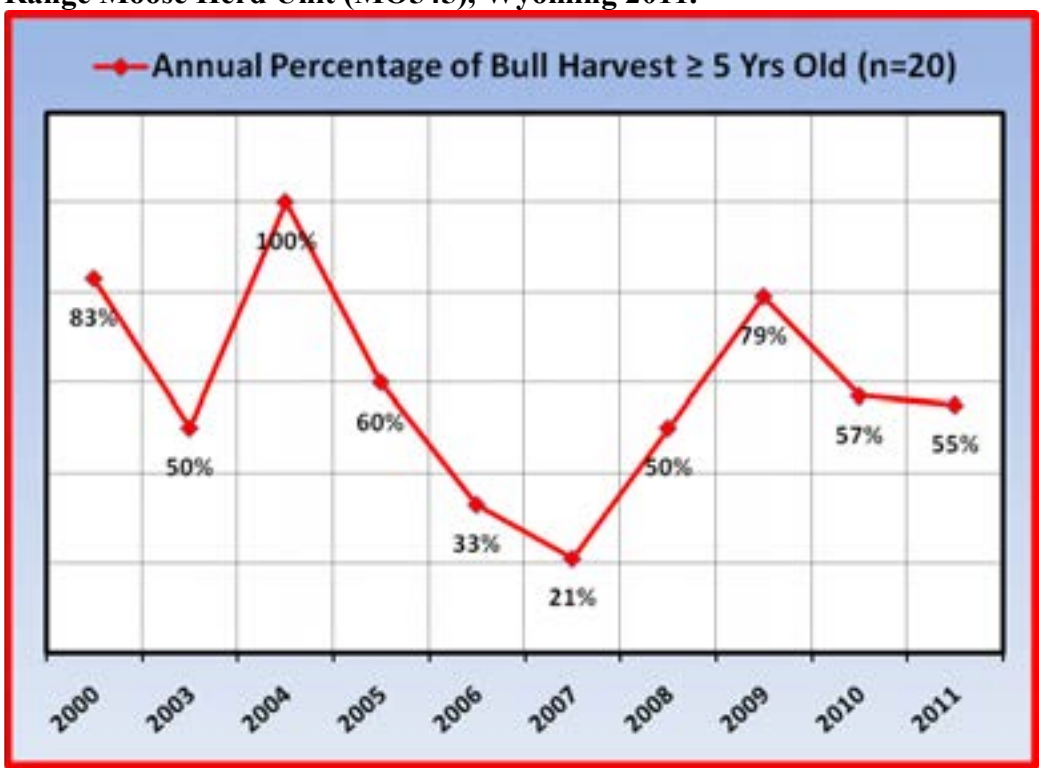
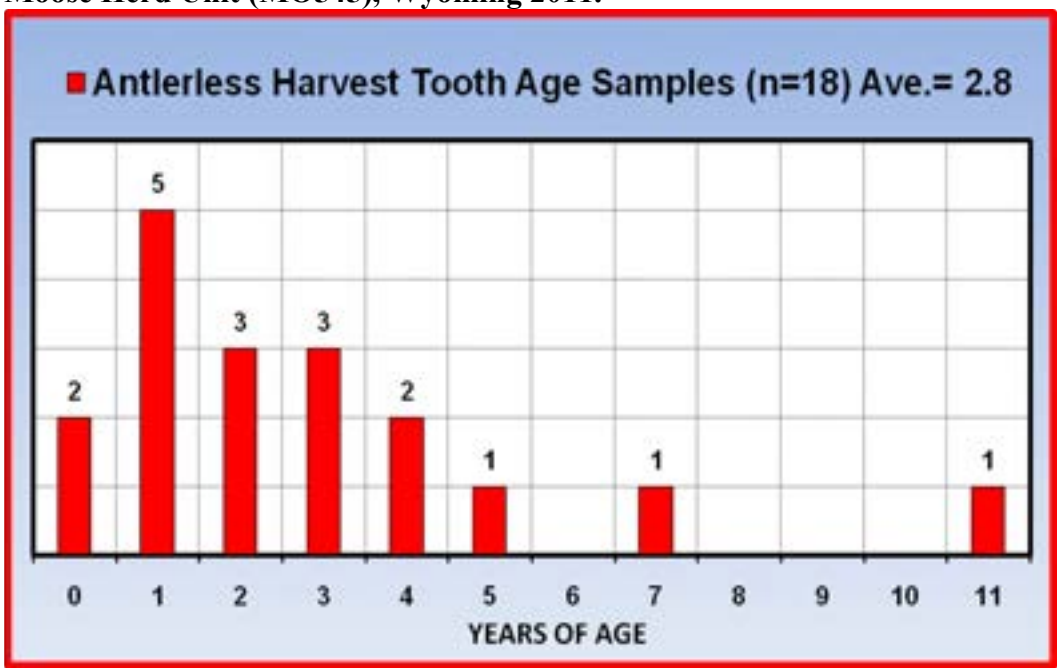


Figure 4. Age class distribution for antlerless moose harvested from Snowy Range Moose Herd Unit (MO545), Wyoming 2011.



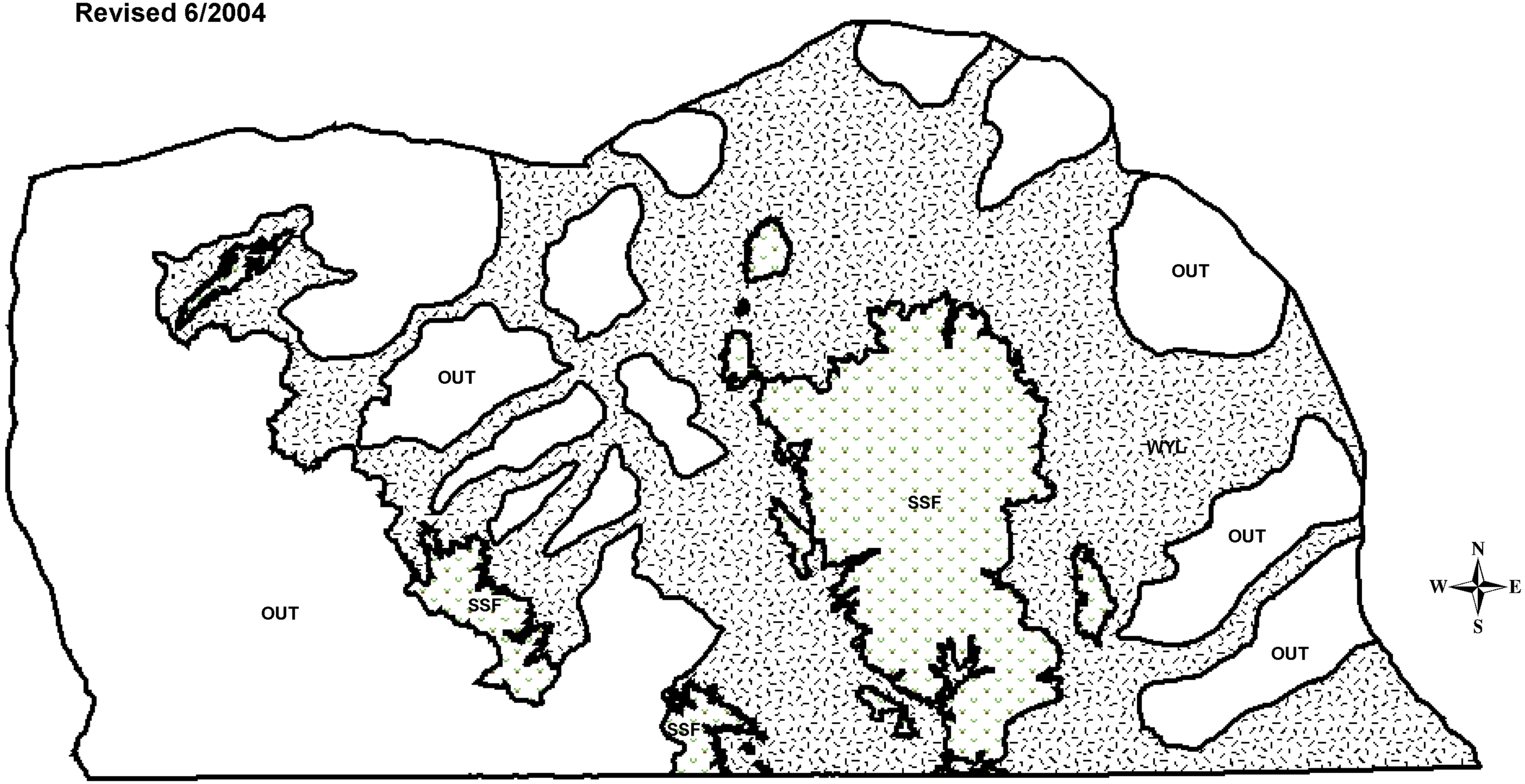
2012 Season Proposal

The proposed increase of Type 1 licenses will continue to provide most hunters with an opportunity to harvest mature bulls, while maintaining the number of Type 4 licenses will continue to provide some measure of population control. Age data collected from the 2012 harvest will assist managers in determining future harvest potential for the Snowy Range Herd Unit.

Literature Cited

Thomas, T. P. 2008. Moose Population Management Recommendations. Wyoming Game and Fish Department, Cheyenne. 17 pp.

Moose (M545) -- Snowy Range/Sierra Madre
HA 38, 41
Revised 6/2004



BIGHORN SHEEP

2011 - JCR Evaluation Form

SPECIES: Bighorn Sheep | PERIOD: 6/1/2011 - 5/31/2012

HERD: BS516 - DOUGLAS CREEK

HUNT AREAS: 18 | PREPARED BY: LEE KNOX

	2006 - 2010 Average	2011	2012 Proposed
Population:	0	N/A	N/A
Harvest:	0	0	2
Hunters:	0	0	2
Hunter Success:	0%	0%	100 %
Active Licenses:	0	0	2
Active License Percent:	0%	0%	100 %
Recreation Days:	1	0	5
Days Per Animal:	0	0	2.5
Males per 100 Females	28	18	
Juveniles per 100 Females	23	36	

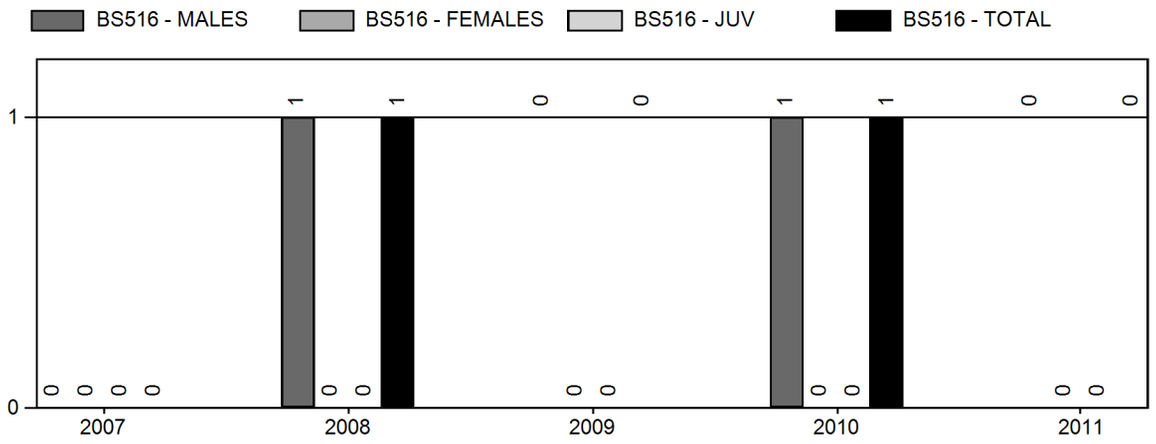
Population Objective:	350
Management Strategy:	Special
Percent population is above (+) or below (-) objective:	N/A%
Number of years population has been + or - objective in recent trend:	11
Model Date:	02/28/2012

