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Mule Deer

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2012 - JCR Evaluation Form

SPECIES: Mule Deer

PERIOD: 6/1/2012 - 5/31/2013

HERD: MD104 - SUBLETTE

HUNT AREAS: 130, 138-142, 146, 150-156, 162

PREPARED BY: DEAN CLAUSE

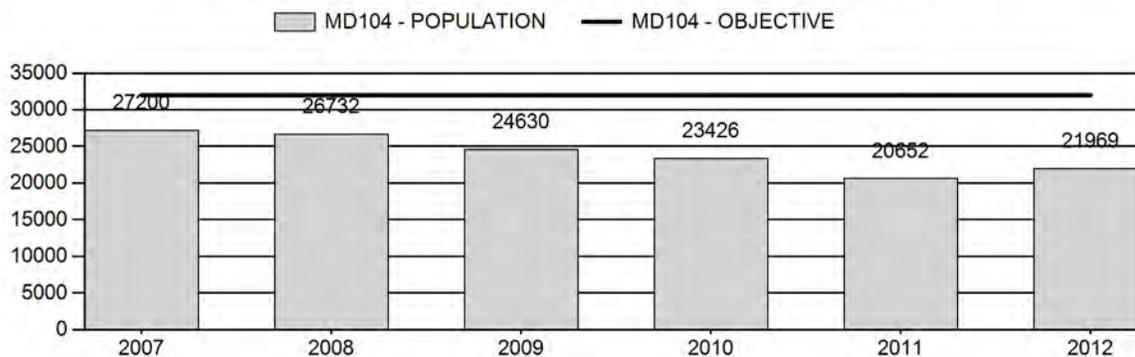
	<u>2007 - 2011 Average</u>	<u>2012</u>	<u>2013 Proposed</u>
Population:	24,528	21,969	21,385
Harvest:	1,838	1,297	1,350
Hunters:	4,787	3,808	3,900
Hunter Success:	38%	34%	35%
Active Licenses:	4,790	3,817	3,900
Active License Percent:	38%	34%	35%
Recreation Days:	28,142	21,617	21,600
Days Per Animal:	15.3	16.7	16
Males per 100 Females	37	36	
Juveniles per 100 Females	67	74	

Population Objective:	32,000
Management Strategy:	Special
Percent population is above (+) or below (-) objective:	-31.3%
Number of years population has been + or - objective in recent trend:	9
Model Date:	5/13/2013

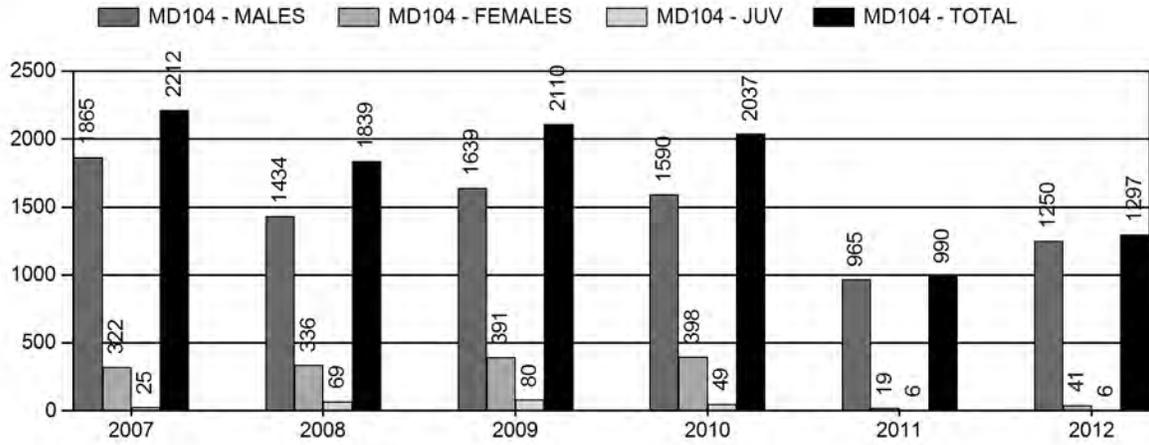
Proposed harvest rates (percent of pre-season estimate for each sex/age group):

	<u>JCR Year</u>	<u>Proposed</u>
Females ≥ 1 year old:	0.4%	0.4%
Males ≥ 1 year old:	27%	27%
Juveniles (< 1 year old):	<1%	<1%
Total:	5.5%	5.9%
Proposed change in post-season population:	+6%	-3%

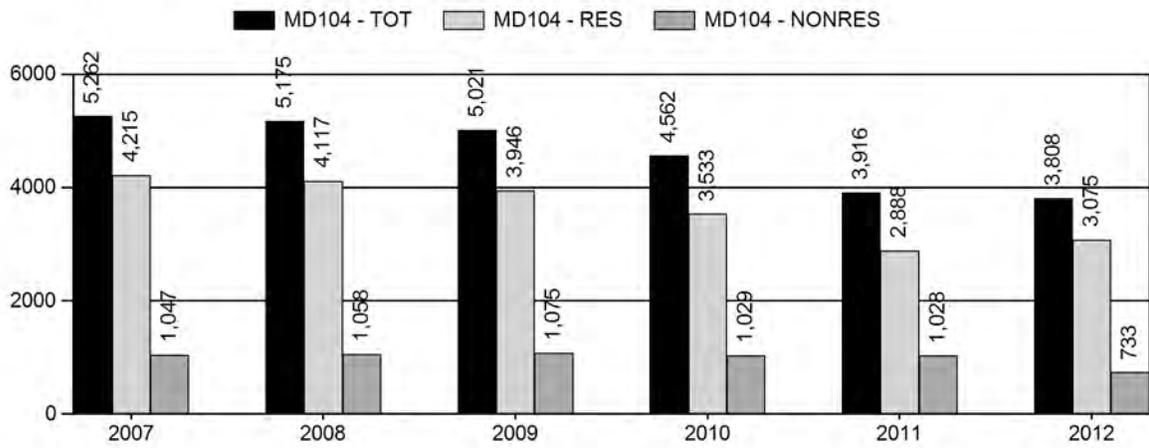
Population Size - Postseason



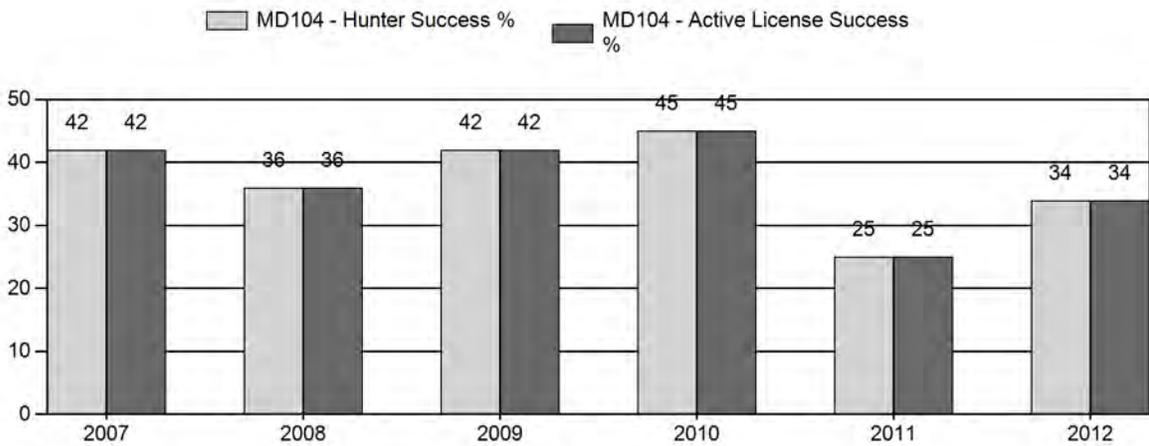
Harvest



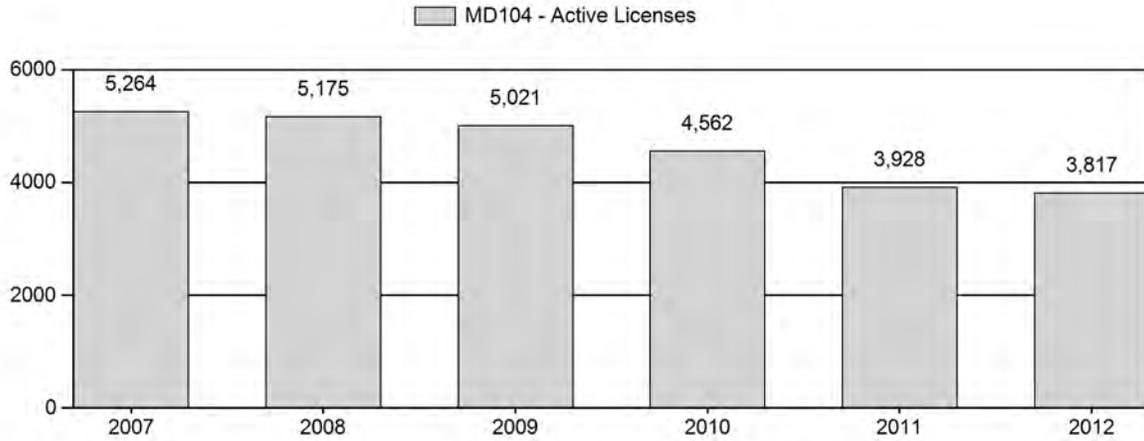
Number of Hunters



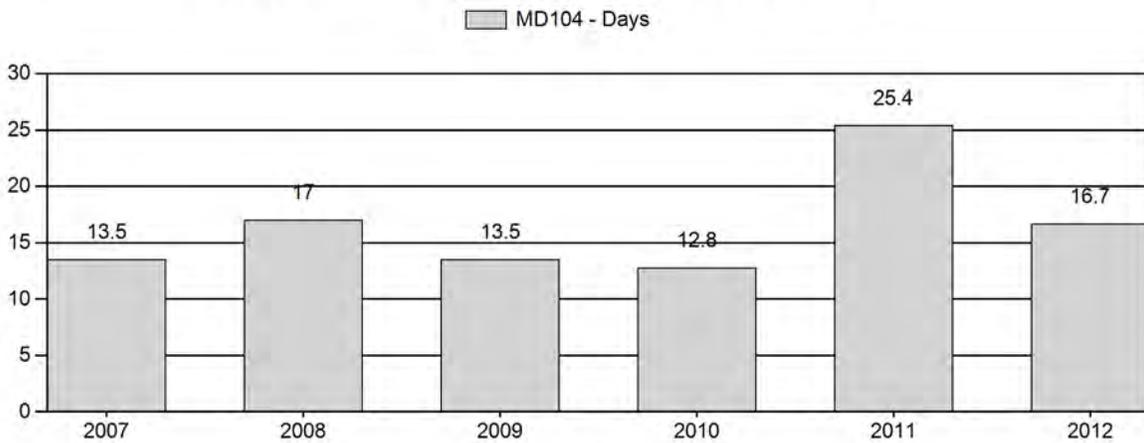
Harvest Success



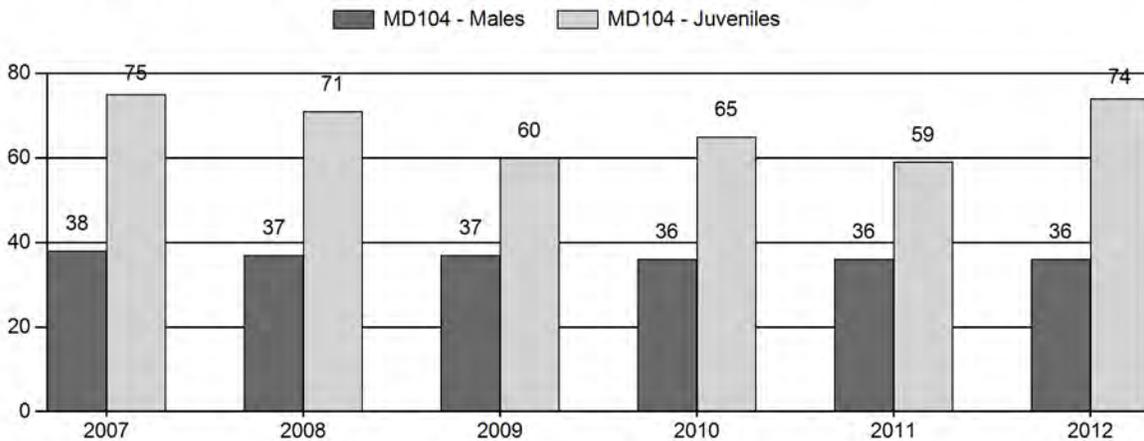
Active Licenses



Days per Animal Harvested



Postseason Animals per 100 Females



2007 - 2012 Postseason Classification Summary

for Mule Deer Herd MD104 - SUBLETTE

Year	Post Pop	MALES				FEMALES		JUVENILES		Tot Cls	Cls Obj	Males to 100 Females			Young to			
		Ylg	Adult	Total	%	Total	%	Total	%			Yng	Adult	Total	Conf Int	100 Fem	Conf Int	100 Adult
2007	27,200	822	1,112	1,934	18%	5,123	47%	3,861	35%	10,918	2,758	16	22	38	± 1	75	± 2	55
2008	26,732	621	945	1,566	18%	4,205	48%	2,967	34%	8,738	1,570	15	22	37	± 1	71	± 2	51
2009	24,630	576	1,143	1,719	19%	4,596	51%	2,758	30%	9,073	1,186	13	25	37	± 1	60	± 1	44
2010	23,426	549	1,156	1,705	18%	4,677	50%	3,043	32%	9,425	1,345	12	25	36	± 1	65	± 2	48
2011	20,652	173	894	1,067	18%	2,985	51%	1,747	30%	5,799	1,141	6	30	36	± 1	59	± 2	43
2012	21,969	357	890	1,247	17%	3,498	48%	2,598	35%	7,343	1,626	10	25	36	± 1	74	± 2	55

2013 Seasons - Sublette Mule Deer (MD104)

Hunt Area	Type	Opens	Closes	Quota	Limitations
130		Oct. 1	Oct. 6		General license; antlered mule deer or any white-tailed deer
	1	Oct. 15	Oct. 31	25	Limited Quota; antlered deer
	6	Oct. 15	Dec. 31	75	Limited Quota; doe or fawn valid in that portion of Area 130 on private lands within Sweetwater County.
138, 139, 140, 142	3	Oct. 1	Nov. 30	50	Limited quota; any white-tailed deer.
141, 162	1	Oct. 1	Oct. 21	100	Limited Quota; antlered deer
		Oct. 22	Oct. 31		Unused Areas 141, 162 Type 1 licenses valid for antlered deer on national forest
138, 139, 140, 142, 146, 151, 152, 153, 154, 155, 156		Sept. 15	Oct. 6		General license; antlered mule deer or any white-tailed deer
150		Sept. 15	Oct. 6		General license; antlered deer valid only in that portion of Area 150 west of Wyoming Highway 390
		Oct. 1	Oct. 6		General license; antlered deer valid in that portion of Area 150 east of Wyoming Highway 390, archery only
Archery Seasons					
130,141,162		Sept. 1	Sept. 30		Refer to Section 3
138-140, 142,153, 154,146, 150-156		Sept. 1	Sept. 14		Refer to Section 3

REGION H NON-RESIDENT QUOTA - 800 LICENSES

Hunt Area	License Type	Quota Changes from 2012
130	1	+5
130	6	+25
Herd Unit Total	1	+5
	6	+25

Management Evaluation

Current Postseason Population Management Objective: 32,000

Management Strategy: Special

2012 Postseason Population Estimate: ~22,000

2013 Proposed Postseason Population Estimate: ~21,500

The Sublette Mule Deer Herd Unit contains 2,682 square miles of habitat throughout Teton, Sublette, Lincoln and Sweetwater Counties. This deer herd contains 15 hunt areas (130, 138-142, 146, 150-156, 162) and is managed under special status which mandates postseason buck:100 doe ratios range between 30 to 45:100. The postseason population objective is 32,000 deer, adopted in 1991.

Herd Unit Issues

Winter survival, habitat condition and quality on winter ranges, and habitat loss (direct and indirect) from gas and residential development are the primary issues the influencing population dynamics in this herd unit. During the past 10 years, this deer herd experienced two winters that resulted in above normal fawn mortality (> 50% loss). Most recently, the 2010-11 winter fawn mortality estimates exceed 70%. Winter fawn mortality averages around 30% on most years when winter severity is moderate to average. Current annual growth on key browse species improved during 2008 and 2009, declined in 2010, improved again in 2011, and declined in 2012. Overall habitat conditions remain poor, but conditions have improved on certain years. Gas field development has and will continue to impact deer numbers within this herd unit. The Pinedale Anticline gas field development overlaps with crucial winter range located on the Mesa, where annual population estimates documented deer numbers have decline by 51% from 2001 – 2011. Studies have demonstrated that deer avoid areas with intensive winter gas development, resulting in less forage available for wintering deer within and adjacent to gas development.

Weather

With the overall large size of this herd unit, weather conditions can be somewhat different by geographic area (i.e. Wyoming Range Mountains vs. Wind River Mountains vs. Gros Ventre Mountains). In general, the overall amount of precipitation was below normal during 2009 and 2010, although spring moisture was good during those years resulting in improved forage production on winter range habitat. In 2011 winter and spring moisture was well above normal resulting in very good forage production. During 2012, severe drought conditions persisted through the entire year resulting in one of the worst production years, as several sagebrush monitoring locations had essentially no current annual growth. Of particular importance to this deer herd is shrub production on native winter ranges at lower elevations in the Upper Green River Basin. Late winter and spring precipitation (April to early June) is essential for good annual shrub production.

Habitat

The Pinedale Region has several shrub monitoring sites where production and utilization data is collected. Figure 1 shows average shrub production by species by year. The primary shrubs available on winter ranges within this herd unit are mountain and Wyoming sagebrush and bitterbrush. Shrub utilization has varied by year as winter snow conditions (depth and crusting) appear to influence winter shrub use by location. The 2011-12 winter was mild resulting in below normal utilization due to fewer deer, scattered distribution, and improved leader production. The 2012-13 winter thus far has also been mild, although shrub leader production was very poor and may negatively influence winter survival.

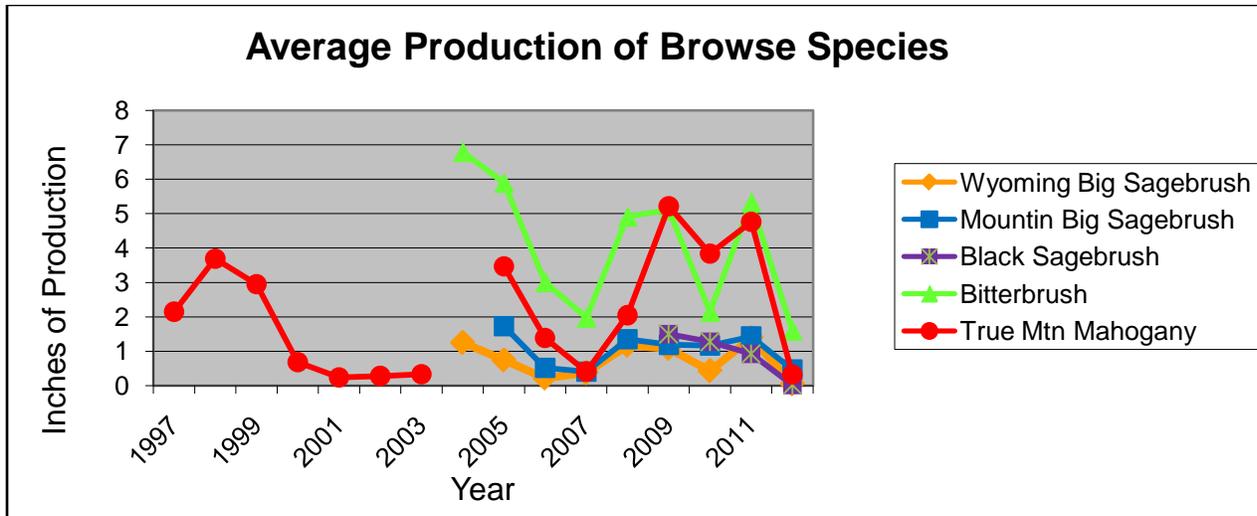


Figure 1. Shrub Production in the Upper Green River Basin, 1997-2012.

Please see the [2012 Annual Report Strategic Habitat Plan Accomplishments, Jackson and Pinedale Region sections](#) located at either the Jackson or Pinedale Game & Fish Regional Office for detailed summaries of habitat work within the Sublette Herd Unit.

Field Data

Postseason herd composition (classification) counts in early December 2012 totaled 7,343 deer, and increase from the 2011 total of 5,799, and a decrease from the 2010 total of 9,425 deer. Light to no snow cover existed during the 2012 survey, which led to a larger proportion of deer scattered at higher elevations and on northern parts of crucial winter habitats. With the exception of budget constraints reducing flight survey time by 4 hours during 2008, aerial survey flight time/coverage has remained similar over the years.

The postseason 2012 total buck:100 doe ratio of 36:100 and has changed very little since 2008 and is meeting management goals for this herd unit. Yearling buck:100 doe ratios in 2012 were 10:100 and typically is a good indicator of fawn survival the previous year. The low yearling buck ratio of 6:100 in 2011 is attributed to fawn loss (estimated around 70%) during the winter of 2010-11. Adult buck ratios also vary annually based on yearling buck recruitment and buck harvest levels. The 2012 adult buck: 100 doe ratio was 25.

The 2012 fawn: 100 doe ratio increased to 74:100 from 59:100 in 2011, and 65:100 in 2010. This improved fawn production along with decent winter survival should result in population growth in 2013.

Harvest Data

The 2012 harvest was approximately 1,300 total deer (1,250 bucks and 50 does/fawns), an increase from the 2011 harvest of 990 deer (965 bucks and 25 does/fawns). The 2011 harvest represents the lowest reported harvest in the past 15+ years. The hunting seasons in 2011 and 2012 were more conservative compared to previous years, as all doe/fawn harvest opportunities were eliminated (except for youth), season lengths were slightly shortened, and limited quota licenses (including non-resident quotas) were reduced for 2012. Harvest and hunter effort trends correlate well with estimated population trends as this deer population has steadily been decreasing, with a slight increase during 2012. Harvest rates vary among certain hunt areas, as hunting pressure is highest in Hunt Areas 142, 152, 153 and 154, partially attributed to higher deer densities and little to no wilderness area limitations.

Population

The WGFD changed modeling techniques for all of our big game herd units, effective July 2012. The new spreadsheet model designed by the Colorado Division of Wildlife uses harvest sex/age ratios, and survival data. The Time-Specific Juvenile and Constant Adult Survival (TSJ,CA) Model showed the best overall fit compared to the other models (Fit = 71 and Relative AICc = 161) resulting in a 2012 postseason population estimate of approximately 22,000. The TSJ,CA model appears to have a reasonable population estimate, in addition observed male:female ratios track very well. This 2012 population estimate is 31% below the desired objective of 32,000 for this herd unit.

Management Summary

The combination of fluctuating reproductive rates, fawn survival, natural gas development impacts on the Mesa winter complex, and habitat conditions are the primary factors regulating population trends in the Sublette herd unit. The winter/spring losses (fawns and adults) during 2010-11 dropped this population to one of lowest levels ever documented. In addition to years with large winter die-off, other population setbacks have been common in this herd and are primarily attributed to poor fawn survival and poor forage conditions on winter ranges. Overall habitat conditions remain poor, but conditions have improved in certain years. Although the current management direction is for maximum population growth (no female harvest), female harvest will be necessary at some point in the future to offset further degradation of crucial winter habitats and poor survival rates. Population estimates indicate the population is 31% below the objective of 32,000 and without multiple years of good forage production and over-winter fawn survival, this herd will most likely not gain any significant growth. Buck ratios are meeting herd goals (special status; 30-45 bucks:100 does), suggesting this herd should be able to sustain current harvest levels.

A general license deer season for most hunt areas (except Areas 141/162) will open on September 15, antlered only, and close October 6. Doe/fawn harvest opportunities will be the same as in 2012, as only youth hunters will be allowed to harvest doe/fawn deer. The same white-tailed deer season of 50 limited quota (Type 3) licenses valid for any white-tailed deer,

October 1 – November 30 in Areas 138-140, 142, and 143 is proposed. Limited quota (Type 1) licenses in hunt areas 141 and 162 will remain the same at 100 licenses. Limited quota (Type 1) licenses in hunt area 130 will increase to 25 (+5) licenses with an October 15 to October 31 season. A total of 75 (+25) limited quota doe/fawn licenses (Type 6) in Area 130 are available to address damage concerns on private lands near Farson. The nonresident Region H quota will remain at 800 licenses. The 2013 season is projected to harvest approximately 1,350 deer (1300 bucks, 50 doe/fawns), primarily focused on buck harvest opportunity, while allowing for population growth in this herd unit.

INPUT	
Species:	Deer
Biologist:	Dean Clause
Herd Unit & No.:	Sublette (MD104)
Model date:	5/13/2013 (Model#3)

Clear form

MODELS SUMMARY			Fit	Relative AICc	Notes
CJ,CA	Constant Juvenile & Adult Survival		409	418	
SCJ,SCA	Semi-Constant Juvenile & Semi-Constant Adult Survival		239	255	
TSJ,CA	Time-Specific Juvenile & Constant Adult Survival		76	161	

Year	Posthunt Population Est.		Trend Count	Predicted Prehunt Population		Predicted Posthunt Population		Total	Objective			
	Field Est	Field SE		Juveniles	Total Males	Juveniles	Total Males			Females	Total	
1993			6294	5284	4543	11155	20982	5235	3329	10461	19026	
1994			6699	7184	4990	10633	22808	7184	3529	10633	21347	
1995			6060	6716	5481	11103	23300	6716	4067	11103	21886	
1996			6507	7849	5233	10800	23882	7849	3633	10800	22283	
1997			7338	9151	5230	10900	25281	9151	4087	10882	24120	
1998			9309	8335	6440	11816	26591	8335	4402	11816	24654	
1999			8583	10406	7234	13100	30741	10385	4508	13075	27979	
2000			8742	12129	8245	15024	35398	12105	4955	14775	31835	
2001			11227	11123	8331	16102	35556	11053	5266	15692	32011	
2002			8399	9633	7482	15733	32849	9555	4487	14838	28881	
2003			10070	11192	6417	14608	32217	11154	4243	14272	29670	
2004			6699	8602	4905	12840	26346	8560	3047	12508	24115	
2005			8632	8248	5241	12727	26217	8192	3484	12538	24215	
2006			9132	9289	5201	12365	26824	9223	3500	11976	24699	
2007			10918	9772	6577	13284	29633	9745	4526	12930	27200	
2008			8738	9037	6504	13154	28755	9021	4927	12785	26732	
2009			9073	7524	6605	12822	26951	7436	4802	12392	24630	
2010			9425	7600	6030	12036	25667	7546	4281	11598	23426	
2011			5799	6228	4861	10651	21741	6221	3800	10630	20652	
2012			7343	7779	5106	10510	23396	7773	3731	10465	21969	
2013			8077	6962	5290	10619	22870	6951	3860	10575	21385	
2014			8077	6967	5313	10626	22906	6956	3883	10582	21421	
2015												
2016												
2017												
2018												
2019												
2020												
2021												
2022												
2023												
2024												
2025												

Survival and Initial Population Estimates

Year	Annual Juvenile Survival Rates		Annual Adult Survival Rates	
	Model Est.	Field Est.	Model Est.	Field Est.
1993	0.90		0.79	
1994	0.75		0.79	
1995	0.60		0.79	
1996	0.60		0.79	
1997	0.70		0.79	
1998	0.90	0.84	0.79	0.05
1999	0.90	0.80	0.79	0.05
2000	0.73	0.83	0.79	0.06
2001	0.60	0.79	0.79	0.04
2002	0.60	0.79	0.79	0.04
2003	0.28	0.81	0.79	0.06
2004	0.66	0.91	0.79	0.04
2005	0.60	0.71	0.79	0.07
2006	0.83	0.79	0.79	0.07
2007	0.60	0.78	0.79	0.07
2008	0.60	0.88	0.79	0.05
2009	0.60	0.83	0.79	0.05
2010	0.39		0.79	
2011	0.67		0.79	
2012	0.60		0.79	
2013	0.65		0.79	
2014	0.65		0.79	
2015	0.65			
2016				
2017				
2018				
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2023				
2024				
2025				

Parameters:

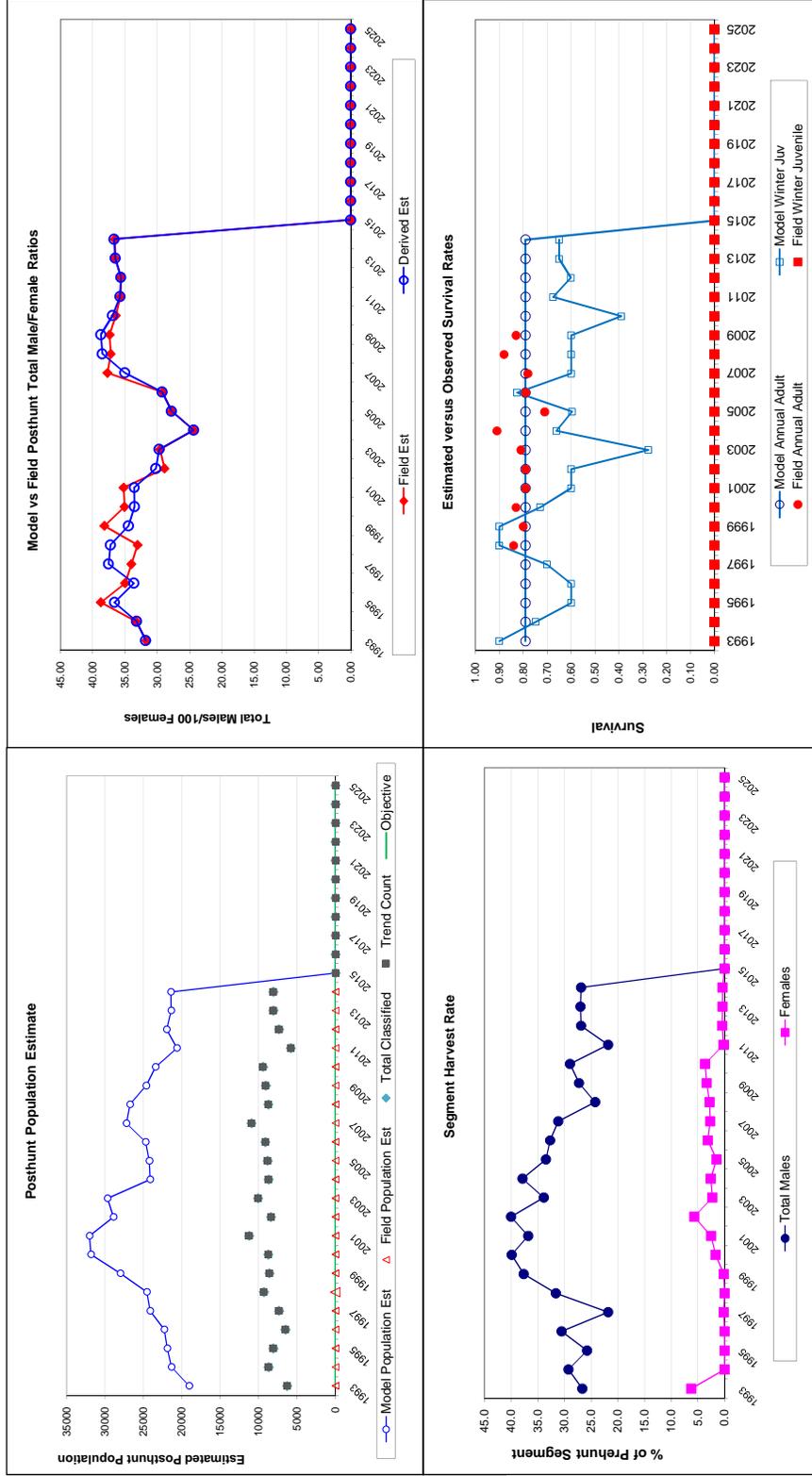
Adult Survival =	0.791
Initial Total Male Pop/10,000 =	0.333
Initial Female Pop/10,000 =	1.046

MODEL ASSUMPTIONS

Sex Ratio (% Males) =	50%
Wounding Loss (total males) =	10%
Wounding Loss (females) =	10%
Wounding Loss (juveniles) =	10%