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

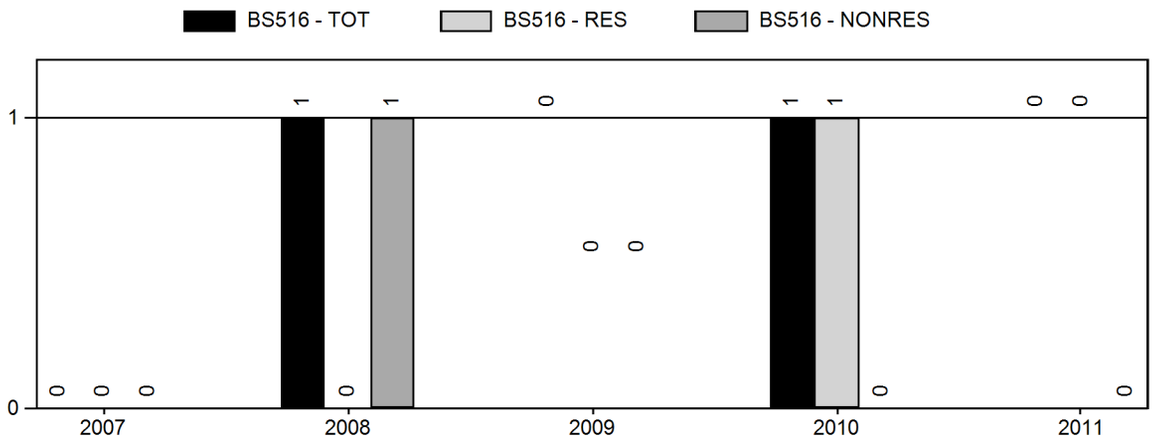
	JCR Year	Proposed
Females ≥ 1 year old:	0%	0%
Males ≥ 1 year old:	0%	0%
Juveniles (< 1 year old):	0%	0%
Total:	0%	0%
Proposed change in post-season population:	0%	0%

Population Size - Postseason

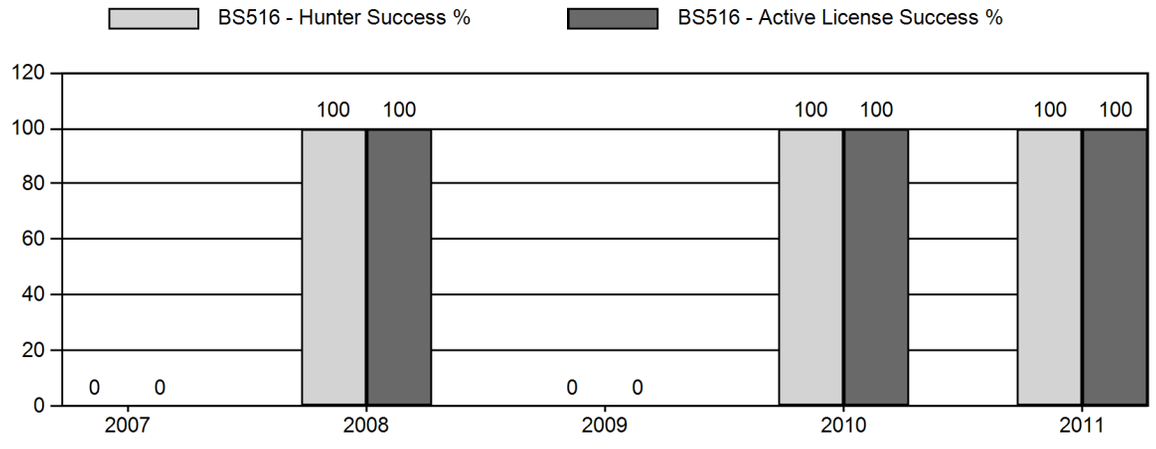
Harvest



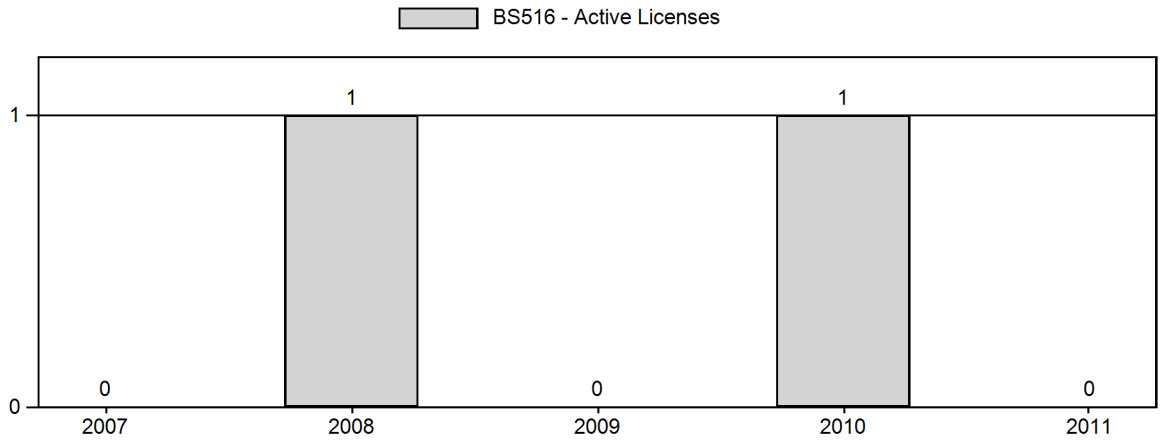
Number of Hunters



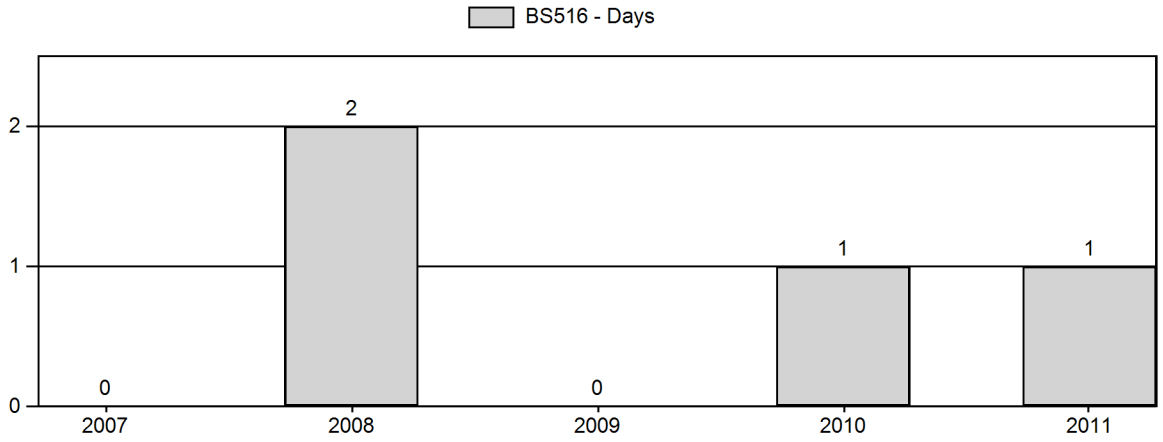
Harvest Success



Active Licenses



Days per Animal Harvested



Postseason Animals per 100 Females

2007 - 2011 Postseason Classification Summary

for Bighorn Sheep Herd BS516 - DOUGLAS CREEK

		MALES				FEMALES		JUVENILES				Males to 100 Females				Young to		
Year	Post Pop	Ylg	Adult	Total	%	Total	%	Total	%	Tot Cls	Cls Obj	Ylng	Adult	Total	Conf Int	100 Fem	Conf Int	100 Adult
2007	0	1	3	4	17%	18	78%	1	4%	23	0	6	17	22	± 0	6	± 0	5
2008	0	1	5	6	23%	17	65%	3	12%	26	0	6	29	35	± 0	18	± 0	13
2009	0	0	4	4	15%	14	54%	8	31%	26	92	0	29	29	± 0	57	± 0	44
2010	0	1	3	4	16%	17	68%	4	16%	25	74	6	18	24	± 0	24	± 0	19
2011	0	0	4	4	12%	22	65%	8	24%	34	0	0	18	18	± 0	36	± 0	31

Area	Type	Active Lic/ Htrs	Ram	Ewe	Lamb	Total	Success	Days/ Harvest	Days	Licenses Sold
2008										
18 DOUGLAS CREEK										
	Type 1	1	1	0	0	1	100%	2	2	0
Pooled Total		1 (1)*	1	0	0	1	100% (100%)*	2	2	
Pooled Resident		0	0	0	0	0	0	0	0	
Pooled Nonresident		1	1	0	0	1	100%	2	2	
2008 Hunt Area Total		1 (1)*	1	0	0	1	100% (100%)*	2	2	0
2008 Herd Total		1 (1)*	1	0	0	1	100% (100%)*	2	2	0
2010										
18 DOUGLAS CREEK										
	Type 1	1	1	0	0	1	100%	1	1	1
Pooled Total		1 (1)*	1	0	0	1	100% (100%)*	1	1	
Pooled Resident		1	1	0	0	1	100%	1	1	
Pooled Nonresident		0	0	0	0	0	0	0	0	
2010 Hunt Area Total		1 (1)*	1	0	0	1	100% (100%)*	1	1	1
2010 Herd Total		1 (1)*	1	0	0	1	100% (100%)*	1	1	1

DOUGLAS CREEK BIGHORN SHEEP
(BS516)
Hunt Area 18
2012 Hunting Season

Hunt Area	Type	Date of Seasons Opens	Closes	Limitations
~~18~~				~~CLOSED~~
18/21	**1**	**Sept. 1**	**Oct. 31**	**Limited Quota, 2 licenses; any ram. 1 license will be issued to a resident and 1 license will be issued to a nonresident.**
18,21 Archery		**Aug. 15**	**Aug. 31**	**Refer to Section 3 of this Chapter**

SUMMARY OF CHANGES BY LICENSE NUMBER

Area	Type	Change from 2010
18	1	Limited Quota, 2 licenses; any ram
Herd Totals	**1**	**+2**

Changes for 2012

- The season will be open with licenses valid in Area 18 and 21.
- Only one nonresident and one resident will be drawn for these licenses
- Licenses will be valid for any ram

Management Evaluation

The Douglas Creek Herd Unit is under special management guidelines which targets for a mean age of harvested rams to be between 6-and 8 years old. We have taken this direction to provide trophy opportunity to the public and allow this herd to grow. Area 18 was closed from 2004 through 2007 and then again in 2009 and 2011 because this population has remained well-below desired levels due to low lamb recruitment. We will again open Area 18 with Area 21 of the Encampment river Herd to provide some limited opportunity for one nonresident and one resident to hunt a bighorn while we still have some sheep left in these populations.