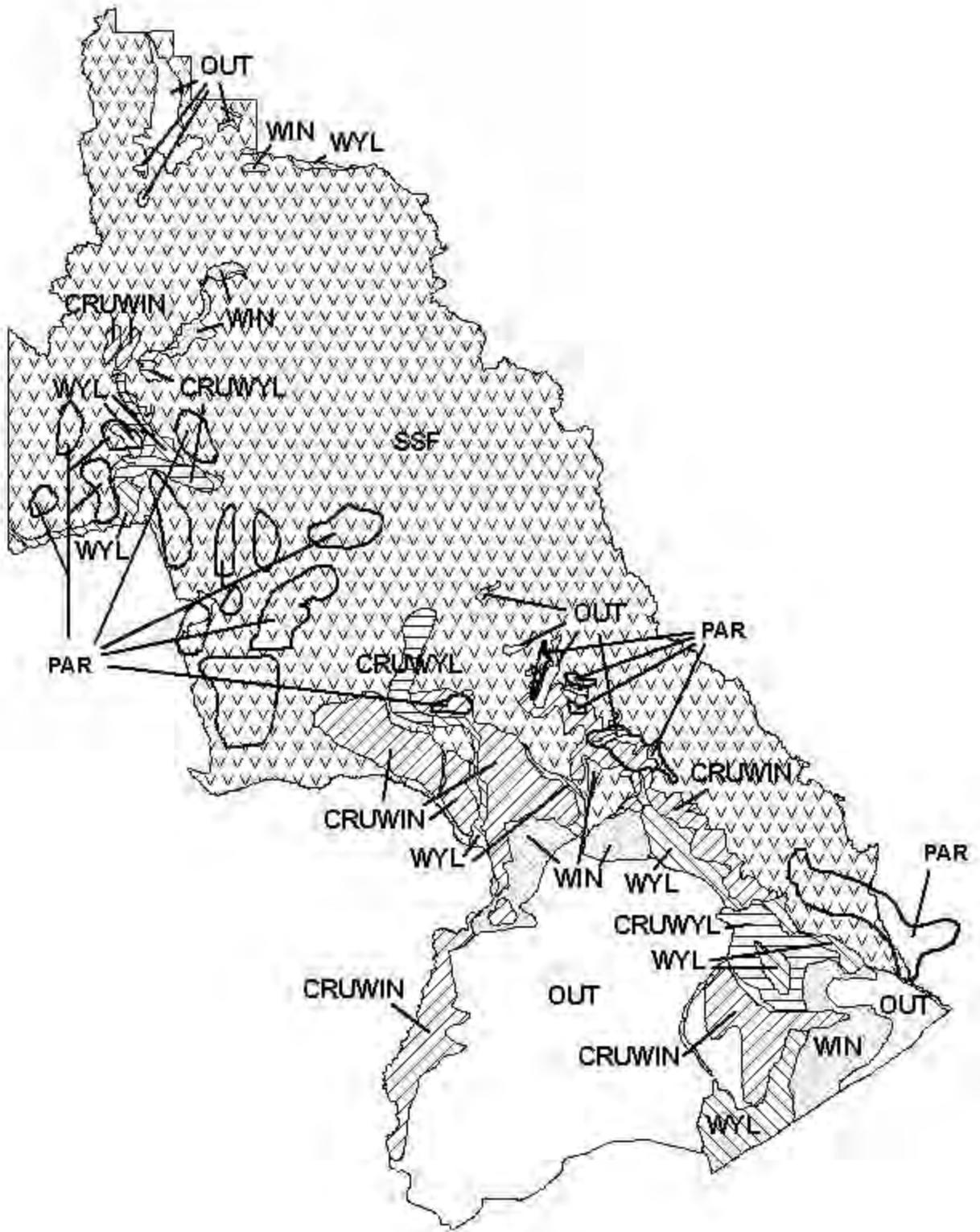
Year	Classification Counts				Total Male/Female Ratio				Harvest										
	Juvenile/Female Ratio		Field SE		Total Male/Female Ratio		Field SE		Juv		Males		Females		Total Harvest		Segment Harvest Rate % of		
	Derived Est	Field Est	Field SE	Derived Est	Field Est	w/o bull/ad]	Field SE	Derived Est	Field Est	Field SE	Field Est	Field SE	Field Est	Field SE	Total Harvest	Total Males	Females	Total Males	Females
1993		50.04	1.47	31.83	31.71	1.10	1.10	44	1103	631	1778	26.7	6.2						
1994		67.56	1.62	33.19	33.29	1.01	1.01	0	1328	0	1328	29.3	0.0						
1995		60.49	1.55	36.63	38.77	1.15	1.15	0	1286	0	1286	25.8	0.0						
1996		72.68	2.00	33.64	35.01	1.23	1.23	0	1454	0	1454	30.6	0.0						
1997		84.10	2.15	37.56	34.04	1.16	1.16	0	1039	17	1056	21.9	0.2						
1998		79.50	1.62	37.26	33.07	0.98	0.98	0	1852	0	1852	31.6	0.0						
1999		81.93	1.90	34.48	38.21	1.16	1.16	10	2478	23	2511	37.7	0.2						
2000		70.43	1.92	33.54	35.10	1.09	1.09	22	2991	226	3239	39.9	1.7						
2001		70.43	1.48	33.56	35.23	0.93	0.93	64	2757	372	3223	36.8	2.5						
2002		64.40	1.56	30.24	28.91	0.89	0.89	71	2723	813	3607	40.0	5.7						
2003		78.15	1.69	29.73	29.61	0.89	0.89	35	1976	305	2316	33.9	2.3						
2004		68.44	1.60	24.36	24.36	0.82	0.82	38	1689	302	2029	37.9	2.6						
2005		65.34	1.54	27.79	27.79	0.88	0.88	51	1597	172	1820	33.5	1.5						
2006		77.01	1.75	29.23	29.22	0.92	0.92	33	1546	353	1932	32.7	3.1						
2007		75.37	1.61	35.00	37.75	1.01	1.01	25	1865	322	2212	31.2	2.7						
2008		70.56	1.69	38.54	37.24	1.10	1.10	69	1434	336	1839	24.3	2.8						
2009		60.01	1.45	38.75	37.40	1.06	1.06	80	1639	391	2110	27.3	3.4						
2010		65.06	1.52	36.91	36.45	1.03	1.03	49	1590	398	2037	29.0	3.6						
2011		58.55	1.76	35.75	35.75	1.27	1.27	6	965	19	980	21.8	0.2						
2012		74.27	1.92	35.65	35.65	1.18	1.18	6	1250	41	1297	26.9	0.4						
2013		65.73	1.65	36.50	36.60	1.12	1.12	10	1300	40	1350	27.0	0.4						
2014		65.73	1.65	36.70	36.60	1.12	1.12	10	1300	40	1350	26.9	0.4						
2015																			
2016																			
2017																			
2018																			
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2023																			
2024																			
2025																			

FIGURES



Comments: This modeling exercise assigns the juvenile constraints at 0.6 - 0.9, which tends to optimize down to a 60% fawn survival in the other models. I believe that on most years a 60% to 80% fawn survival is more representative than 40% to 90% in MD104#2Model3-2-12. Fawn Survival constraints were relaxed to 0.2 - 0.9 for those years where documented fawn loss was high. This TSJCA model represents the overall population trends and ratio data very well with the most believable population estimates, although doesn't have as good a "fit" score as MD104#2Model3-2-13. In addition, the other models (CJCA and SCJSCA) also represent the trend and ratio data pretty well with believable population estimates, which indicates to me that this is the best overall model.

END



Mule Deer (MD104) - Sublette
 HA 130, 138-142, 146, 150-156, 162
 Revised - 3/05



2012 - JCR Evaluation Form

SPECIES: Elk
 HERD: EL104 - HOBACK
 HUNT AREAS: 86-87

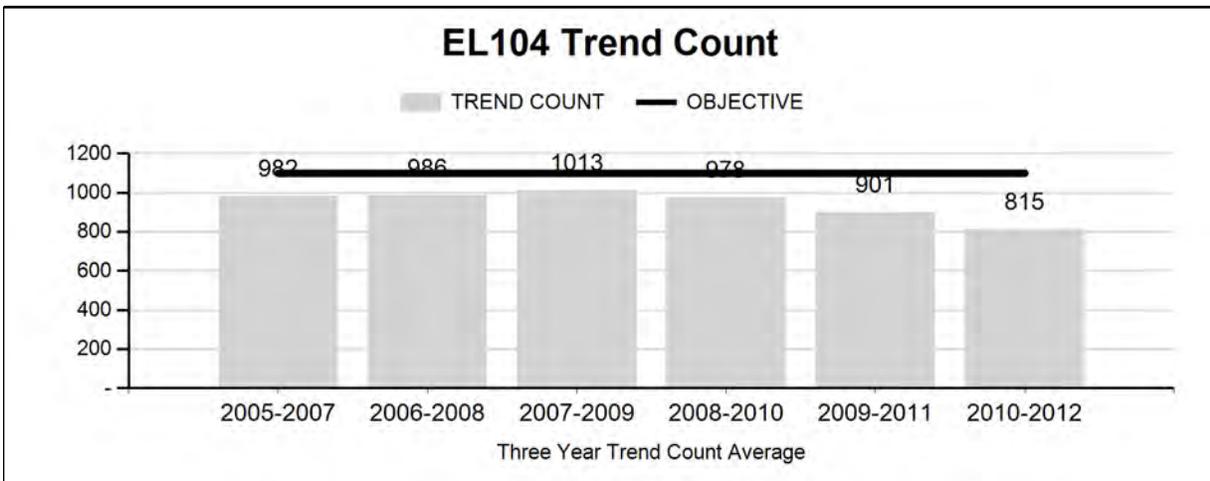
PERIOD: 6/1/2012 - 5/31/2013
 PREPARED BY: DEAN CLAUSE

	<u>2007 - 2011 Average</u>	<u>2012</u>	<u>2013 Proposed</u>
Trend Count:	939	787	727
Harvest:	259	244	215
Hunters:	850	767	700
Hunter Success:	30%	32%	31%
Active Licenses:	859	32%	700
Active License Percentage:	30%	32%	31%
Recreation Days:	5,868	5,357	5,100
Days Per Animal:	22.7	22.0	23.7
Males per 100 Females:	19	17	
Juveniles per 100 Females	31	31	

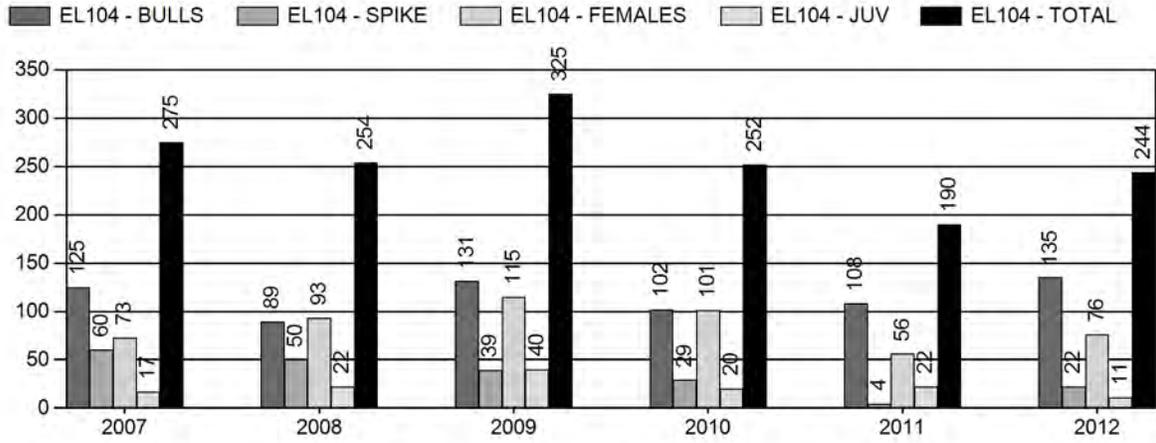
Trend Based Objective ($\pm 20\%$) 1,100 (880 - 1320)
 Management Strategy: Recreational
 Percent population is above (+) or (-) objective: -28.5%
 Number of years population has been + or - objective in recent trend: 3

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

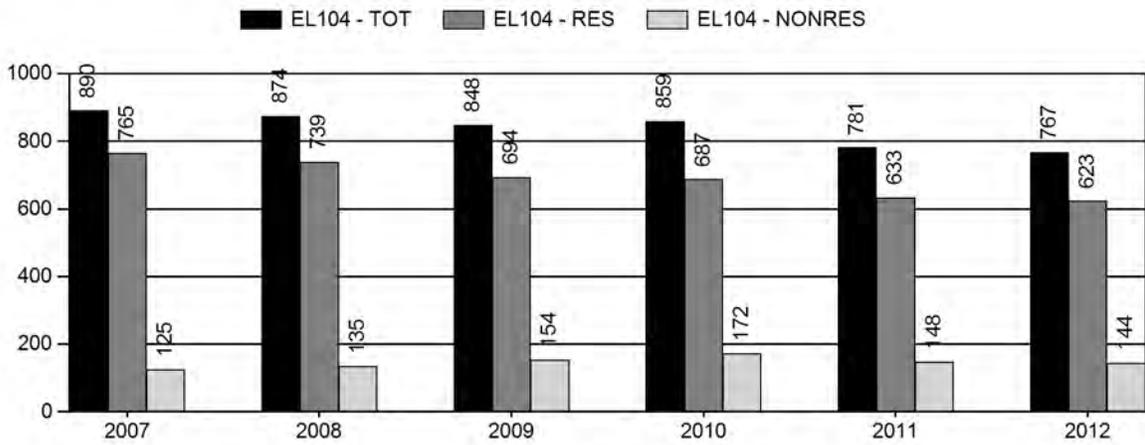
	<u>JCR Year</u>	<u>Proposed</u>
Females ≥ 1 year old:	0%	0%
Males ≥ 1 year old:	0%	0%
Juveniles (< 1 year old):	0%	0%