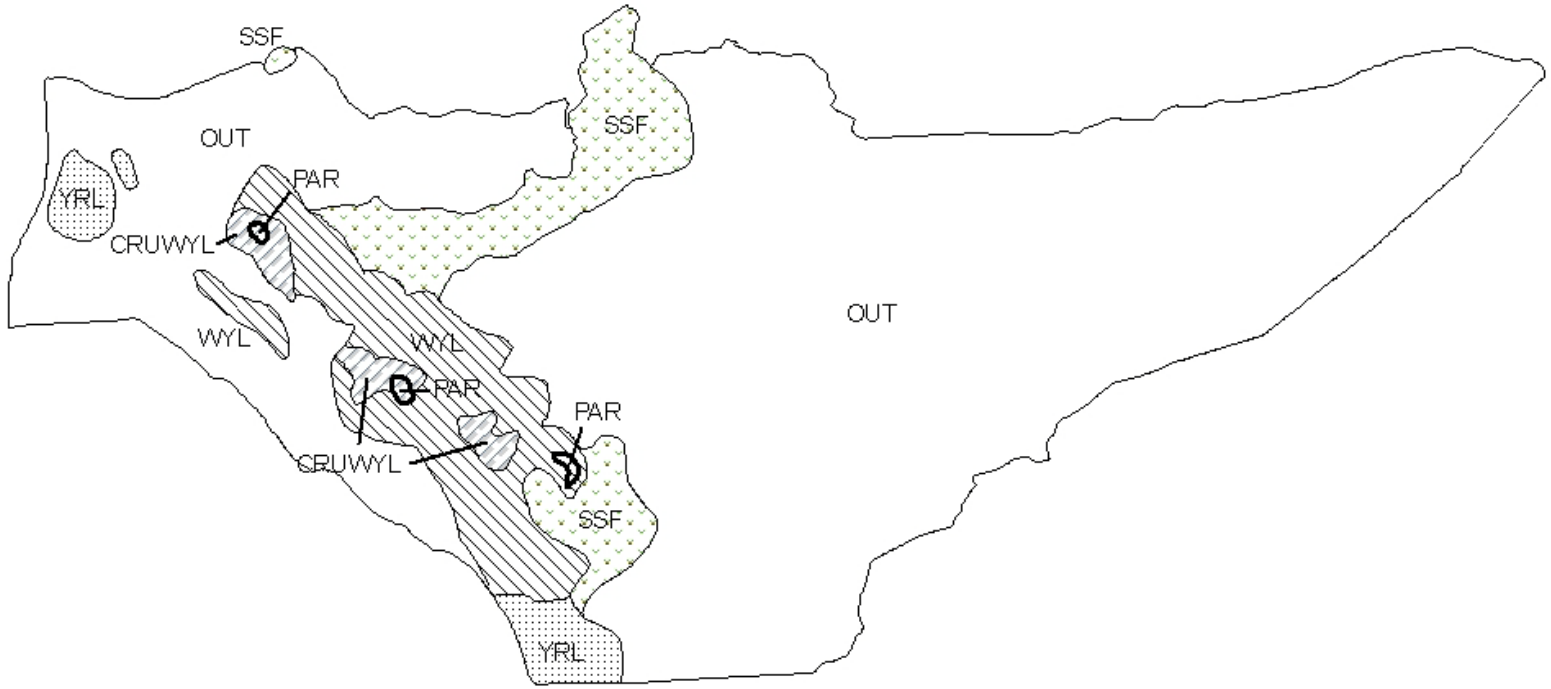
Population

We have very little data on this population. The general public provides a few reports during the summer and hunting seasons. Our field personnel make some effort to document the status of

segments of the herd during other big game surveys and an annual winter ground survey. Data are not adequate for developing a reasonable simulation model. Our observation data consistently document low lamb survival post-weaning. Poor habitat conditions, the lack of well-defined seasonal migrations, and perhaps lingering effects of Pasteurellosis or some other disease may be stagnating this population. We are unable to generate the effort needed to reliably estimate the population size of this sheep herd. Herd numbers are slightly up from 2010 but overall continue to stay depressed. During 2011 fall classifications personnel accounted for 34 different sheep. These included 4 rams, 22 ewes and 8 lambs. This is an increase from the previous year by 5 ewes and 4 lambs. In the 2011-2012 winter helicopter surveys during the Platte Valley Deer Sightability Study, personnel observed a similar number of sheep to that observed during deer and elk classification flights.

Harvest

The combined Areas 18, 21 seasons harvested 1 ram in Area 18 in 2010. The season was closed in 2011.



BHS516 - Douglas Creek
HA 18
Revised 7/02

2011 - JCR Evaluation Form

SPECIES: Bighorn Sheep | PERIOD: 6/1/2011 - 5/31/2012

HERD: BS517 - LARAMIE PEAK

HUNT AREAS: 19 | PREPARED BY: MARTIN HICKS

	2006 - 2010 Average	2011	2012 Proposed
Population:	0	N/A	N/A
Harvest:	6	6	8
Hunters:	7	7	8
Hunter Success:	86%	86%	100 %
Active Licenses:	7	7	8
Active License Percent:	86%	86%	100 %
Recreation Days:	66	66	66
Days Per Animal:	11	11	8.2
Males per 100 Females	48	49	
Juveniles per 100 Females	32	33	

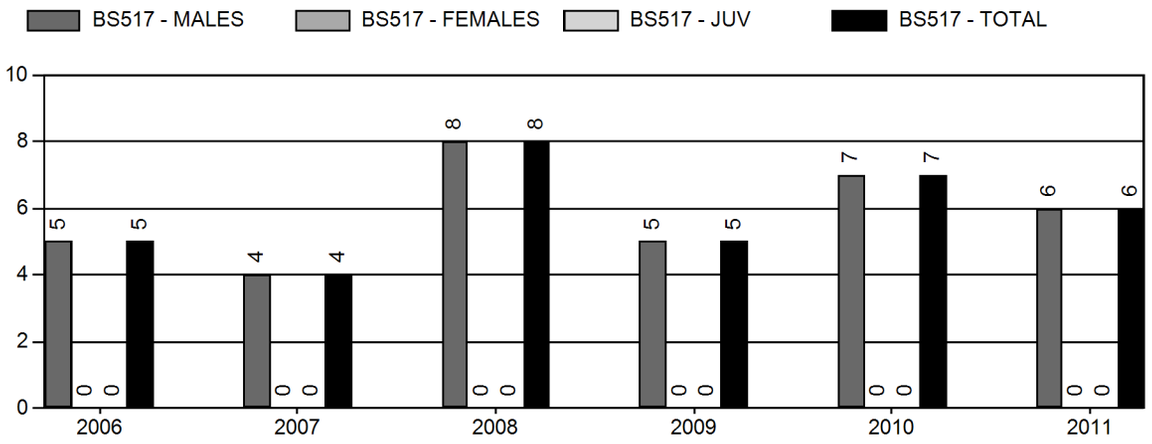
Population Objective:	500
Management Strategy:	Special
Percent population is above (+) or below (-) objective:	N/A%
Number of years population has been + or - objective in recent trend:	0
Model Date:	None

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

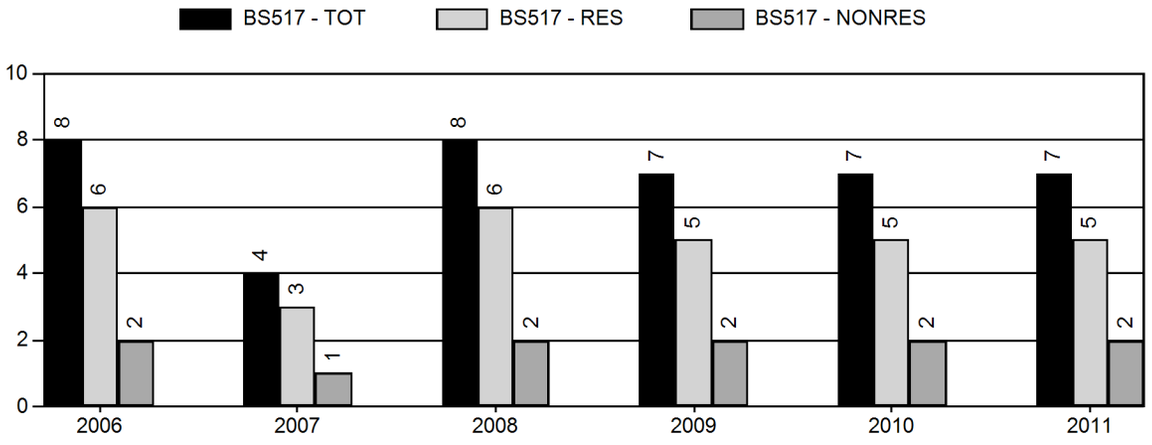
	JCR Year	Proposed
Females ≥ 1 year old:	NA%	NA%
Males ≥ 1 year old:	NA%	NA%
Juveniles (< 1 year old):	NA%	NA%
Total:	NA%	NA%
Proposed change in post-season population:	NA%	NA%

Population Size - Postseason

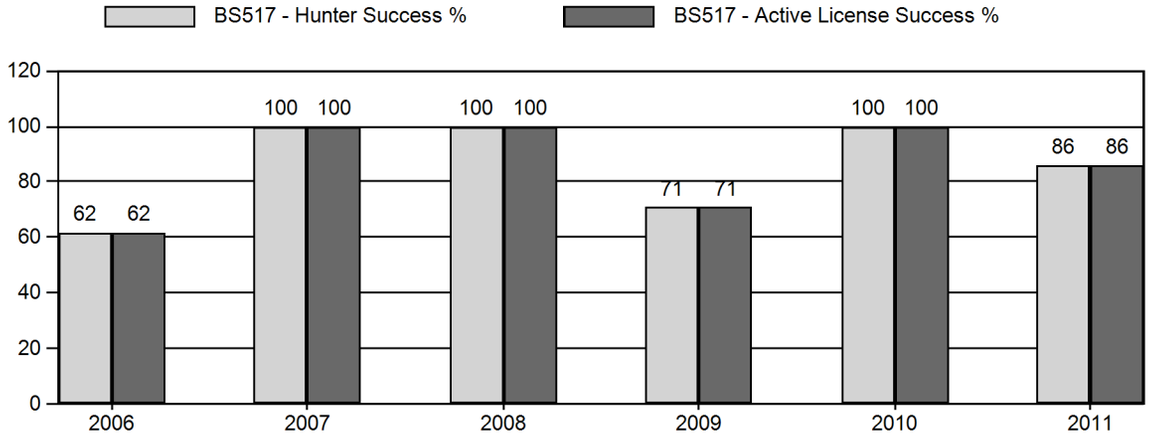
Harvest



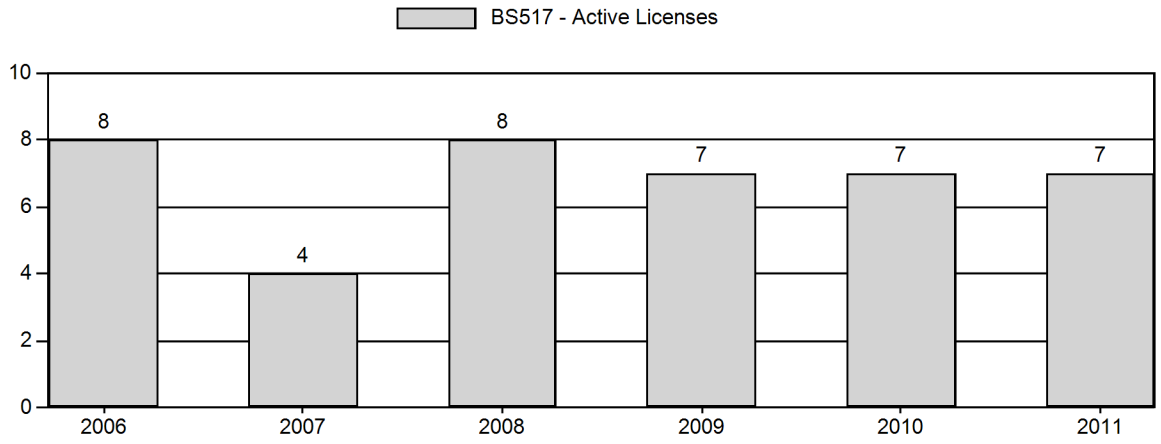
Number of Hunters



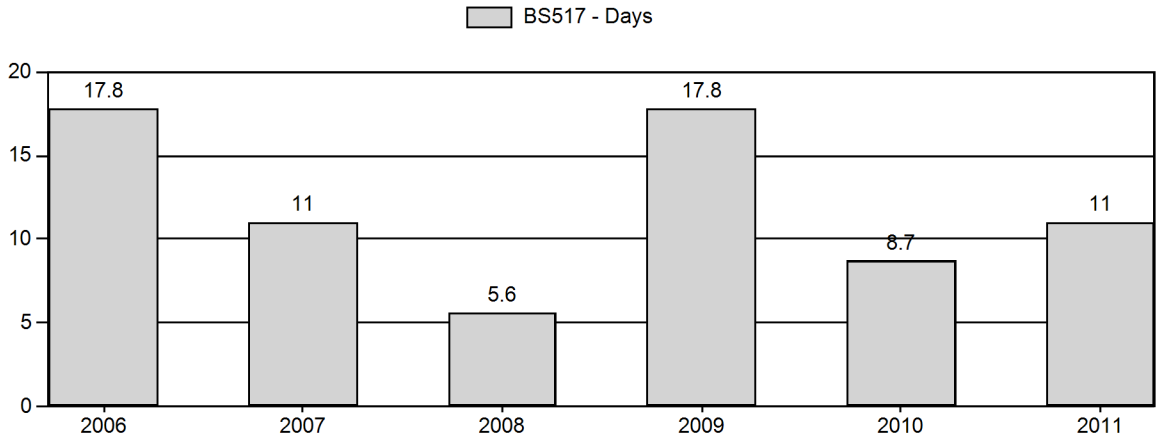
Harvest Success



Active Licenses

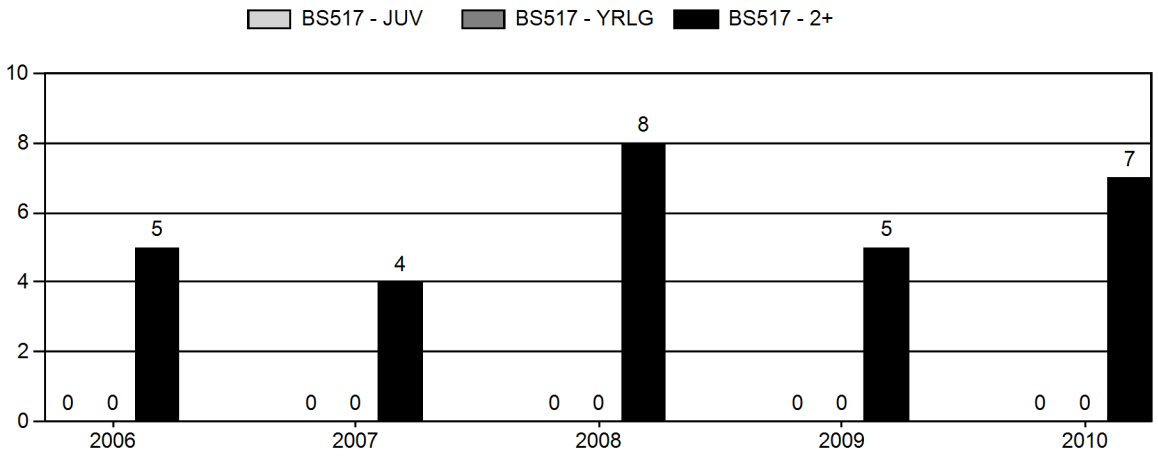


Days per Animal Harvested

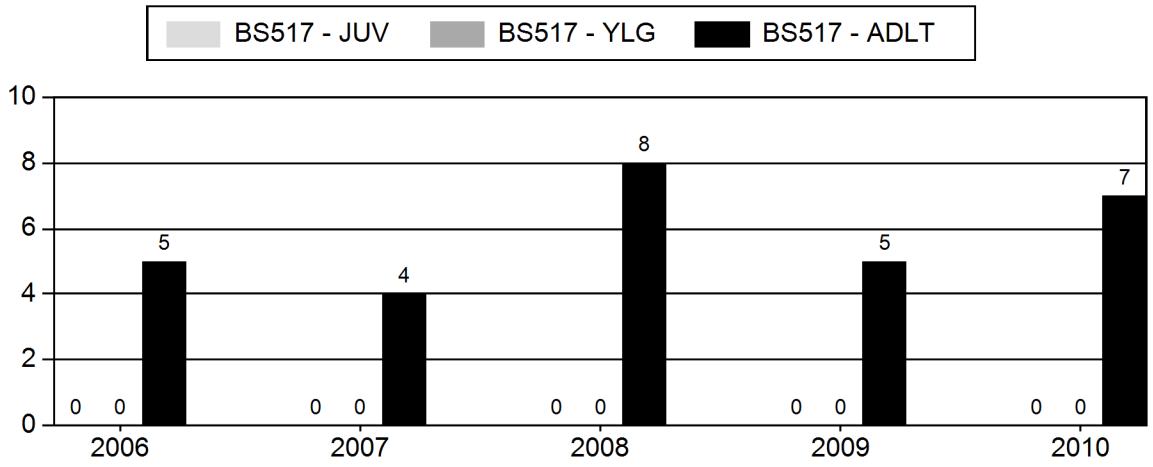


Postseason Animals per 100 Females

Age Structure of Field Checked Males



Age Structure Data (Field and Laboratory) - Male



2006 - 2011 Postseason Classification Summary

for Bighorn Sheep Herd BS517 - LARAMIE PEAK

		MALES				FEMALES		JUVENILES				Males to 100 Females				Young to		
Year	Post Pop	Ylg	Adult	Total	%	Total	%	Total	%	Tot Cls	Cls Obj	Ylng	Adult	Total	Conf Int	100 Fem	Conf Int	100 Adult
2006	0	7	9	16	20%	53	66%	11	14%	80	0	13	17	30	± 9	21	± 7	16
2007	0	2	19	21	28%	40	54%	13	18%	74	0	5	48	52	± 0	32	± 0	21
2008	0	3	26	29	26%	65	58%	19	17%	113	0	5	40	45	± 0	29	± 0	20
2009	0	3	33	36	28%	67	52%	26	20%	129	0	4	49	54	± 0	39	± 0	25
2010	0	3	23	26	32%	39	49%	15	19%	80	0	8	59	67	± 0	38	± 0	23
2011	0	4	20	24	27%	49	55%	16	18%	89	0	8	41	49	± 0	33	± 0	22

2011 HUNTING SEASONS

BS517 - LARAMIE PEAK

Hunt Area	Add'l Hunt Areas	Type	Quota	Season Dates	Limitations
19		ARCH		08/15 - 08/31	Refer to Section 3 of this Chapter
19		Type 1	8	09/01 - 10/31	Any

Table 1. BHS 517 Harvest Data, 2011.

Area	Type	Active Lic/Htrs	Ram	Ewe	Lamb	Total	Success	Days/Harve	Days	Licenses Sold
2011										
19 LARAMIE PEAK										
	Type 1	7		6	0	0	6	85.70%	11	66	8
Pooled Total		7 (7)*		6	0	0	6	85.70% (85.7%)*	11	66	
Pooled Resident		5		4	0	0	4	80%	13.5	54	
Pooled Nonresident		2		2	0	0	2	100%	6	12	
2011 Hunt Area Total		7 (7)*		6	0	0	6	85.70% (85.7%)*	11	66	8
2011 Herd Total		7 (7)*		6	0	0	6	85.70% (85.7%)*	11	66	8

*Active Licenses

2006 - 2011 Harvest Age Structure

for Bighorn Sheep Herd BS517 - LARAMIE PEAK

	Males										Females										Herd
Year	Juv	1	% 1 *	2	3 ^	% 3 **	Total Aged ++	Not Aged +++	Unk	Total Chkd	Juv	1	% 1 *	2	3 ^	% 3 **	Total Aged ++	Not Aged +++	Unk	Total Chkd	Total
2006	0	0	0%	0	5	100%	5	0	0	5	0	0	0%	0	0	0%	0	0	0	0	5
2007	0	0	0%	0	4	100%	4	0	0	4	0	0	0%	0	0	0%	0	0	0	0	4
2008	0	0	0%	0	8	100%	8	0	0	8	0	0	0%	0	0	0%	0	0	0	0	8
2009	0	0	0%	0	5	100%	5	0	0	5	0	0	0%	0	0	0%	0	0	0	0	5
2010	0	0	0%	0	7	100%	7	0	0	7	0	0	0%	0	0	0%	0	0	0	0	7

* Percent of aged animals (including unaged adults but excluding juveniles) 1 1/2 years old

^ Number of animals three years old and older. Animals aged older than three (excluding unaged adults) are lumped into this three plus category

** Percent of aged animals (not including juveniles or unaged adults) three years old or older

++ includes juveniles

+++ Unaged adults - unaged animals older than yearlings

LARAMIE PEAK BIGHORN SHEEP (BHS517)
HUNT AREA 19
2012 PROPOSED HUNTING SEASONS

HUNT AREA	TYPE	OPENS	CLOSES	LIMITATIONS
19	1	SEPT. 1	OCT. 31	L.Q.; 8 licenses any ram
ARCHERY				
19		AUG. 15	AUG. 31	Refer to Section 3 of this Chapter

CHANGES FOR 2012

There are no changes for the 2012 Season, however there will be one carry over license from the 2011 season for a total of 9 Type 1 licenses.

Management Evaluation

Population: The population objective for the Laramie Peak Bighorn Sheep Herd Unit is 500 wild sheep. The population estimate of 250 bighorn sheep is based on pre- and post-season herd composition surveys (conducted from the ground and air).

Lamb recruitment continues to improve compared to ratios observed prior to the 2007 transplant. In 2011 the lamb ratio of 33 lambs:100 ewes was slightly higher than the five-year average of 31 lambs:100 ewes. There have been no rams harvested from the Montana augmentation (rams had ear tags in both ears, marking the animals). There have also been no documented reports of pneumonia outbreaks.