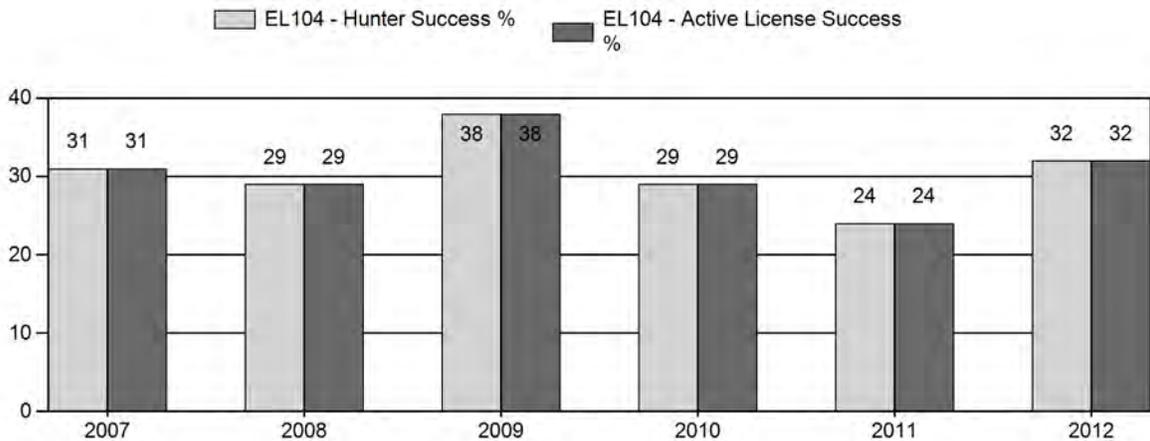
Harvest



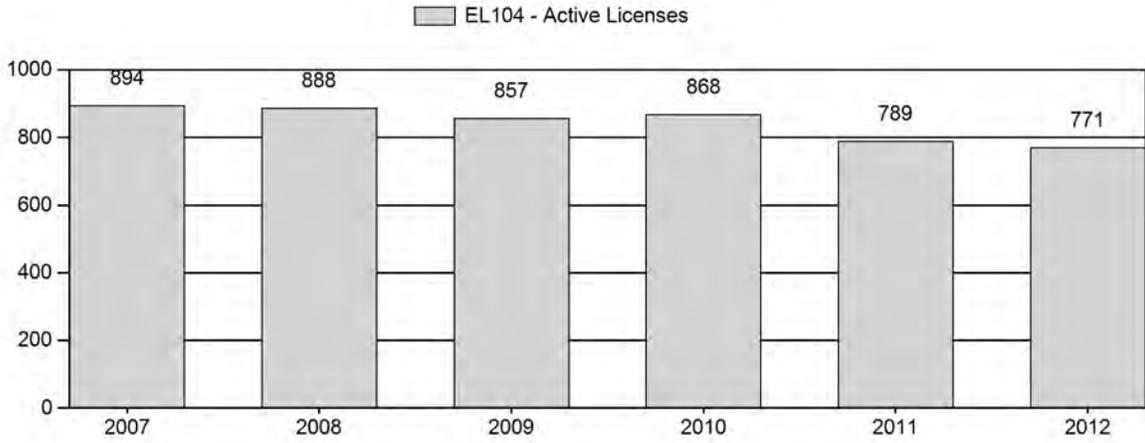
Number of Hunters



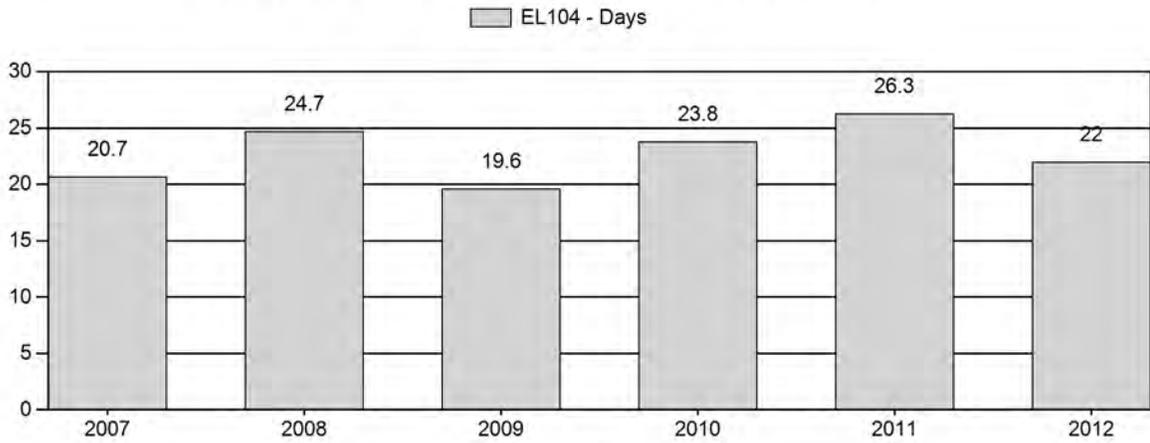
Harvest Success



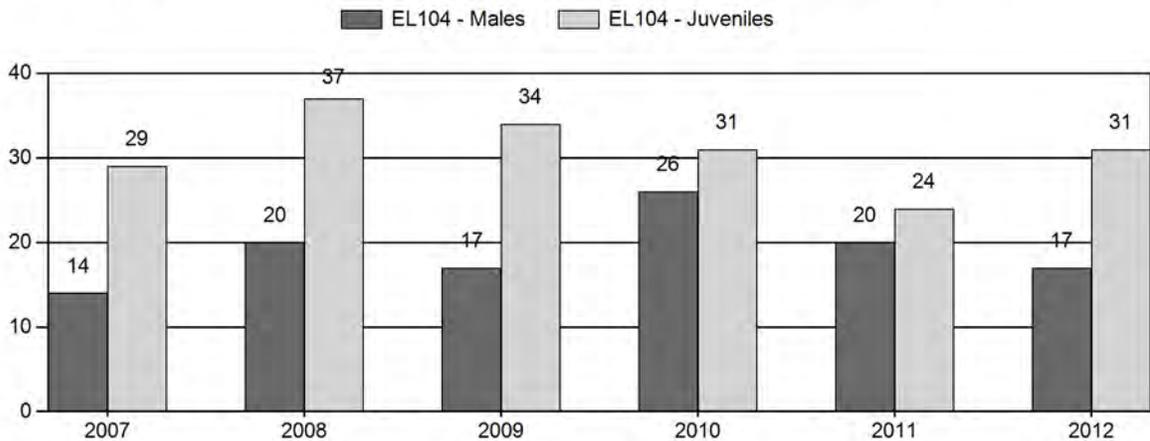
Active Licenses



Days per Animal Harvested



Postseason Animals per 100 Females



2007 - 2012 Postseason Classification Summary

for Elk Herd EL104 - HOBACK

Year	Post Pop	MALES				FEMALES		JUVENILES		Tot CIs	Cls Obj	Males to 100 Females			Young to			
		Ylg	Adult	Total	%	Total	%	Total	%			Yng	Adult	Total	Conf Int	100 Fem	Conf Int	100 Adult
2007	955	43	46	89	10%	635	70%	181	20%	905	360	7	7	14	± 0	29	± 0	25
2008	1,064	66	68	134	13%	655	63%	243	24%	1,032	353	10	10	20	± 0	37	± 0	31
2009	1,076	59	55	114	11%	670	66%	229	23%	1,013	319	9	8	17	± 0	34	± 0	29
2010	850	60	80	140	17%	533	64%	164	20%	837	281	11	15	26	± 0	31	± 0	24
2011	823	45	69	114	14%	573	70%	135	16%	822	204	8	12	20	± 0	24	± 0	20
2012	0	20	70	90	11%	533	68%	164	21%	787	0	4	13	17	± 0	31	± 0	26

2013 Seasons – Hoback Elk Herd Unit (EL104)

Hunt Area	Type	Opens	Closes	Quota	Limitations
86		Sept. 26	Oct. 31		General License; any elk
87		Oct. 15	Oct. 31		General License; any elk valid in that portion of Area 87 south of U.S Hwy 191.
		Oct. 15	Oct. 31		General License; antlered elk valid in that portion of Area 87 north of U.S Hwy 191.
	6	Nov. 19	Jan. 31	25	Limited Quota; 25 licenses cow or calf valid only in that portion of Area 87 south and east of Dell Creek, north and east of U.S. Highway 191, and west of the North Fork of Fisherman Creek.
Archery Seasons					
86		Sept. 1	Sept. 25		Refer to Section 3
87		Sept. 1	Sept. 30		Refer to Section 3

Hunt Area	License Type	Quota Changes from 2012
Herd Unit Total		No Changes

Management Evaluation

Current Mid-Winter Trend Count Management Objective: 1,100

Management Strategy: Recreational

2012 Trend Count: 787

Most Recent 3-year Running Average Trend Count: 815

The Hoback Herd Unit encompasses approximately 341 square miles of occupied elk habitat almost entirely within Sublette County. Hunt Areas 86 (Monument Ridge) and 87 (Raspberry Ridge) make up the Hoback Herd Unit. This herd unit is managed under a mid-winter trend objective of 1,100 (± 20%) with a herd estimate derived from a 3-year trend count average on

feedgrounds and native range combined. This herd is managed under “recreational” management, with a management objective for bull: 100 cow ratio between 15 to 29.

Herd Unit Issues

Managers believe a very high proportion (95+%) of elk are typically counted in this herd unit and are located on feedgrounds during the winter. This is an extremely “leaky” herd unit and as a result, a population model has not been successfully developed. The amount of elk movement from this herd unit makes simple hand calculations difficult, typically resulting in bull and calf ratios (modeled verses observed), which do not track well from one year to the next. In addition, annual trend counts can vary abruptly for unknown causes.

Weather

Elk in this herd unit experience the coldest winter temperatures compared to all others herd units in western Wyoming, which may result in higher feedground dependence, even on low snow years. Heavy snow loads typically make most native forage unavailable on most winters.

Habitat

Since over 90% of the elk rely on supplemental feeding (feedgrounds) within this herd unit, winter and other seasonal habitats are not considered to be limiting herd dynamics.

Field Data

During 2012 postseason trend counts, 787 elk were observed on Department-operated elk feedgrounds and native winter ranges, showing a continuing decline since 2008 (Table 1). Very few elk (n=72) were counted away from established feedgrounds in Areas 86 and 87, which is typical for this herd unit due to climatic conditions. Snow conditions were well below normal this past winter (2012-13). Over 90% of the documented elk numbers were from feedground locations.

Table 1. Herd trend counts in the Hoback Herd Unit, 2003-2012.

Location	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Dell Creek F.G.	230	298	258	297	311	345	298	228	205	171
McNeel F.G.	680	560	716	598	591	687	701	596	613	544
N.W.R.	<u>136</u>	<u>83</u>	<u>70</u>	<u>67</u>	<u>38</u>	<u>23</u>	44	<u>13</u>	<u>4</u>	<u>72</u>
Herd Unit Total	1046	941	1044	962	940	1055	1043	837	822	787

The 2012 postseason ratios of 17 bulls:100 cows:31 calves, shows a decrease in the bull ratio and an increase in the calf ratio compared to 2011 bull:cow:calf ratios of 20:100:24. The 2012 bull ratio is adequate and within management goals for this herd unit, while the calf ratio is the same as the 5-year average of 31:100.

Harvest Data

The continuation of general license, “any” elk hunting seasons in Area 86, and limited number of days of general, “any” elk hunting in Area 87 have proven successful at maintaining the winter population near the objective in the past. Additional antlerless harvest opportunities were made

available starting in 2008 and continuing through 2011 in Area 86 and the southern portions of Area 87 to help reduce elk numbers in surrounding herd units, as many elk from those herd units move into these areas during the spring/summer/fall period. The 2012 harvest survey indicated a total harvest of approximately 240 (150 bulls and 90 cows/calves) which increased from the 190 (112 bulls and 78 cows/calves) reported in 2011. The 2011 harvest was the second lowest (2005 was lowest) reported harvest during the past 10-years. Hunter success was 32% with 22 days/animal harvested in 2012, an improvement from 24% success and 26 days/animal harvested in 2011. The past 5-year averages report a total harvest of 259 elk, hunter success of 30%, and 23 days/animal harvested.

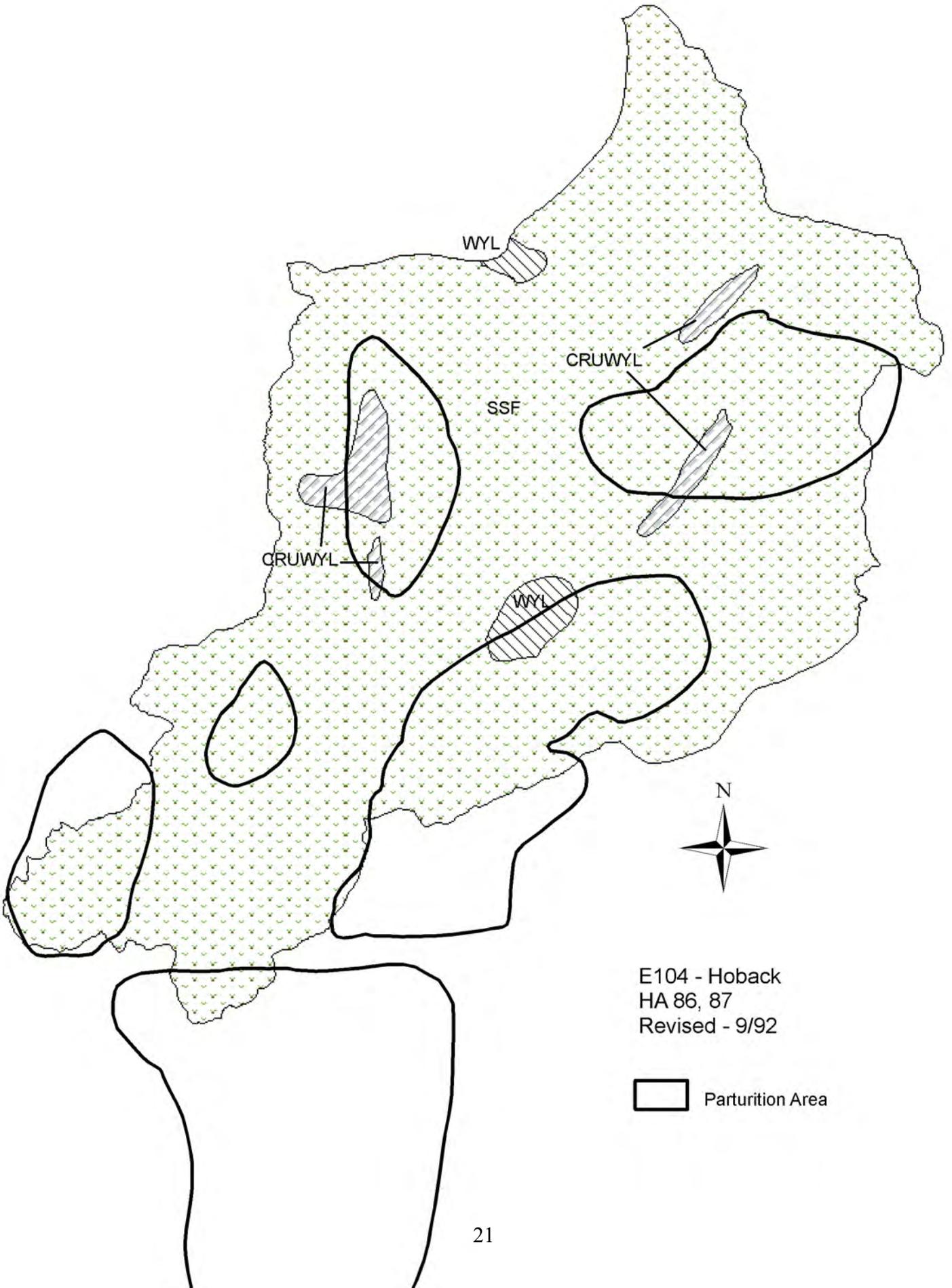
Population

Starting in 2012, a mid-winter trend count was used to manage this herd unit instead of hand-derived population model estimates. This is an extremely “leaky” herd unit and as a result, a functional computer simulation model has never been developed. The post hunt population trend objective for this herd is 1,100 elk ($\pm 20\%$). The 2010-2012 mid-winter 3-year trend count average is 815 elk, which is below this herd objective.

Management Summary

The Hoback Herd Unit is “leaky” in regards to elk moving in and out of the herd on a seasonal basis. Therefore population estimates remain very difficult and computer simulations are unreliable. Fluctuations of 100+ animals between annual winter counts are common without any rational explanation for the changes. Based on harvest data from elk ear tagged at Franz feedground, located in the Piney herd unit, approximately half these elk move into the south portion of Area 87 and Area 86 (Hoback herd unit) during the summer and fall. Ear tag data from the Dell Creek feedground indicate about half those elk move out of the Hoback herd unit during the summer and fall. Since 2008, hunting seasons have been designed to increase harvest on antlerless within the Hoback herd unit as well as surrounding herd units, which can be attributed to low elk numbers during the past three winters. In 2012 seasons were changed to reduce female harvest in response to low elk numbers during the winter of 2011-2012. Currently, adequate bull:cow:calf ratios are being maintained, although a declining trend. The recent mid-winter 3-year trend average was 815 elk, 26% below the objective of 1,100. Herd management for 2013 will be similar to 2012, to reduce antlerless harvest in parts of this herd, primarily targeted in the northern portion of Area 87, in an effort to increase the postseason (winter) population.

The 2013 hunting seasons for this herd unit will be the same as in 2012. In Area 87, the general license season is “any” elk hunting the entire season (Oct. 15 – Oct. 31) south of U.S. Hwy 191, but will be limited to “antlered” elk north of U.S. Hwy 191. A total of 25 limited quota Type 6 (cow/calf) licenses are available in a portion of Area 87, valid from Nov. 19 through January 31, in an effort to reduce damage to privately stored hay crops. The 2013 season in Area 86 offers a general license, “any” elk hunting from September 26 through October 31, same as in past years. The 2013 hunting seasons are projected to harvest approximately 215 elk (130 bulls, 70 cows, and 15 calves) with a projected 2013 mid-winter population trend count around 750 elk.



E104 - Hoback
HA 86, 87
Revised - 9/92

 Parturition Area

2012 - JCR Evaluation Form

SPECIES: Elk

PERIOD: 6/1/2012 - 5/31/2013

HERD: EL106 - PINEY

HUNT AREAS: 92, 94

PREPARED BY: GARY FRALICK

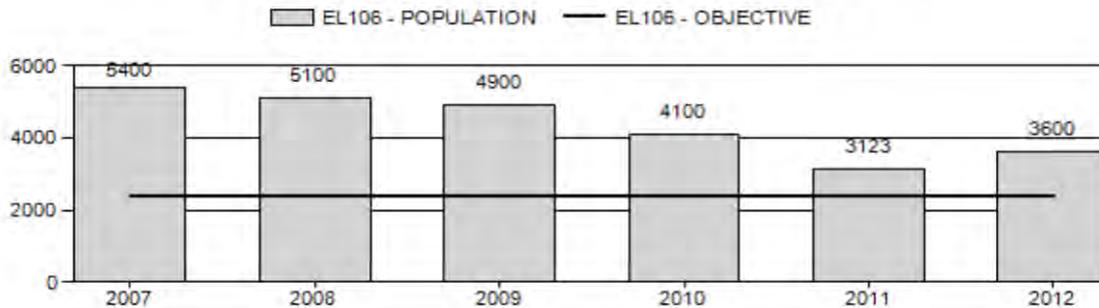
	<u>2007 - 2011 Average</u>	<u>2012</u>	<u>2013 Proposed</u>
Population:	4,525	3,600	2,600
Harvest:	922	1,103	1,300
Hunters:	2,948	3,214	3,100
Hunter Success:	31%	34%	42%
Active Licenses:	3,083	3,380	3,100
Active License Percent:	30%	33%	42%
Recreation Days:	23,577	27,180	27,000
Days Per Animal:	25.6	24.5	20.8
Males per 100 Females	29	33	
Juveniles per 100 Females	33	37	

Population Objective:	2,400
Management Strategy:	Recreational
Percent population is above (+) or below (-) objective:	50%
Number of years population has been + or - objective in recent trend:	9
Model Date:	2/27/2013