At the time of this report (July 2012), there has been over 106,000 acres burned within the Laramie Range (Cow Camp Fire=8,500 acres, Russell Camp Fire=5,400 acres, Arapahoe Fire=93,000 acres). A majority falls within occupied bighorn sheep habitat, particularly the North Laramie/Bearhead Mt Sub herds. The Arapahoe Fire is only 30% contained, and has burned extremely hot most likely sterilizing the soil on south and east slopes. Post-fire rehabilitation remains unknown at this time, but it is expected that there will be noxious weed outbreaks (e.g. cheatgrass, *Bromus tectorum* and Canada thistle, *Cirsium arvense*) throughout the majority of the burned area. Based on Sawyer's (2009) study of mountain sheep selection patterns within the Laramie Range, it is expected that these fires will improve overall habitat suitability for wild sheep.

The rest of the herd unit is experiencing above average drought conditions and will most likely see a decrease in lamb survival.

2011 Season: In 2011, only 6 of the 8 sheep were harvested. One hunter was looking for a ten plus year-old ram and passed up on numerous younger rams. The second hunter received a carryover license for medical reasons and therefore will hunt in 2012, putting 9 licensed hunters in the field.

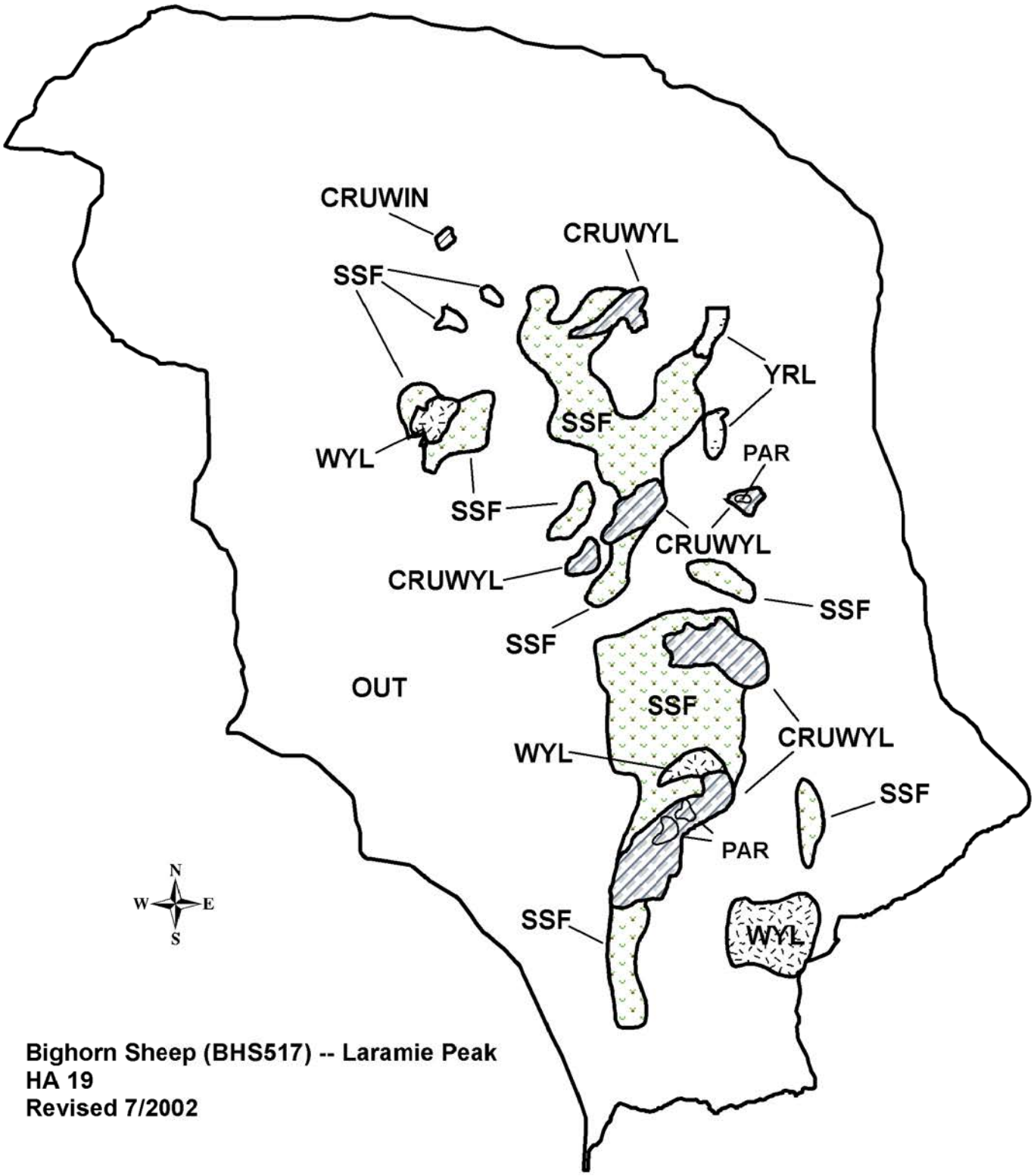
Harvest in 2011 was spread out over the herd unit. There were three rams harvested in the North Laramie sub herd, one ram harvested in the Sybille Canyon sub herd, and two rams harvested in the Duck Creek sub herd.

The average age of the rams harvested in 2011 was 6.6 years, which was lower than the five-year average of 8.5 years. Based on conversations with hunters they appeared to be not as selective this year due to time constraints and other hunting obligations (one hunter also drew a moose tag).

2012 Season: Based on 2011 ram ratios (49 rams:100 ewes), it is expected that hunters should have a good chance of finding a mature ram to harvest in 2012. However, given extreme drought conditions and fire activity, sheep distribution could negatively affect hunters' ability to find sheep in traditional locations. Mature rams that are historically located within the North Laramie drainage will be displaced from Sellers Mountain downstream to Indian Head Rock (approximately 17 miles of river) if the area does not receive summer/fall precipitation. Other subherds are experiencing above average drought conditions and will most likely affect lamb survival and movement patterns.

Literature Cited:

Sawyer, H., R. Nielson, and M. Hicks. 2009. Distribution and habitat selection patterns of mountain sheep in the Laramie Range. Western Ecosystems Technology, Inc. Cheyenne, Wyoming.



Bighorn Sheep (BHS517) -- Laramie Peak
HA 19
Revised 7/2002

2011 - JCR Evaluation Form

SPECIES: Bighorn Sheep | PERIOD: 6/1/2011 - 5/31/2012

HERD: BS519 - ENCAMPMENT RIVER

HUNT AREAS: 21 | PREPARED BY: WILL SCHULTZ

	2006 - 2010 Average	2011	2012 Proposed
Population:	0	N/A	N/A
Harvest:	0	0	2
Hunters:	0	0	2
Hunter Success:	0%	0%	100%
Active Licenses:	0	0	2
Active License Percent:	0%	0%	100%
Recreation Days:	1	0	2
Days Per Animal:	0	0	1
Males per 100 Females	52	83	
Juveniles per 100 Females	23	25	

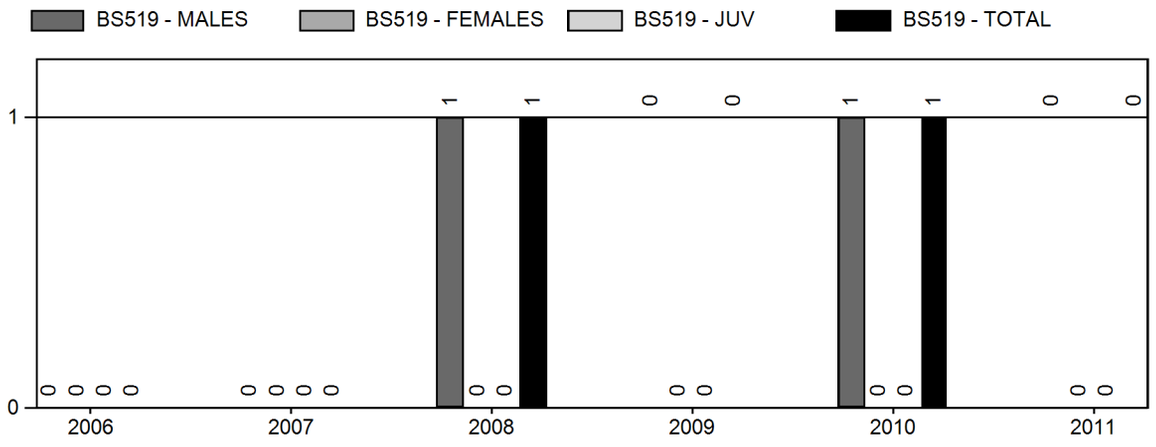
Population Objective:	200
Management Strategy:	Special
Percent population is above (+) or below (-) objective:	N/A%
Number of years population has been + or - objective in recent trend:	25
Model Date:	None

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

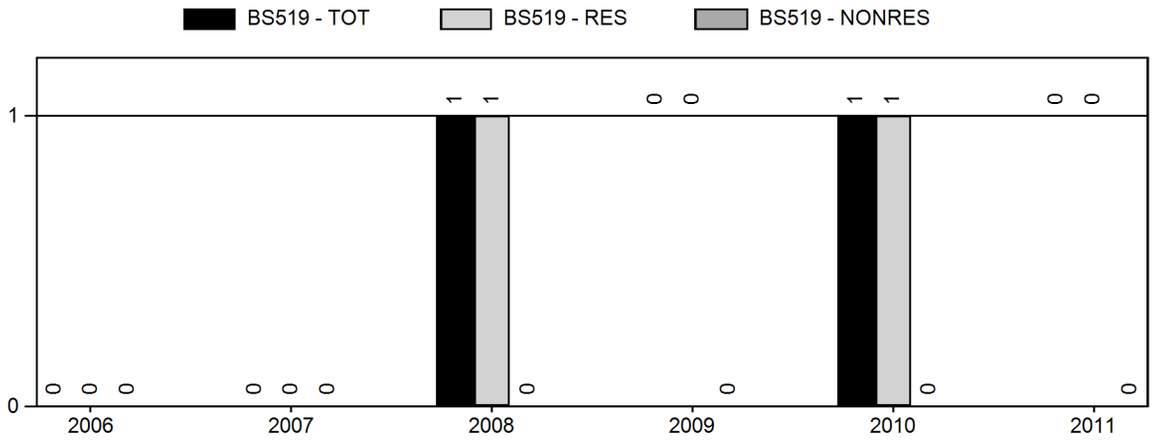
	JCR Year	Proposed
Females ≥ 1 year old:	NA%	NA%
Males ≥ 1 year old:	NA%	NA%
Juveniles (< 1 year old):	NA%	NA%
Total:	NA%	NA%
Proposed change in post-season population:	NA%	NA%

Population Size - Postseason

Harvest

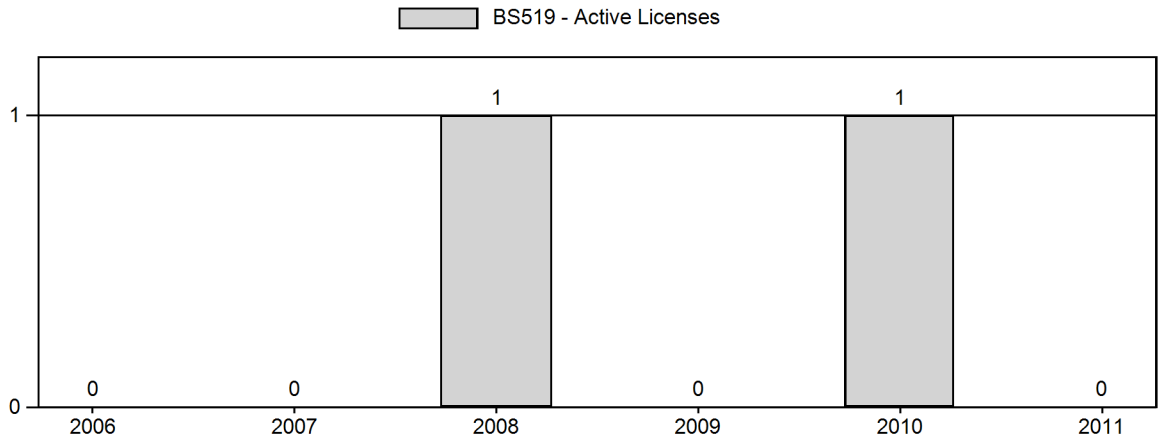


Number of Hunters

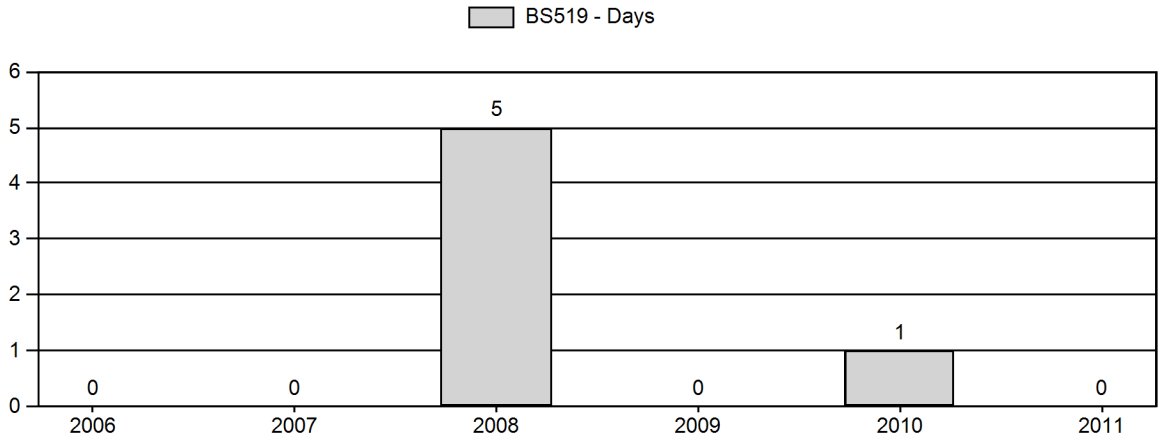


Harvest Success

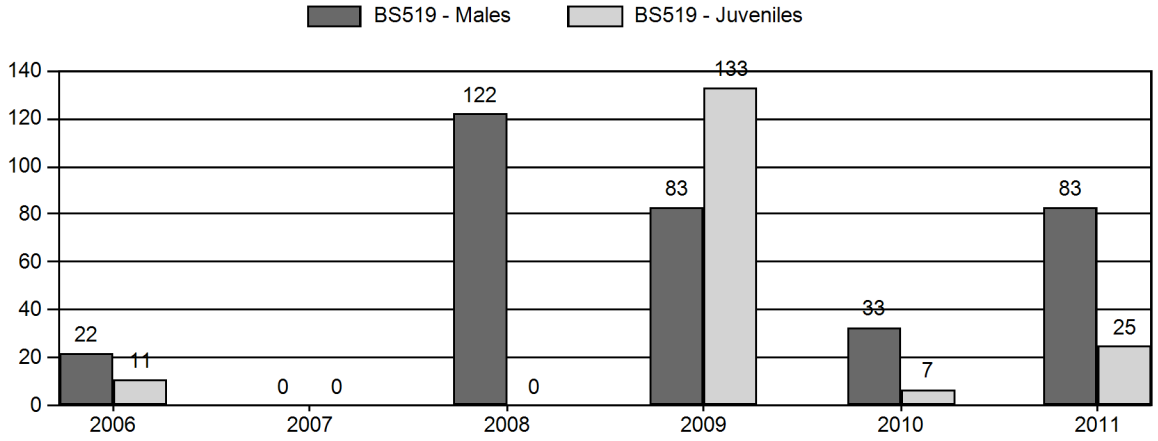
Active Licenses



Days per Animal Harvested

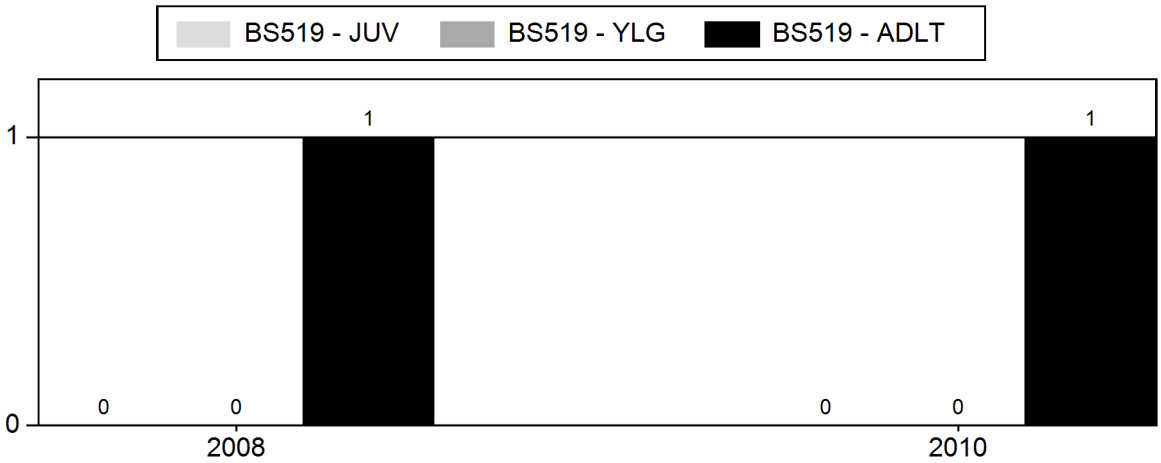


Postseason Animals per 100 Females



Age Structure of Field Checked Males

Age Structure Data (Field and Laboratory) - Male



2006 - 2011 Postseason Classification Summary

for Bighorn Sheep Herd BS519 - ENCAMPMENT RIVER

		MALES				FEMALES		JUVENILES				Males to 100 Females				Young to		
Year	Post Pop	Ylg	Adult	Total	%	Total	%	Total	%	Tot Cls	Cls Obj	Ylng	Adult	Total	Conf Int	100 Fem	Conf Int	100 Adult
2006	0	2	2	4	17%	18	75%	2	8%	24	0	11	11	22	± 11	11	± 7	9
2007	0	0	0	0	0%	0	0%	0	0%	0	0	0	0	0	± 0	0	± 0	0
2008	0	1	10	11	55%	9	45%	0	0%	20	46	11	111	122	± 0	0	± 0	0
2009	0	0	5	5	26%	6	32%	8	42%	19	0	0	83	83	± 0	133	± 0	73
2010	0	0	5	5	24%	15	71%	1	5%	21	0	0	33	33	± 0	7	± 0	5
2011	0	0	10	10	40%	12	48%	3	12%	25	0	0	83	83	± 0	25	± 0	14

2011 HUNTING SEASONS

BS519 - ENCAMPMENT RIVER

Hunt Area	Add'l Hunt Areas	Type	Quota	Season Dates	Limitations
21		Type 1	0	09/01 - 09/01	Closed

2006 - 2011 Harvest Age Structure

for Bighorn Sheep Herd BS519 - ENCAMPMENT RIVER

	Males										Females										Herd
Year	**Juv**	**1**	**% 1 ***	**2**	**3 ^**	**% 3 ****	**Total Aged ++**	**Not Aged +++**	**Unk**	**Total Chkd**	**Juv**	**1**	**% 1 ***	**2**	**3 ^**	**% 3 ****	**Total Aged ++**	**Not Aged +++**	**Unk**	**Total Chkd**	**Total**
2008	0	0	0%	0	1	100%	1	0	0	1	0	0	0%	0	0	0%	0	0	0	0	1
2010	0	0	0%	0	1	100%	1	0	0	1	0	0	0%	0	0	0%	0	0	0	0	1

* Percent of aged animals (including unaged adults but excluding juveniles) 1 1/2 years old

^ Number of animals three years old and older. Animals aged older than three (excluding unaged adults) are lumped into this three plus category

** Percent of aged animals (not including juveniles or unaged adults) three years old or older

++ includes juveniles

+++ Unaged adults - unaged animals older than yearlings

Encampment River Bighorn Sheep (BS519)
Hunt Area 21
2012 Season Recommendations

Hunt Area	Type	Date of Seasons Opens	Closes	Limitations
18, 21	1	Sept. 1	Oct. 31	~~CLOSED~~ Limited quota; 2 licenses any ram (1 resident, 1 nonresident)
Archery				Refer to Section 3 of this Chapter

Summary of Proposed Changes in License Numbers

Hunt Area	Type	Change From 2011
18, 21	1	+2

Management Evaluation

Adequate classification data for this herd has been difficult to collect. A POP-II population model has not been constructed for this herd unit due to limited classification and survival information. Observations indicate that lamb survival is poor and this herd is declining. A review of the management objective, currently at 200 bighorn sheep, may be warranted.

2011 postseason classification observations were obtained while conducting a mule deer survey from a helicopter in February of 2012. The classification results were 10 adult rams, 12 adult ewes, and 3 lambs observed (Table 1.). Past postseason classification efforts returned similar results. Based on the trend of this classification data, a reasonable population estimate of 30-40 bighorn sheep should be considered for this herd unit.

(Table 1.) 2002-2011 Postseason Bighorn Sheep Classifications, Encampment River Herd Unit, Wyoming.