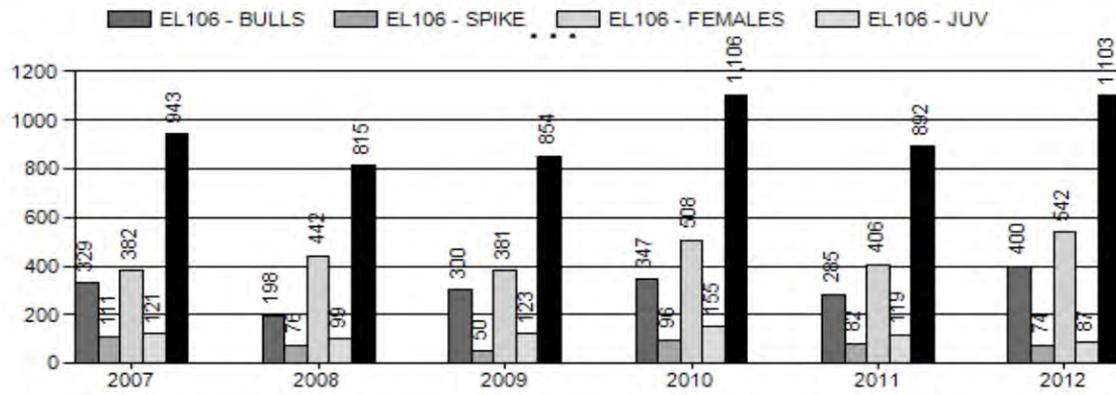
Proposed harvest rates (percent of pre-season estimate for each sex/age group):

	<u>JCR Year</u>	<u>Proposed</u>
Females ≥ 1 year old:	24%	33%
Males ≥ 1 year old:	60%	54%
Juveniles (< 1 year old):	13%	17%
Total:	26%	36%
Proposed change in post-season population:	-25%	-28%

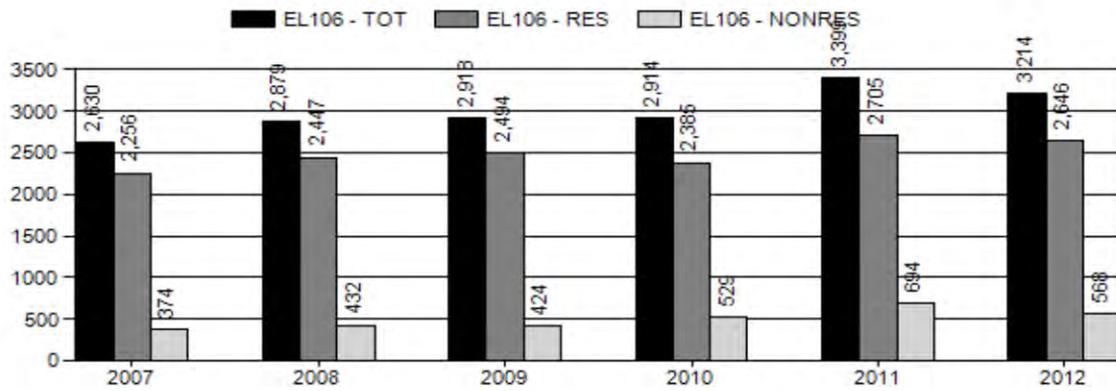
Population Size - Postseason



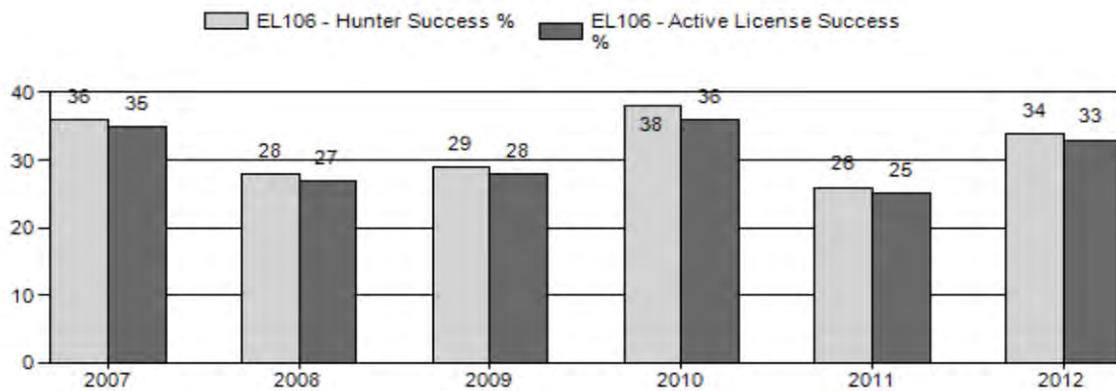
Harvest



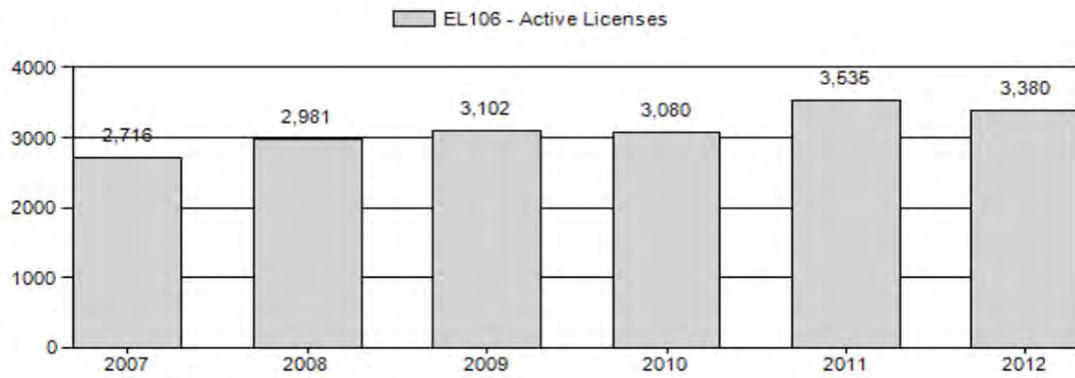
Number of Hunters



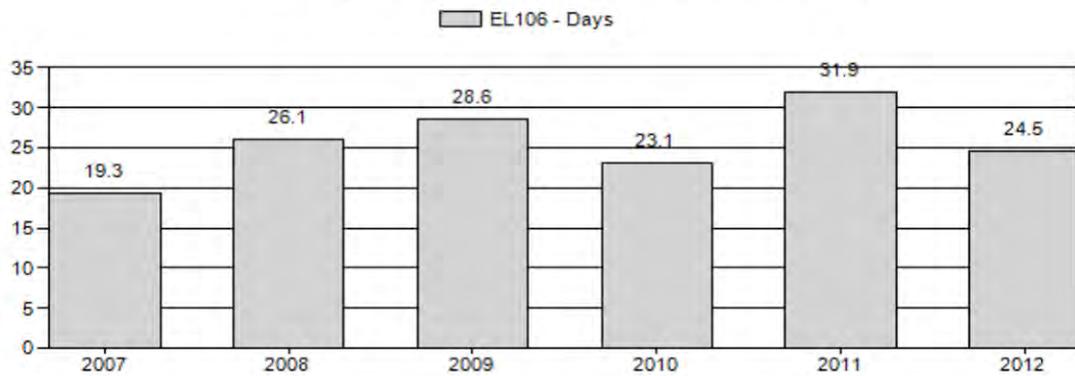
Harvest Success



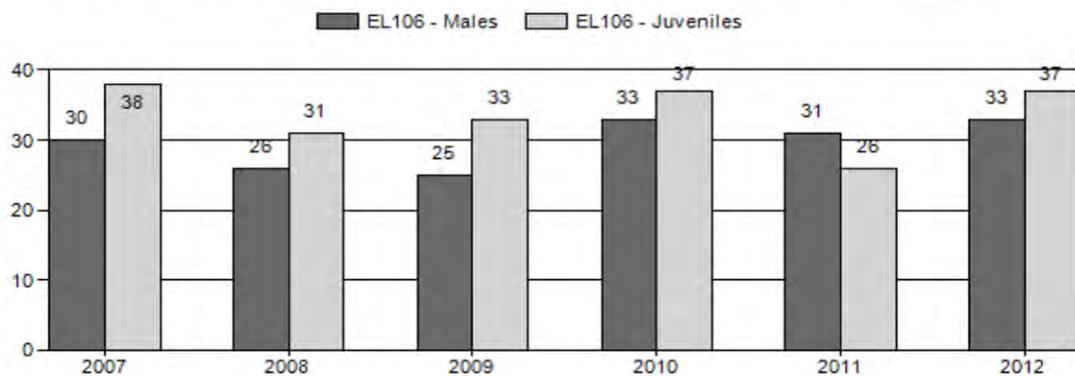
Active Licenses



Days per Animal Harvested



Postseason Animals per 100 Females



2007 - 2012 Postseason Classification Summary

for Elk Herd EL106 - PINEY

Year	Post Pop	MALES				FEMALES		JUVENILES		Tot Cls	Cls Obj	Males to 100 Females				Young to		
		Ylg	Adult	Total	%	Total	%	Total	%			Ylg	Adult	Total	Conf Int	100 Fem	Conf Int	100 Adult
2007	5,400	241	301	542	18%	1,791	60%	672	22%	3,005	736	13	17	30	± 1	38	± 1	29
2008	5,100	255	243	498	17%	1,887	64%	585	20%	2,970	383	14	13	26	± 1	31	± 1	25
2009	4,900	190	216	406	16%	1,618	63%	539	21%	2,563	403	12	13	25	± 1	33	± 1	27
2010	4,100	199	357	556	19%	1,683	59%	621	22%	2,860	381	12	21	33	± 1	37	± 1	28
2011	3,123	217	302	519	20%	1,660	64%	425	16%	2,604	369	13	18	31	± 1	26	± 1	20
2012	3,600	261	306	567	19%	1,705	59%	639	22%	2,911	357	15	18	33	± 1	37	± 1	28

2013 HUNTING SEASONS

SPECIES: ELK

HERD UNIT: PINEY (EL106)

<u>HUNT AREA</u>	<u>TYPE</u>	<u>OPENS</u>	<u>CLOSES</u>	<u>QUOTA</u>	<u>LIMITATIONS</u>
92		Oct.1	Oct. 14		General license; antlerless elk
		Oct.1	Oct.31		General license; any elk
		Nov.1	Nov. 24		General license; antlerless elk
	6	Oct.1	Nov. 24	500	Limited quota; cow or calf
		Nov. 25	Jan. 31		Unused Area 92 Type 6 licenses valid off national forest in portion of Area 92 east of Sublette County Roads 115, 116, and 117 and south of the North Beaver Road
94		Oct. 1	Oct. 14		General license; antlerless elk
		Oct. 15	Oct. 31		General license; any elk

		Nov. 1	Nov. 24		General license; antlerless elk valid north of Middle Piney Creek
	6	Oct. 1	Oct. 31	550	Limited quota; cow or calf
		Nov. 1	Nov. 24		Unused Area 94 Type 6 valid north of Middle Piney Creek
		Nov. 25	Jan. 31		Unused Area 94 Type 6 licenses, 100 Access Permits will be issued for antlerless elk only on those lands enrolled in the Big Piney Hunter Management Area in Area 94. Access permits will be available beginning November 1.
92,94		Sept. 1	Sept. 30		General license; Archery only, Refer to Section 4.

SUMMARY OF CHANGES BY LICENSE TYPE

Area	License Type	Change from 2012
92	Gen.Antlerless	Change closing dates from Nov. 20 to Nov. 24
92	Limited Type 6	Changes closing dates from Nov. 20 to Nov. 24
94	Gen. Antlerless	Change closing date to Oct. 31 hunt area wide
94	Gen. Antlerless	Change open area from entire hunt area to that portion of area north of Middle Piney Creek, Nov. 1-24
94	Limited Type 6	Change closing date to Oct. 31 hunt area wide
94	Limited Type 6	Change open area from entire hunt area to that portion of area north of Middle Piney Creek, Nov. 1-24
Total	Limited Quota	No Change

Management Evaluation

Current Management Objective: 2,400

Management Strategy: Recreational

2012 Postseason Population Estimate: ~3,600

2013 Proposed Postseason Population Estimate: ~2,600

The population objective for Piney elk herd is 2400 elk. The management strategy is recreational and the objective and management strategy were last revised in 2011. The current population estimate is 3600 elk.

HERD UNIT ISSUES

The management strategy for the Piney elk herd since 2005 has been population reduction. Population performance has exhibited a somewhat stable trend over the last five years, however, at a level that greatly exceeds the population objective. Despite some of the most liberal elk hunting seasons in western Wyoming, sustained population reduction has been unattainable. Hot and dry weather patterns, a reduction in hunter participation during the November seasons, and high bull:cow ratios that typically exceed 30 bulls:100 cows have contributed to poor antlerless harvest (Appendix A). High bull numbers provide hunters an opportunity to harvest an antlered elk rather than a cow or calf. High calf production and survival since 2005, and resulting cow:calf ratios that in some years exceed 40 calves: 100 cows may have reduced the effect of above average antlerless elk harvest.

WEATHER

Weather conditions during 2012 were extremely dry during the late summer and through the hunting season. Drought conditions persisted into early winter; snowpack in the Wyoming Range was reported below normal. The drought conditions of 2012 were widespread and severe. Precipitation data from the NOAA weather station near Big Piney documented the driest April through June since 1895, when monitoring started at this site. Please refer to the following web sites for specific weather station data: <http://www.ncdc.noaa.gov/temp-and-precip/time-series> and <http://www.ncdc.noaa.gov/oa/climate/research/prelim/drought/pdiimage.html> .

HABITAT

Since the late 1990s, winter range browse has been measured each spring and fall to assess production and utilization. The growing conditions were extremely poor in 2012 due to lack of precipitation in the spring and preceding winter. Many shrubs were unable to produce leaders, and leaves were even stunted in many cases. Ephemeral leaf drop occurred in August on many plants, just one of many responses to the extreme dry conditions. Seed production was very minimal for all species due to lack of moisture.

For additional site specific information, please refer to the 2012 Annual Report Strategic Habitat Plan Accomplishments, pages 104-123 for Pinedale Region habitat improvement project summaries (<http://wgfd.wvo.gov/web2011/wildlife-1000708.aspx>).

FIELD DATA

Since 2005, population reduction has been unattainable. Management strategies have emphasized the harvest of antlerless elk with November hunting seasons and issuance of limited quota cow/calf licenses. Since 2005, total antlerless harvest has not resulted in a declining population. While both hunt areas continue to support winter elk numbers at or above Commission-established feedground quotas, it is Area 94, and specifically the Bench Corral feedground that has supported the highest increase in elk (Appendix A). Consequently, hunting opportunities, especially for antlerless elk in Area 94 where trend counts continue to increase, will continue to be liberal in order to affect the desired population reduction. Limited quota Type 6 cow/calf licenses will focus on the antlerless segment of the population since these license holders typically account for at least 50% of the antlerless harvest in the herd unit.

HARVEST

Hunter success was estimated at 34% in 2012 with a total harvest over 1100 elk. General license hunters accounted for 72% of the total elk harvest, and 59% of the total antlerless harvest. Participation from limited quota Type 6 license holders is necessary in the harvest of antlerless elk, especially during the November portion of the hunt. The added dimension of harvesting antlerless elk with Type 6 licenses other than general hunting opportunity will assist in population reduction. Antlerless hunting is an essential component of the elk management strategy. Limited quota licenses holders will have ample hunting opportunity from October through November. The management goal of maintaining the postseason bull: cow ratios of at least 20 bulls:100 cows is currently being met.

POPULATION

The model evaluation is considered excellent based on the criteria associated with years of data, availability of ratio data, juvenile and adult survival estimates, model alignment, and the current model is biologically defensible. The only criterion that was not achieved was the absence of at least two sample-based population estimates. The population has been trending downward since 2007. This trend is reflected in the spreadsheet model estimates. The “Time Sensitive Juvenile – Constant Adult Mortality Rate” (TSJCA) spreadsheet model was chosen for the post season population estimate. This model provides the best alignment of bull:cow ratios, an AICc value of 328, bull harvest percentages, and annual population dynamics.

MANAGEMENT SUMMARY

The 2013 hunting seasons are designed to reduce the Piney elk toward the objective of 2400 elk. The emphasis to harvest adult female elk in both hunt areas will continue for the 6th consecutive year by opening the general and limited quota antlerless elk hunting on October 1. In addition, the number of days for the November portion of the antlerless elk hunting season will increase from 20 days to 24 days for both license types. The number of limited quota Type 6 licenses available in 2013 will remain at 950. A total of 500 and 550 Type 6 licenses will be issued in Areas 92 and 94, respectively.

A substantial change in the 2013 hunt for Area 94 will be to shift the hunting pressure north of Middle Piney Creek during November. This will focus harvest on that segment of the population that spends the winter on the Bench Corral feedground. The limited quota Type 6 cow/calf license will run from November 1 – November 24 north of Middle Piney Creek. For the 2nd consecutive year, hunters will be permitted to harvest up to three elk in this herd.

The 2013 hunting seasons are projected to harvest 1300 elk. The projected 2013 posthunt population estimate should be approximately 2600 elk.