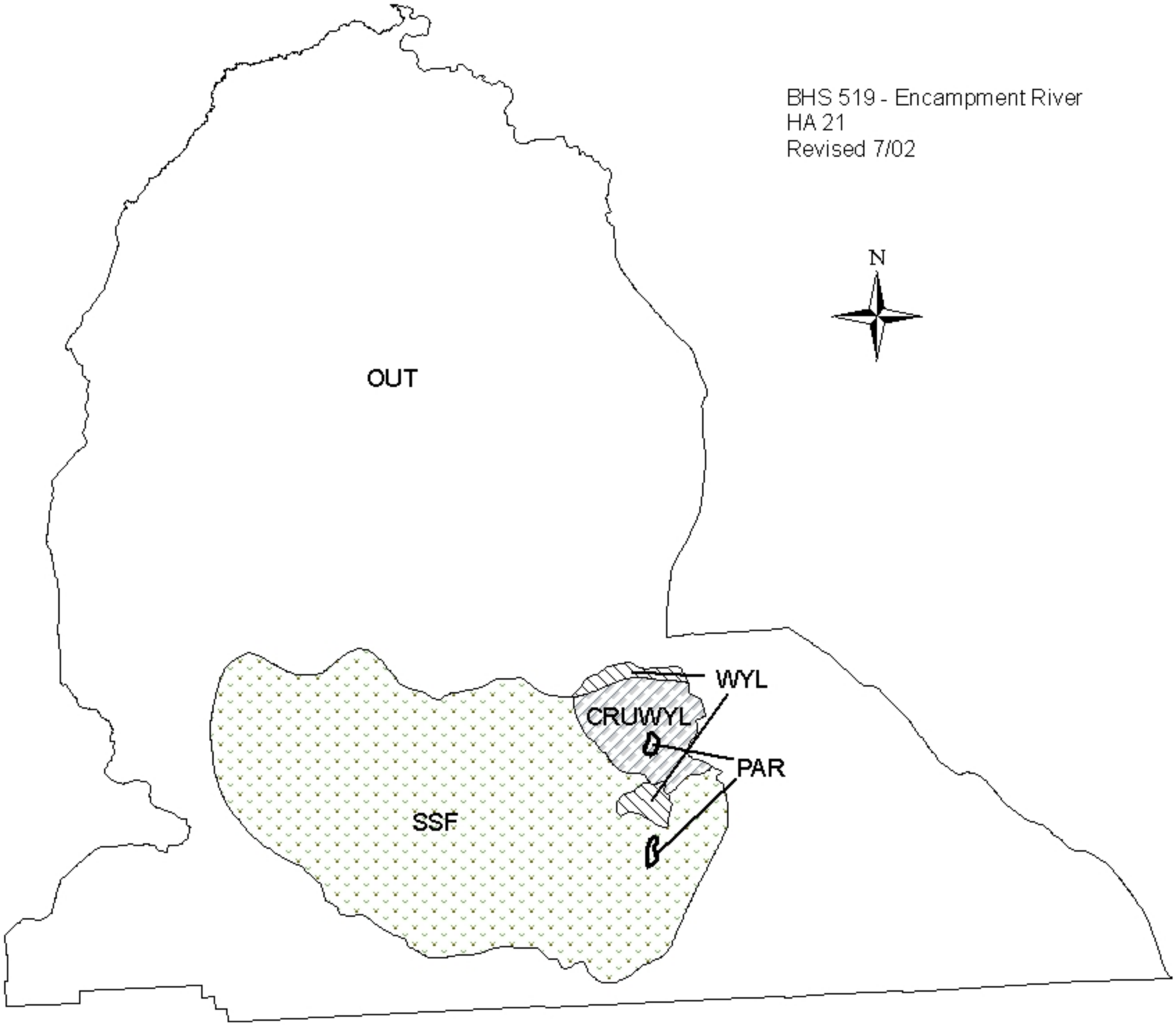
	RAMS			EWES	LAMBS	RAMS/100 EWES				
Year	Ylng	Adult	Total	Total	Total	Ylng	Adult	Total	LAMBS/100 EWES	SAMPLE SIZE
2002	0	0	5	5	4	0	0	100	80	14
2003	0	0	0	0	0	0	0	0	0	0
2004	0	3	3	0	0	0	0	0	0	3
2005	0	0	0	0	0	0	0	0	0	0
2006	2	2	4	18	2	11	11	22	11	24
2007	0	0	0	0	0	0	0	0	0	0
2008	1	10	11	9	0	11	111	122	0	20
2009	0	5	5	6	8	0	83	83	133	19
2010	0	5	5	15	1	0	33	33	7	21
2011	0	10	10	12	3	0	83	83	25	25

Harvest

In 2010, two licenses were offered for Hunt Areas 18 and 21 combined. One ram was harvested in each Hunt Area. There was no hunting season offered in this herd unit in 2011.

2012 Season Proposal

We propose to offer 2 licenses valid in both Hunt Area 18 and 21.


BHS 519 - Encampment River
HA 21
Revised 7/02
N
OUT
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PAR
SSF

APPENDICES

May 15, 2012 Appendix A

MEMORANDUM

TO: Brian Nesvik
Tom Ryder

FROM: Terry Creekmore

COPY TO: Rick King
File

SUBJECT: 2012 Laramie Region Winter Conditions Summary

2012 Laramie Region Winter Conditions Summary

Summary

This report details winter conditions in the Laramie Region during the period from October 2011 to April 2012. Snow water equivalent, departure from normal precipitation, percent of normal precipitation and departure from normal temperature data are included.

In the Laramie Region, the winter of 2011-2012 was characterized by below normal precipitation, below normal snow water equivalent and above normal temperatures. Winter mortalities of mule deer were negligible and pronghorn mortalities were less than are seen during a typical winter. Damage claims, which are often indicative of winter severity, were lower this winter than last year. Lack of significant snow fall allowed big game animals to disperse somewhat rather than crowd onto winter ranges or haystacks.

The overall outlook for big game in the Laramie Region is good. Good overwinter survival should benefit mule deer and pronghorn populations although poor precipitation to date may result in decreased habitat conditions at the lower elevations and may negatively impact winter range conditions in the future.

A series of photos taken on Pumpkin Vine Hill southeast of Laramie are indicative of winter snow conditions in the lower elevations of the Laramie Region.

Pumpkin Vine Hill, 7,767 feet

January 7, 2012

February 8, 2012

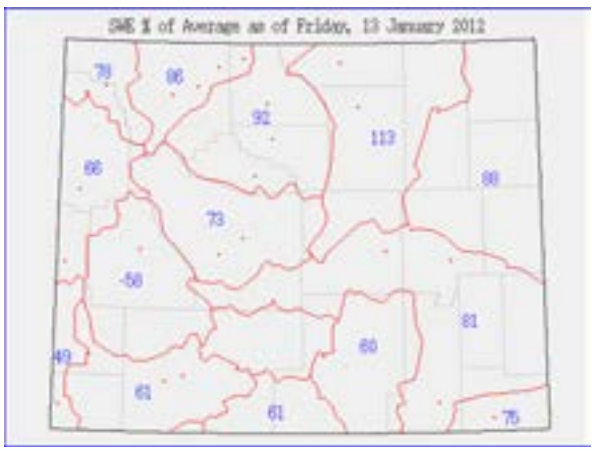
March 6, 2012

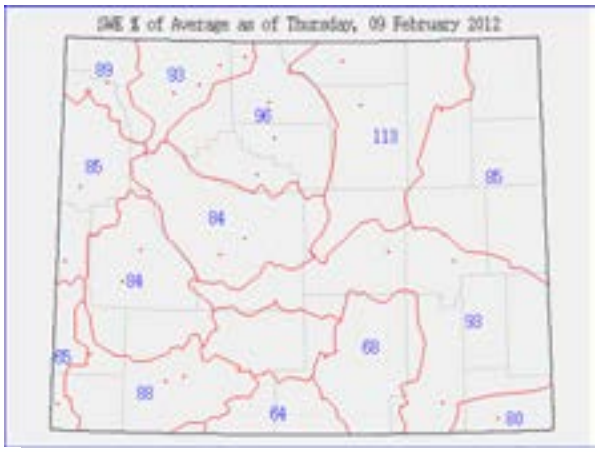
April 5, 2012

May 10, 2012

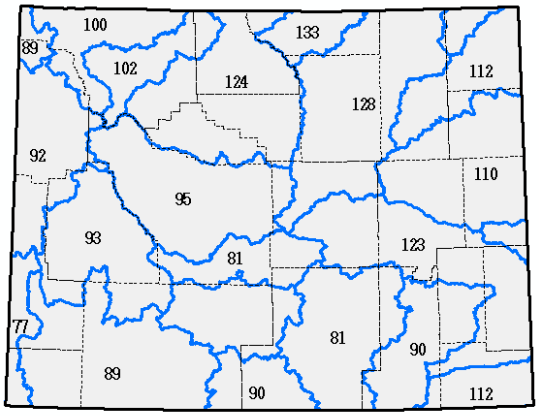
Snow water equivalent (SWE) was below average for the entire period spanning January 2011 to May 2012. During this period SWE for the Snowy Range was well below average (Range 25-81%) and as of May 15 was only 25% of average.

Snow water equivalent through May 15, 2012

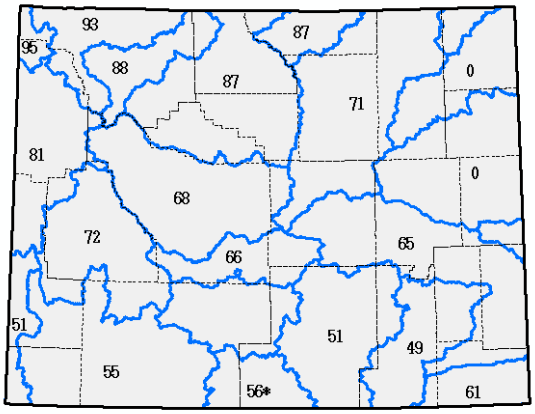




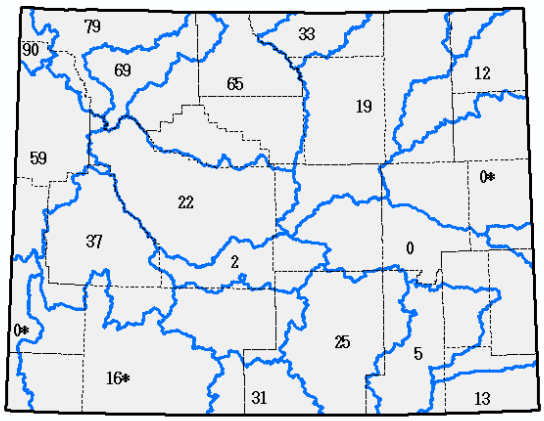
SWE % of Average as of Thursday, 08 March 2012



SWE % of Average as of Tuesday, 10 April 2012

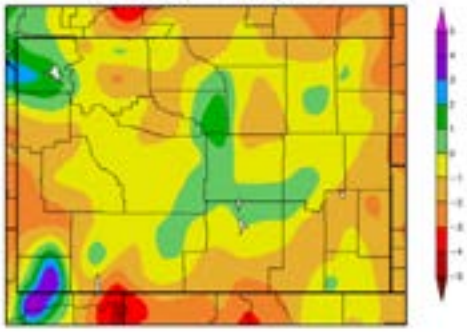


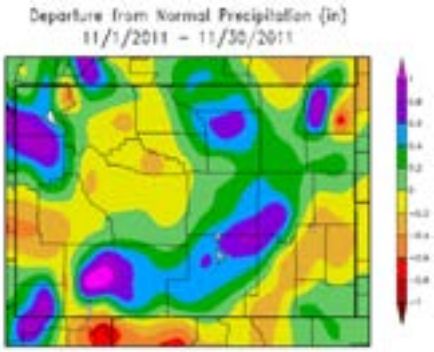
SWE % of Average as of Tuesday, 15 May 2012

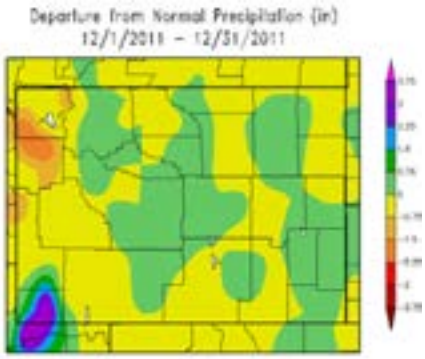


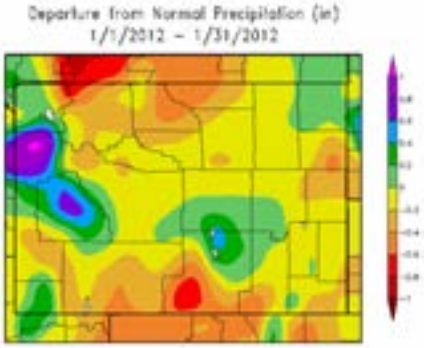
Departure from normal precipitation was near or below average for the entire period spanning January 2011 to April 2012. This is particularly evident during March 2012.

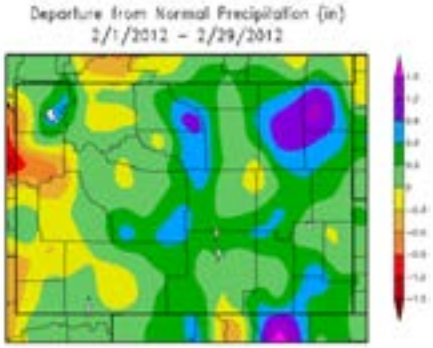
Departure from Normal Precipitation

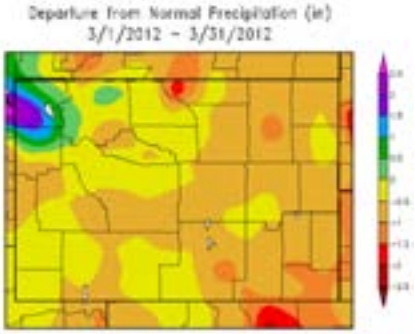






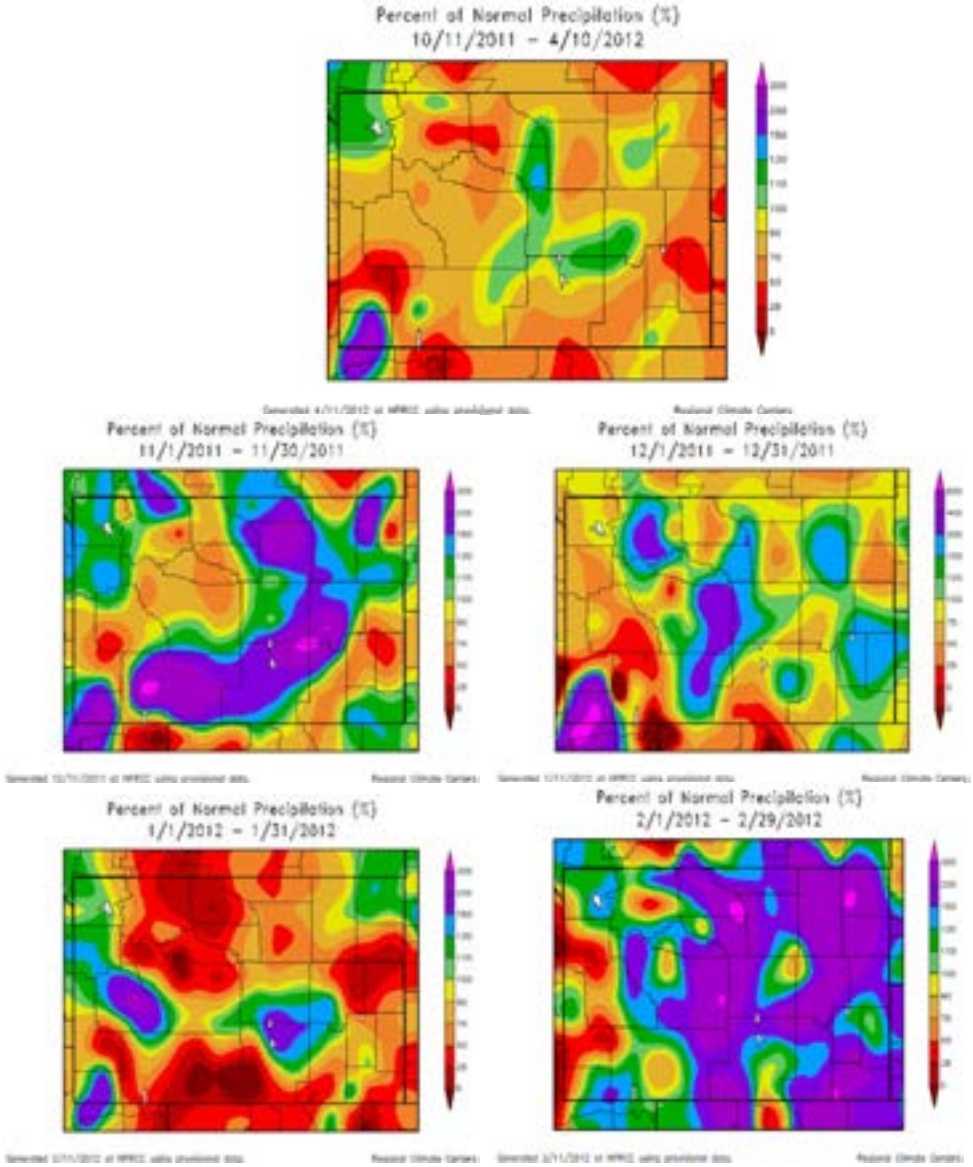


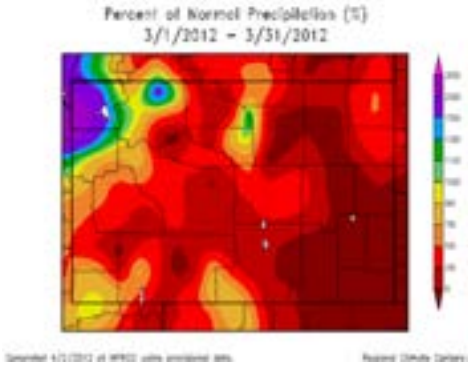




Percent of normal precipitation was below average for the entire period spanning January 2011 to April 2012. Above average precipitation during November and February failed to offset the lack of precipitation during January and in particular during March. This lack of precipitation during March contributed to the decline of the mean SWE for the Laramie Region from 94% on March 8 to 54% on April 10.

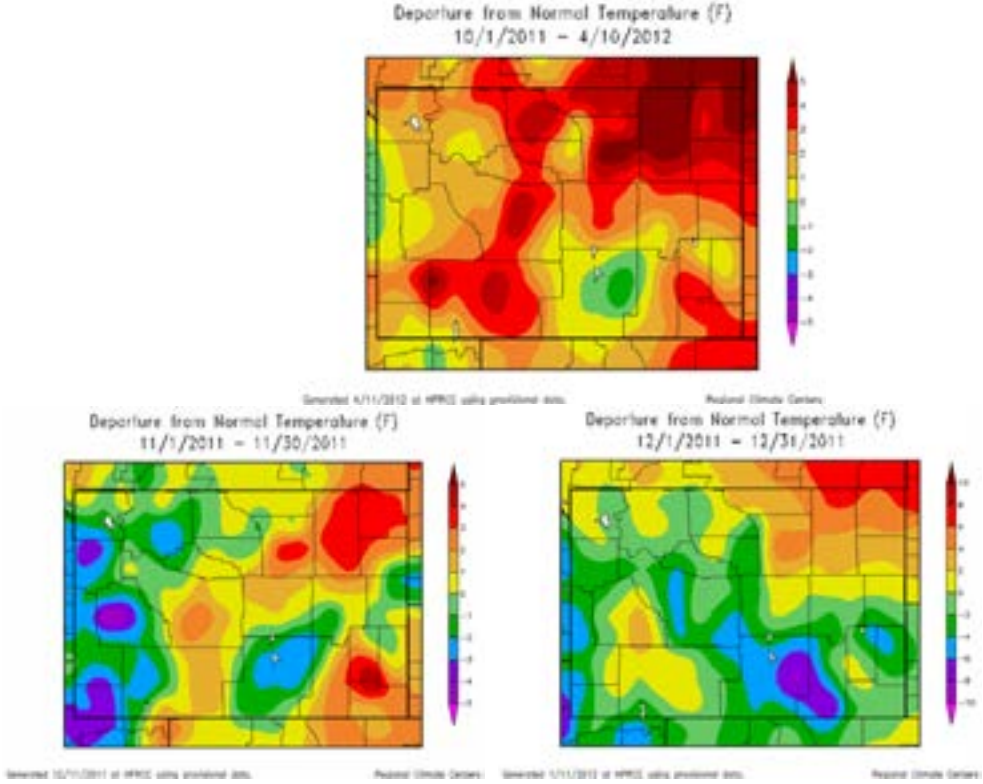
Percent of Normal Precipitation

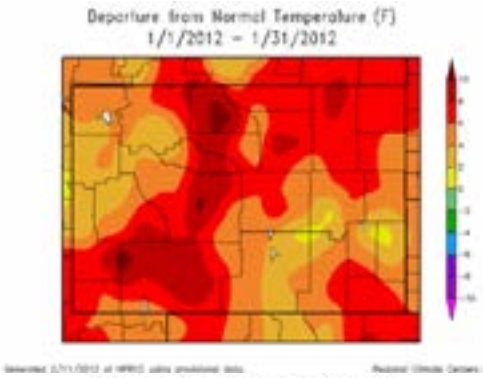


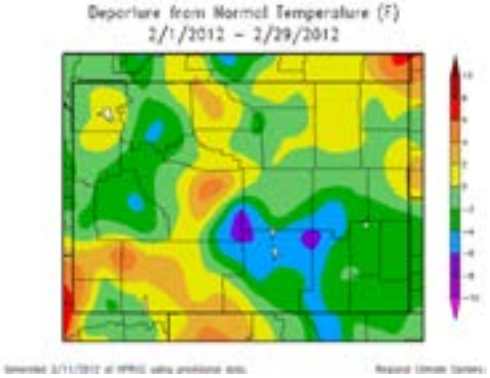


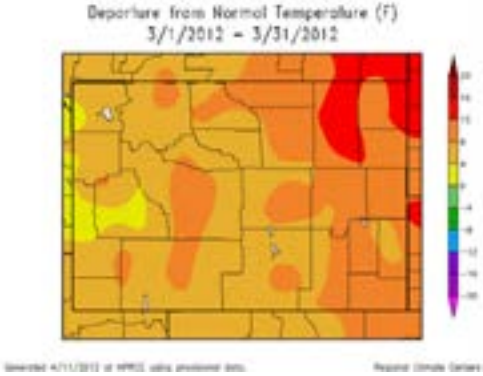
Departure from normal temperature maps indicate that the Laramie Region was above average for the entire period spanning January 2011 to April 2012. Slightly below normal temperatures during December and February contrast sharply with above normal temperatures during January and March.

Departure from Normal Temperature




Departure from Normal Temperature (F)
1/1/2012 – 1/31/2012


Departure from Normal Temperature (F)
2/1/2012 – 2/29/2012


Departure from Normal Temperature (F)
3/1/2012 – 3/31/2012