INPUT	
Species:	Elk
Biologist:	Gary Fralick
Herd Unit & No.:	Piney Elk
Model date:	02/27/13

MODELS SUMMARY		Relative AICc	Fit	Notes
CJ,CA	Constant Juvenile & Adult Survival	285	276	
SC,J,SCA	Semi-Constant Juvenile & Semi-Constant Adult Survival	43576	43567	
TS,J,CA	Time-Specific Juvenile & Constant Adult Survival	328	210	
TS,J,CA,MSC	Time-Specific Juv, Constant Adult Survival, Male survival coefficient	300027	300016	

Year	Posthunt Population Est. Field Est	Trend Count	Population Estimates from Top Model				Total	Objective		
			Juveniles	Total Males	Females	Total				
1993			1222	1264	3151	5638	1178	884	2923	4985
1994			1641	1405	3354	6401	1533	711	2906	5149
1995			1398	1407	3506	6312	1327	1065	3301	5694
1996			1447	1549	3687	6684	1379	1204	3275	5858
1997			1088	1806	3786	6680	965	1319	3247	5531
1998			1291	1719	3563	6573	1205	1239	3077	5520
1999			1485	1757	3514	6755	1366	1140	3107	5612
2000			1239	1636	3517	6392	1083	1085	2848	5016
2001			1127	1552	3237	5916	1053	1087	2925	5066
2002			1089	1461	3218	5767	1008	1131	2997	5136
2003			1074	1485	3268	5827	996	1096	3020	5112
2004			1312	1511	3350	6174	1200	1035	2954	5189
2005			1361	1470	3304	6135	1327	1120	3124	5571
2006			1435	1601	3518	6554	1324	1135	3160	5619
2007			1308	1615	3551	6473	1175	1131	3131	5436
2008			1032	1551	3463	6045	923	1249	2977	5149
2009			1067	1564	3215	5845	931	1179	2796	4906
2010			1114	1569	3115	5799	943	1082	2557	4582
2011			744	1483	2892	5119	625	1080	2441	4146
2012			860	1329	2631	4821	763	799	2037	3600
2013			613	1127	2310	4050	503	599	1518	2620
2014										
2015										
2016										
2017										
2018										
2019										
2020										
2021										
2022										
2023										
2024										
2025										

Survival and Initial Population Estimates

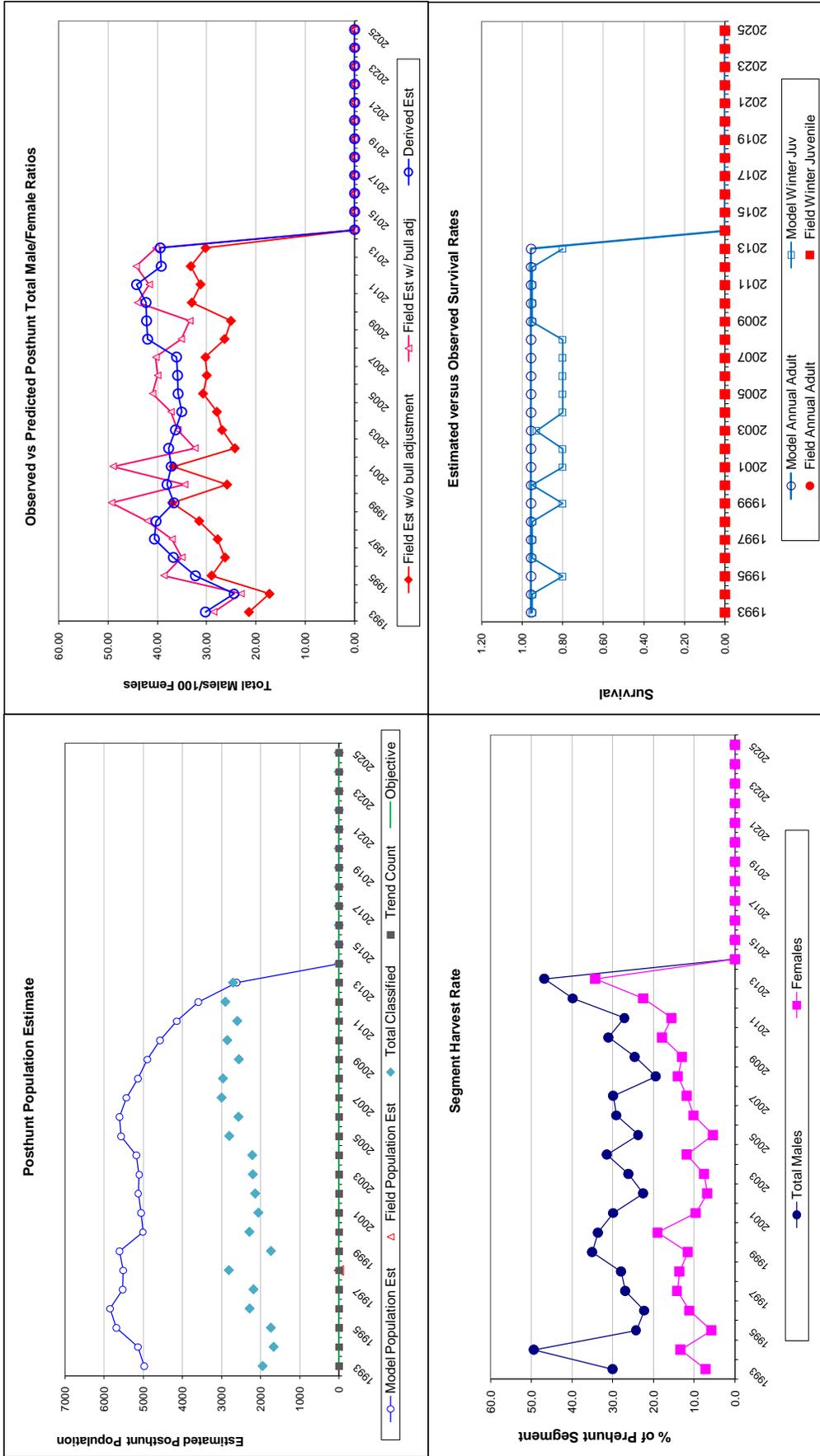
Year	Annual Juvenile Survival Rates		Annual Adult Survival Rates	
	Model Est	Field Est	Model Est	Field Est
1993	0.95		0.96	
1994	0.95		0.96	
1995	0.80		0.96	
1996	0.95		0.96	
1997	0.95		0.96	
1998	0.80		0.96	
1999	0.80		0.96	
2000	0.95		0.96	
2001	0.80		0.96	
2002	0.80		0.96	
2003	0.93		0.96	
2004	0.80		0.96	
2005	0.80		0.96	
2006	0.80		0.96	
2007	0.80		0.96	
2008	0.80		0.96	
2009	0.95		0.96	
2010	0.95		0.96	
2011	0.95		0.96	
2012	0.95		0.96	
2013	0.80		0.96	
2014				
2015				
2016				
2017				
2018				
2019				
2020				
2021				
2022				
2023				
2024				
2025				

Parameters:		Optim cells
Adult Survival =		0.956
Initial Total Male Pop/10,000 =		0.088
Initial Female Pop/10,000 =		0.292

MODEL ASSUMPTIONS	
Sex Ratio (% Males) =	50%
Wounding Loss (total males) =	10%
Wounding Loss (females) =	10%
Wounding Loss (juveniles) =	10%
Total Bulls Adjustment Factor	75%

Year	Classification Counts						Harvest											
	Juvenile/Female Ratio			Total Male/Female Ratio			Juv		Yrl males		2+ Males		Females		Total Harvest		Segment Harvest Rate (% of Prehunt Segment)	
	Derived Est	Field Est	Field SE	Derived Est	Field Est w/ bull adj	Field Est w/o bull adj	Field SE	Field SE	Field SE	Field SE	Field SE	Field SE	Field SE	Field SE	Field SE	Total Males	Females	
1993		40.31	2.16	30.24	28.59	21.44	1.47	40	116	230	207	593	30.1	7.2				
1994		52.74	2.86	24.46	23.04	17.28	1.43	99	144	487	408	1138	49.4	13.4				
1995		40.19	2.34	32.27	38.71	29.03	1.91	65	120	191	186	562	24.3	5.8				
1996		42.12	2.10	36.76	35.05	26.29	1.56	62	74	240	375	751	22.3	11.2				
1997		29.73	1.67	40.62	37.05	27.79	1.60	111	156	287	490	1044	27.0	14.2				
1998		39.16	1.82	40.26	42.05	31.54	1.58	78	109	328	442	957	28.0	13.6				
1999		43.97	2.57	36.68	49.34	37.01	2.30	108	138	423	370	1039	35.1	11.6				
2000		38.03	1.94	38.09	34.50	25.88	1.53	142	106	395	608	1251	33.7	19.0				
2001		36.01	2.03	37.18	49.02	36.77	2.05	67	117	305	284	773	29.9	9.7				
2002		33.65	1.82	37.74	32.40	24.30	1.49	73	53	247	201	574	22.6	6.9				
2003		32.99	1.78	36.31	35.87	26.90	1.57	71	84	269	226	650	26.2	7.6				
2004		40.62	2.08	35.04	37.26	27.94	1.65	102	77	356	360	895	31.5	11.8				
2005		42.48	1.93	35.85	41.02	30.76	1.57	31	76	242	164	513	23.8	5.5				
2006		41.88	1.99	35.92	39.99	29.99	1.61	101	91	333	325	850	29.1	10.2				
2007		37.52	1.70	36.12	40.35	30.26	1.48	121	111	329	382	943	30.0	11.8				
2008		31.00	1.47	41.97	35.19	26.39	1.33	99	76	198	442	815	19.4	14.0				
2009		33.31	1.66	42.16	33.46	25.09	1.39	123	50	300	381	854	24.6	13.0				
2010		36.90	1.73	42.32	44.05	33.04	1.62	155	96	347	508	1106	31.1	17.9				
2011		25.60	1.39	44.23	41.69	31.27	1.57	108	84	282	410	884	27.2	15.6				
2012		37.48	1.74	39.23	44.34	33.26	1.61	88	75	407	540	1110	39.9	22.6				
2013		33.13	1.63	39.44	40.32	30.24	1.54	100	82	398	720	1300	46.9	34.3				
2014																		
2015																		
2016																		
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2020																		
2021																		
2022																		
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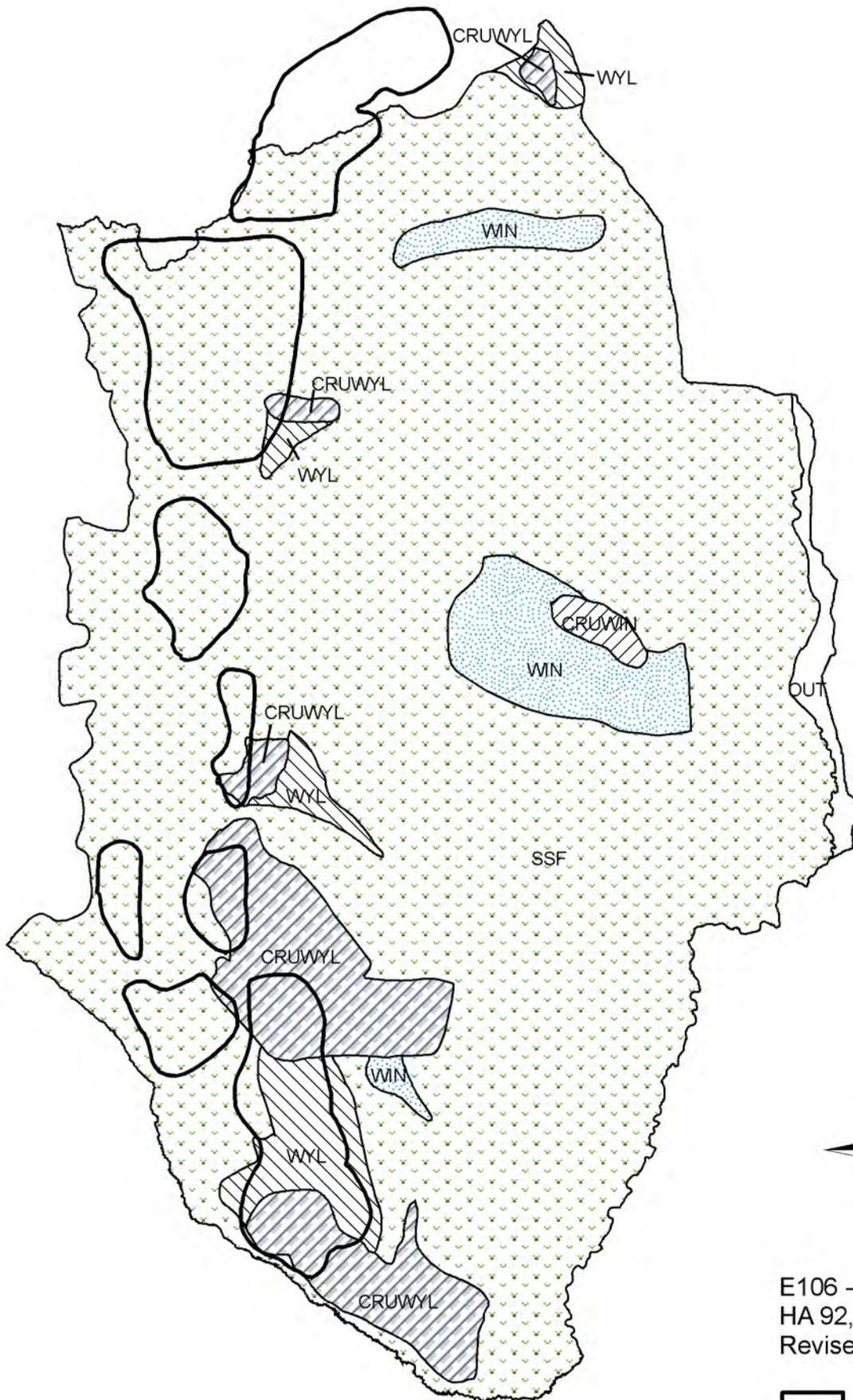
FIGURES



Comments:

Appendix A. Pinyon Elk Herd, posthunt herd composition data, 2007-2012.

2007	Adult Males	Yrlnng Males	Total Males	Cows	Calves	Total	Ratio:100 Females			
							Adult Males	Yrlnng Males	Total Males	Calves
92 JFG	87	67	154	583	199	936				
92 FFG	97	41	138	330	127	595				
92 NR	8	3	11	3	1	15				
94 FFG	19	28	47	276	103	426				
94 NPFG	12	39	51	274	119	444				
94 BCFG	76	63	139	323	123	585				
94 NR	2	0	2	2	0 (465)	469				
TOTAL	301	241	542	1791	672(465)	3470	17	13	30	37
2008										
92 JFG	93	89	182	581	194	957				
92 FFG	131	61	192	362	166	720				
92 NR	8	0	8	0	0	8				
94 FFG	3	28	31	216	64	311				
94 NPFG	0	0	0	0	0	0				
94 BCFG	7	77	84	728	161	973				
94 NR	1	0	1	0	0(400)	401				
TOTAL	243	255	498	1887	585(400)	3370	13	13	26	31
2009										
92 JFG	74	71	145	576	229	950				
92 FFG	90	57	147	297	119	563				
92 NR	10	1	11	6	1	18				
94 FFG	25	23	48	204	77	329				
94 NPFG	0	0	0	0	0	0				
94 BCFG	5	35	40	505	98(171)	814				
94 NR	12	3	15	30	15	60				
TOTAL	216	190	406	1618	539(171)	2734	13	12	25	33
2010										
92 JFG	97	64	161	479	230	870				
92 FFG	95	36	131	242	93	466				
92 NR	19	4	23	6	7(11)	47				
94 FFG	31	10	41	157	42	240				
94 NPFG	0	0	0	0	0	0				
94 BCFG	52	82	134	786	245	1165				
94 NR	63	3	66	13	4(139)	222				
TOTAL	357	199	556	1683	621(150)	3010	21	12	33	37
2011										
92 JFG	64	69	133	443	170	746				
92 FFG	113	25	138	197	63	398				
92 NR	29	2	31	1	1	33				
94 FFG	6	8	14	138	51	203				
94 NPFG	0	0	0	0	0	0				
94 BCFG	78	110	188	881	140(100)	1309				
94 NR	12	3	15	N/A	N/A(203)	218				
TOTAL	302	217	519	1660	425(303)	2907	18	13	31	26
2012										
92 JFG	14	61	75	391	228	694				
92 FFG	885	41	126	218	79	423				
92 NR	71	2	73	0	0	73				
94 FFG	30	25	55	137	47	239				
94 NPFG	0	0	0	0	0	0				
94 BCFG	65	121	186	959	284	1429				
94 NR	41	11	52	0	1(14)	67				
TOTAL	306	261	567	1705	639(14)	2925	18	15	33	37



E106 - Piney
 HA 92, 94
 Revised - 12/88

 Parturition Area

2012 - JCR Evaluation Form

SPECIES: Elk

PERIOD: 6/1/2012 - 5/31/2013

HERD: EL107 - UPPER GREEN RIVER

HUNT AREAS: 93, 95-96

PREPARED BY: DEAN CLAUSE

	<u>2007 - 2011 Average</u>	<u>2012</u>	<u>2013 Proposed</u>
Trend Count:	2,466	2,706	2,726
Harvest:	405	451	475
Hunters:	1,149	1,159	1,200
Hunter Success:	35%	39%	40%
Active Licenses:	1,201	37%	1,200
Active License Percentage:	34%	37%	40%
Recreation Days:	9,019	8,987	9,000
Days Per Animal:	22.3	19.9	18.9
Males per 100 Females:	29	28	
Juveniles per 100 Females	30	36	

Trend Based Objective (± 20%) 2,500 (2000 - 3000)

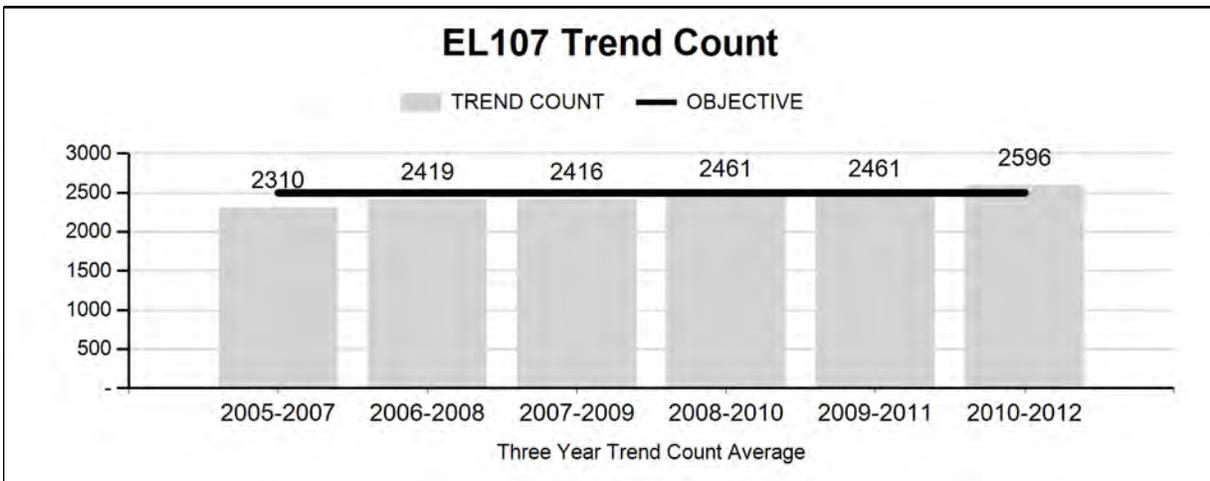
Management Strategy: Recreational

Percent population is above (+) or (-) objective: 8%

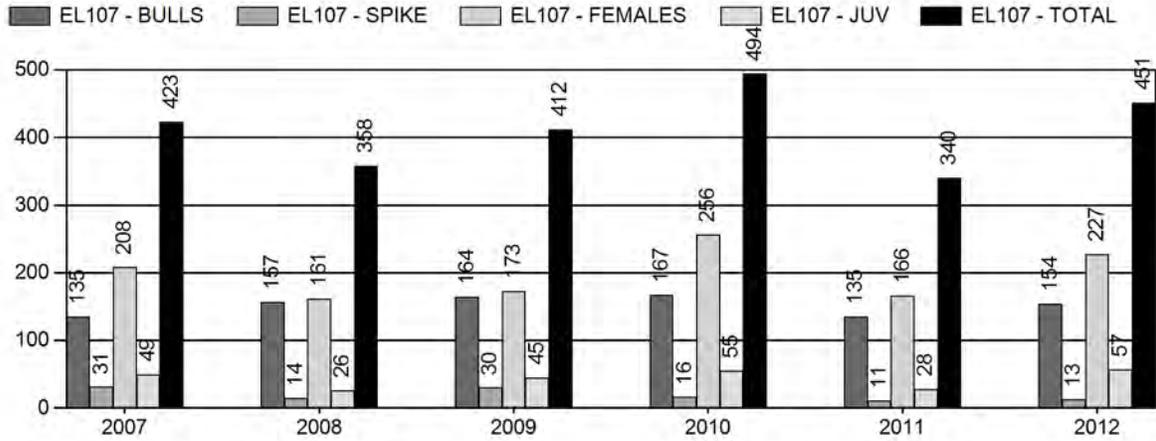
Number of years population has been + or - objective in recent trend: 0

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

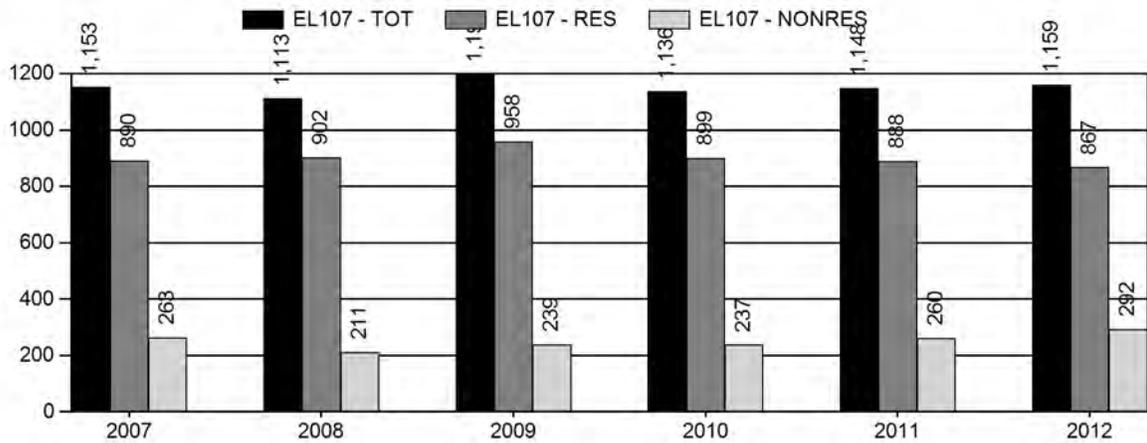
	<u>JCR Year</u>	<u>Proposed</u>
Females ≥ 1 year old:	0%	0%
Males ≥ 1 year old:	0%	0%
Juveniles (< 1 year old):	0%	0%



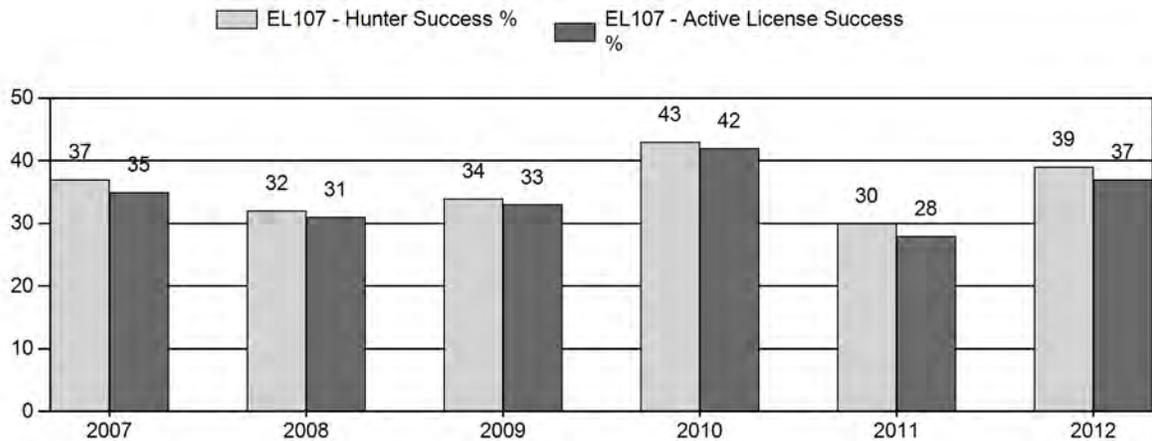
Harvest



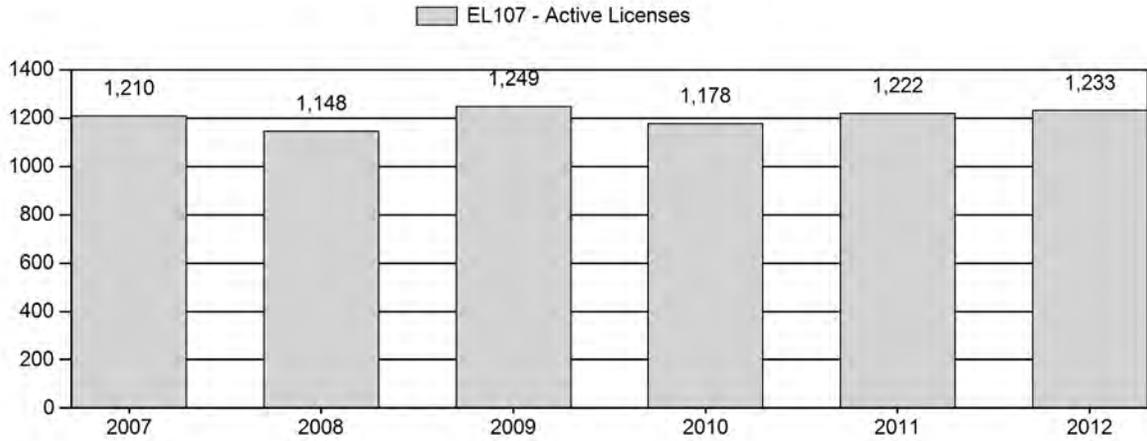
Number of Hunters



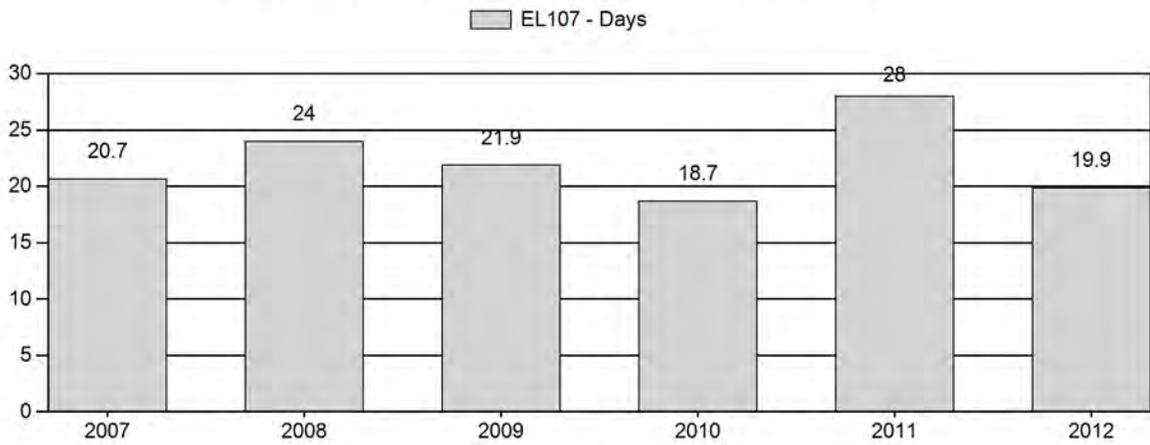
Harvest Success



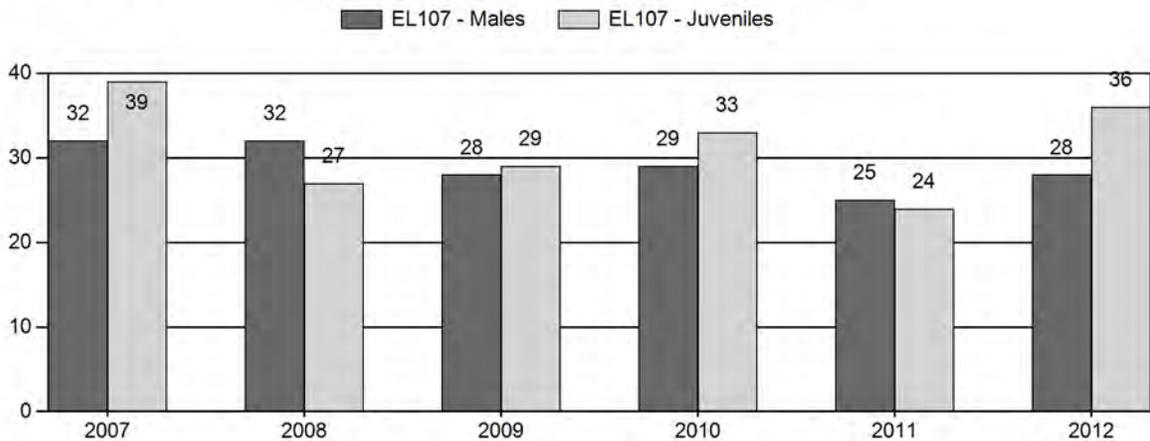
Active Licenses



Days per Animal Harvested



Postseason Animals per 100 Females



2007 - 2012 Postseason Classification Summary

for Elk Herd EL107 - UPPER GREEN RIVER

Year	Post Pop	MALES				FEMALES		JUVENILES		Tot CIs	Cls Obj	Males to 100 Females			Young to			
		Ylg	Adult	Total	%	Total	%	Total	%			Yng	Adult	Total	Conf Int	100 Fem	Conf Int	100 Adult
2007	2,452	181	241	422	19%	1,326	58%	519	23%	2,267	711	14	18	32	± 0	39	± 0	30
2008	2,688	180	318	498	20%	1,561	63%	422	17%	2,481	380	12	20	32	± 0	27	± 0	20
2009	2,639	134	241	375	18%	1,328	64%	384	18%	2,087	337	10	18	28	± 1	29	± 1	23
2010	2,550	173	273	446	18%	1,547	62%	506	20%	2,499	393	11	18	29	± 0	33	± 0	25
2011	2,621	159	270	429	17%	1,736	67%	417	16%	2,582	274	9	16	25	± 0	24	± 0	19
2012	0	180	278	458	17%	1,649	61%	599	22%	2,706	441	11	17	28	± 0	36	± 0	28

2013 Seasons – Upper Green River Elk Herd Unit (E107)

Hunt Area	Type	Opens	Closes	Quota	Limitations
93	1	Oct. 1	Oct. 31	175	Limited quota; any elk
		Nov. 1	Nov. 20		Unused Area 93 Type 1 licenses; antlerless elk
	4	Oct. 1	Nov. 20	50	Limited quota; antlerless elk,
	6	Oct. 1	Nov. 20	250	Limited quota; cow or calf
95	1	Oct. 15	Nov. 5	200	Limited quota; any elk
	2	Oct. 1	Nov. 5	30	Limited quota; any elk valid only in that portion of the Green River drainage that is upstream from the outlet of Lower Green River Lake including that portion east and south of Mill Creek
	4	Oct. 15	Nov. 5	200	Limited quota; antlerless elk
	5	Oct. 1	Oct. 14	25	Limited quota; antlerless elk valid only in that portion of the Green River drainage that is upstream from the outlet of Lower Green River Lake including that portion east and south of Mill Creek
		Oct. 15	Nov. 5		Unused Area 95 Type 5 licenses valid for entire area, antlerless elk
	6	Oct. 15	Nov. 5	75	Limited quota; cow or calf
96	Gen	Oct. 15	Oct. 31		General license; any elk
	1	Oct. 1	Oct. 31	200	Limited quota; any elk
		Nov. 1	Nov. 20		Unused Area 96 Type 1 licenses; antlerless elk
	4	Oct. 1	Nov. 20	50	Limited quota; antlerless elk
6	Oct. 1	Nov. 20	200	Limited quota; cow or calf	
Archery Seasons					
93, 95, 96		Sept. 1	Sept. 30		Refer to Section 3

Hunt Area	License Type	Quota Changes from 2012
95	1	+25
95	4	-100
95	6	+25
96	6	+50
Herd Unit Total	1	+25
	4	-100
	6	+75

Management Evaluation

Current Mid-Winter Trend Count Management Objective: 2,500

Management Strategy: Recreational

2012 Trend Count: 2706

Most Recent 3-year Running Average Trend Count: 2569

The Green River Herd Unit encompasses approximately 837 square miles of occupied elk habitat, almost entirely within Sublette County. Hunt Area 93 (Waterdog Lakes), Area 95 (Green River), and Area 96 (New Fork) make up the Green River Herd Unit. This herd unit is managed under a mid-winter trend objective of 2,500 ($\pm 20\%$) with a herd estimate derived from 3-year trend count average on feedgrounds and native range combined. This herd is managed under “recreational” management, with a management objective for a bull: 100 cow ratio between 15 to 29.

Herd Unit Issues

Managers believe a very high proportion (90+ %) of elk are typically counted in this herd unit and are located on feedgrounds during the winter. This is an extremely “leaky” herd unit and as a result, a population model has not been successfully developed. The amount of elk movement from this herd unit makes simple hand calculations difficult, typically resulting in bull and calf ratios (modeled verses observed), which do not track well from one year to the next. Large carnivores (wolves and grizzly bears) have reduced hunter participation in the northern portion of this herd unit, and are likely impacting elk productivity/survival. Lack of public access on private lands in Area 93 is limiting harvest and compromising harvest goals.

Weather

Three elk feedgrounds (Green River Lakes, Black Butte, and Soda Lake) are located within this herd unit to winter animals that otherwise would not be able survive the harsh winter conditions. Heavy snow loads typically make most native forage unavailable on most winters.

Habitat

Roughly 43 square miles of native winter range have been identified, which is mainly located in the upper Green River drainage near Pinyon Ridge and Osborn Mountain that winters approximately 200 elk on recent years. Since over 90% of the elk rely on supplemental feeding (feedgrounds) within this herd unit, winter and other seasonal habitats is not considered to be limiting herd dynamics.

Field Data

The 2012 elk trend count was 2,706, showing an increasing trend compared to the previous three years and the highest count in the past 10 years (Table 1). Snow conditions were below normal during 2012, resulting in a few more elk on native winter range than compared to 2010 and 2011. The higher trend count in 2012 is attributed to low harvest rates during the 2011 and 2012 hunting season. Winter conditions, habitat conditions, wolf activity, and timing of classification surveys have resulted in fluctuating trend count data on all three feedgrounds and native winter ranges in past years.

Table 1. Trend Count Information for the Upper Green River Elk Herd Unit, 2003-2012.

Location	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Green River Lakes F.G	504	358	556	545	615	591	0	606	532	572
Black Butte F.G	577	723	882	616	815	1072	959	405	751	847
Soda Lake F.G.	551	313	577	856	714	650	0	1417	1144	1103
N.W.R.	<u>238</u>	<u>525</u>	<u>240</u>	<u>295</u>	<u>220</u>	<u>268</u>	<u>1344</u>	<u>71</u>	<u>155</u>	<u>184</u>
Herd Unit	1870	1919	2255	2312	2364	2581	2303	2499	2582	2706

Composition counts during 2012 revealed a bull:cow:calf ratio of 28:100:36. The 2012 bull ratio was similar and the calf ratio was higher compared to the 5-year average of 29:100:36. The 2012 bull ratio is adequate and within management goals and the calf ratio indicates growth potential for 2013.

Harvest Data

The 2012 harvest report indicated total elk harvest of approximately 450 (280 antlerless and 170 bulls), and increase from the low harvest of 340 elk (194 antlerless and 146 bulls) reported in 2011, but lower than the total harvest of 494 elk (311 antlerless and 183 bulls) in 2010. The 2011 reported harvest is the lowest during the past 10+ years. During 2012, 37% of the hunters were successful in harvesting an elk and averaged 20 days for every animal taken, resulting in better than average success at 34% and 22 days/harvest for the previous 5-year averages. The only hunting seasons changes during 2012, was the addition of 50 cow/calf licenses (Type 6) in Area 95, compared to 2011.

Population

Starting in 2012 a mid-winter trend count will be utilized to manage this herd unit instead a hand-derived population model estimates. This is an extremely “leaky” herd unit and as a result, a functional computer simulation model has never been developed. The mid-winter trend objective for this herd is 2,500 elk ($\pm 20\%$). The 2010-2012 3-year trend average is 2,596 elk, which is within this herd objective.

Management Summary

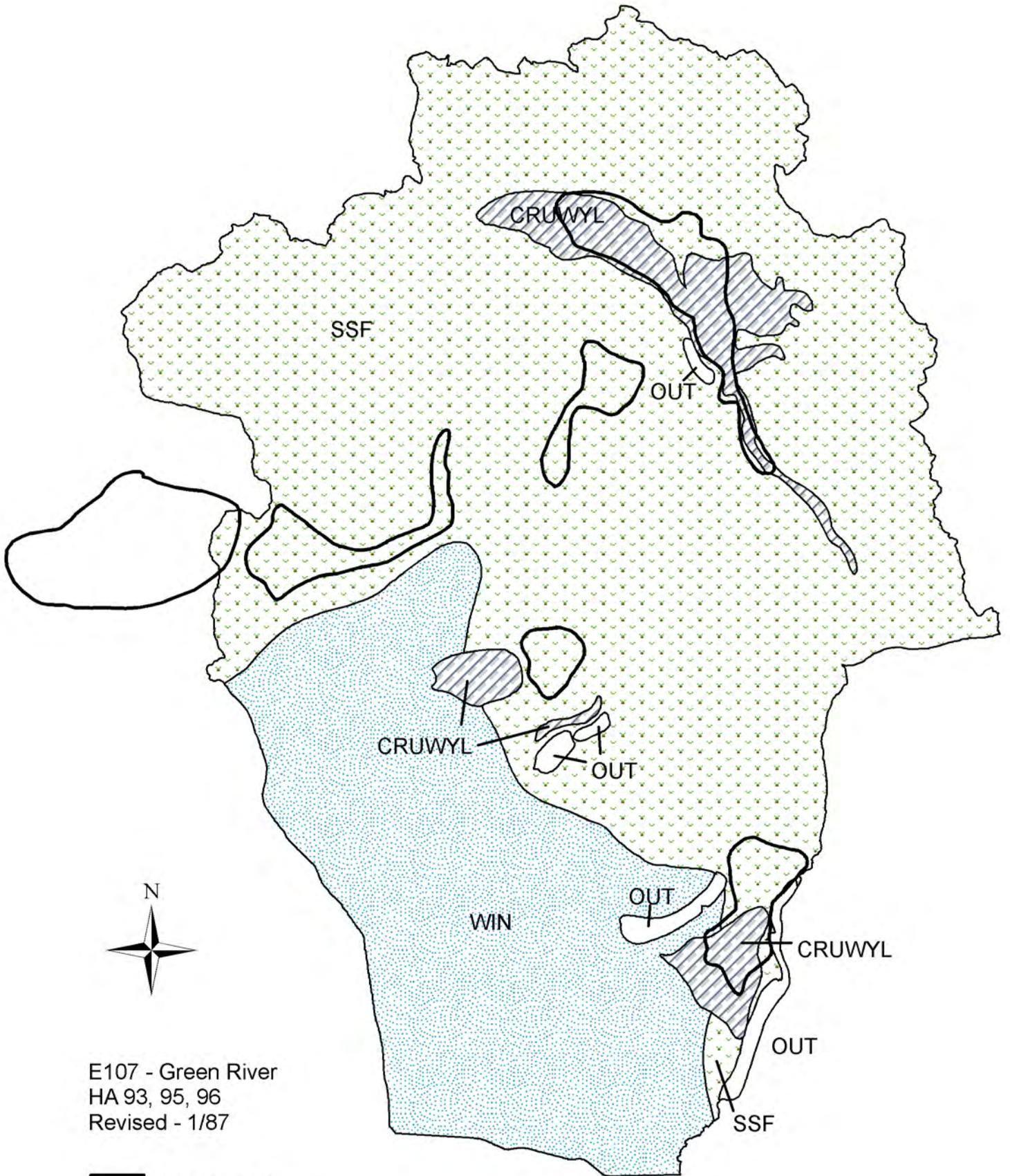
This is an extremely leaky herd unit, and as a result, a functional computer simulation model has not been developed. The recent trend count increases are mainly attributed to very low harvest rates during the 2011 hunting season and lower than predicted harvest in 2012. Overall, the data collected annually in this herd unit has indicated slow population increases since 2003 with the current population within management objectives for this herd unit. Seasons were structured

during 2004 and 2005 to reduce overall harvest in Area 96 to build elk in that area. The 2006 - 2008 seasons were intended to slightly increase antlerless harvest. The 2009 - 2012 seasons were also designed to slightly increase antlerless harvest which has been somewhat successful at achieving that goal. Hunter participation has declined in portions of this herd unit, specifically the northern portions of Areas 93 and 95, although it appears predation from wolves and bears may be compensating for lower hunter/harvest rates in those areas.

The 2013 seasons for the Upper Green River Herd Unit are designed to maintain harvest rates and harvest proportions similar to 2010 -2012. The same October 1 – November 20 season with no changes in limited quotas licenses (175 Type 1 and 300 Type 4 & 6) for Area 93.

In Area 95, the same season length (October 15 – November 5) with a few changes were made in limited quota licenses to align with license demands and slightly increase harvest opportunities. The quotas of 30 (Type 2), and 25 (Type 5) will remain the same. An increase of 25 Type 1 licenses (n=200) and 25 Type 6 licenses (n=75) will be available in 2013. A reduction of 100 (Type 4) licenses (n=200) was made as only half these licensed (150) have sold during the past two years.

The 2013 seasons in Area 96 will remain similar as in 2012, season length of October 1 to November 20 for antlerless elk harvest opportunities for limited quota licenses. In 2013, limited quota licenses will remain at 200 (Type 1), 50 (Type 4), but an increase to 200 (+50) Type 6 licenses. As in the past, general license hunting in Area 96 will remain open from October 15 – October 31 for any elk. A projected harvest of 475 elk (175 bulls, 250 cows, and 50 calves) for 2013 should result in a post season 2012 population of approximately 2,700 elk.



E107 - Green River
 HA 93, 95, 96
 Revised - 1/87

 Parturition Area

2012 - JCR Evaluation Form

SPECIES: Elk
 HERD: EL108 - PINEDALE
 HUNT AREAS: 97-98

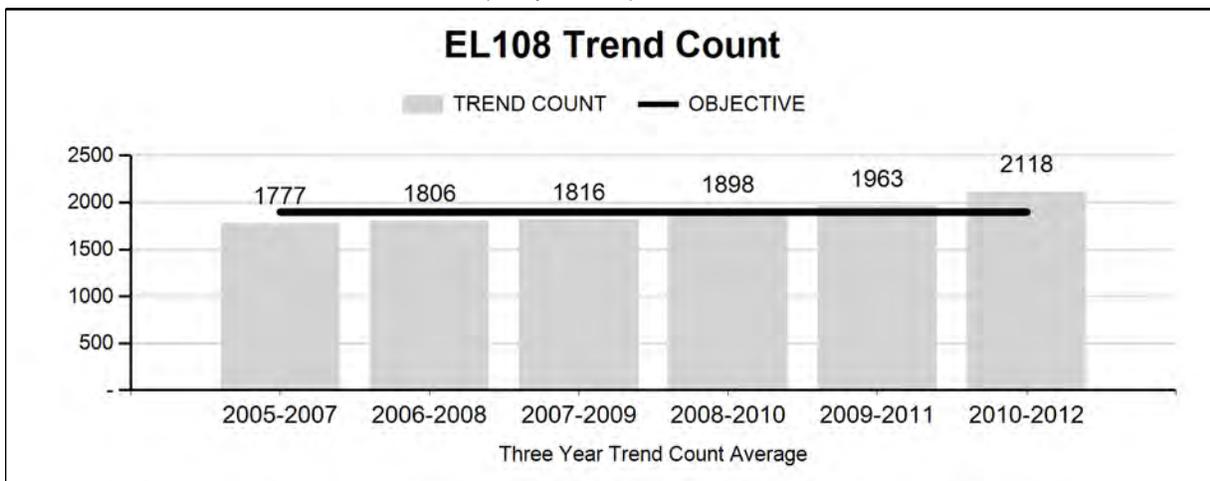
PERIOD: 6/1/2012 - 5/31/2013
 PREPARED BY: DEAN CLAUSE

	<u>2007 - 2011 Average</u>	<u>2012</u>	<u>2013 Proposed</u>
Trend Count:	1,909	2,253	2,104
Harvest:	366	554	565
Hunters:	1,212	1,304	1,450
Hunter Success:	30%	42%	39%
Active Licenses:	1,232	41%	1,450
Active License Percentage:	30%	41%	39%
Recreation Days:	7,306	8,604	9,500
Days Per Animal:	20.0	15.5	16.8
Males per 100 Females:	25	19	
Juveniles per 100 Females	26	33	

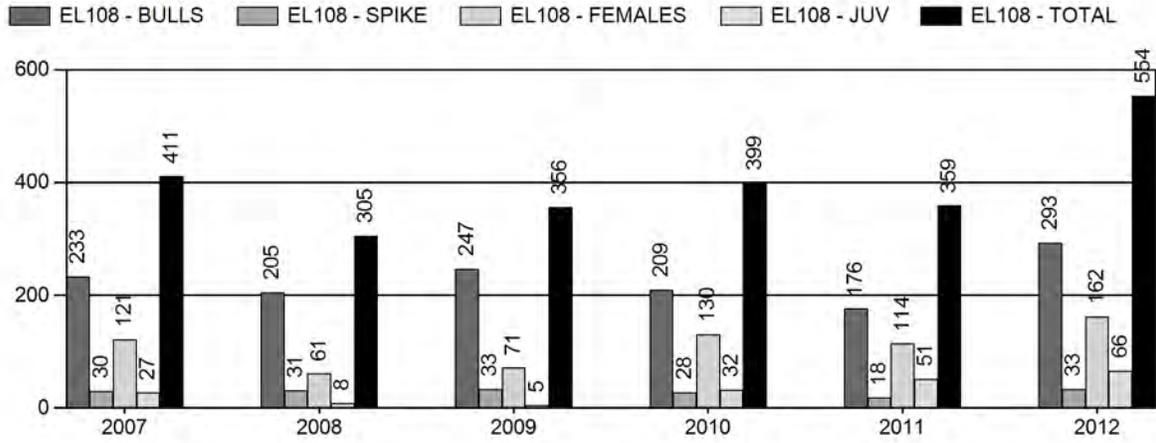
Trend Based Objective (± 20%) 1,900 (1520 - 2280)
 Management Strategy: Recreational
 Percent population is above (+) or (-) objective: 19%
 Number of years population has been + or - objective in recent trend: 0

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

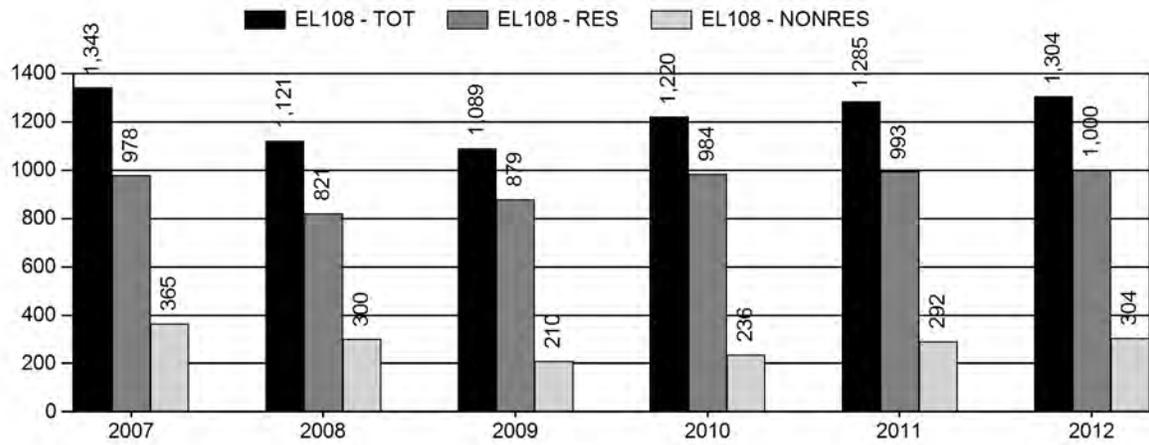
	<u>JCR Year</u>	<u>Proposed</u>
Females ≥ 1 year old:	0%	0%
Males ≥ 1 year old:	0%	0%
Juveniles (< 1 year old):	0%	0%



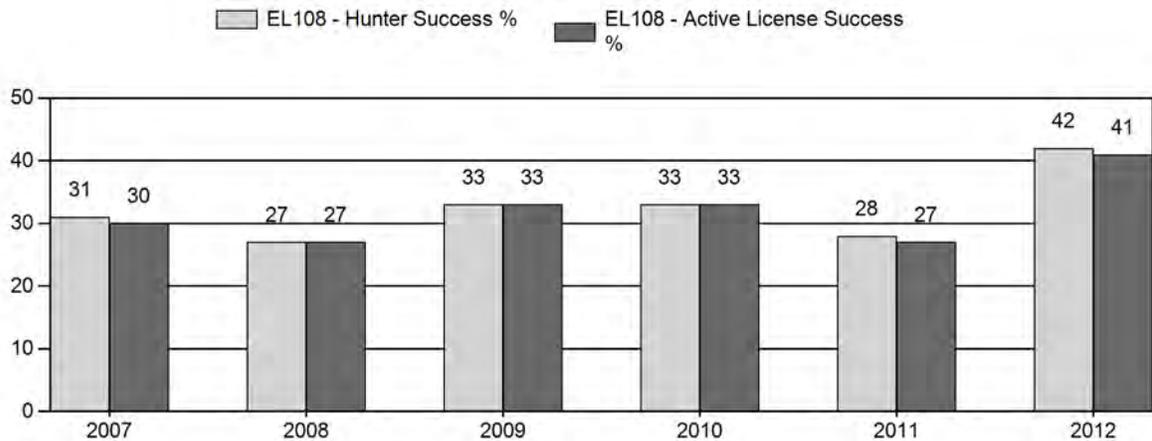
Harvest



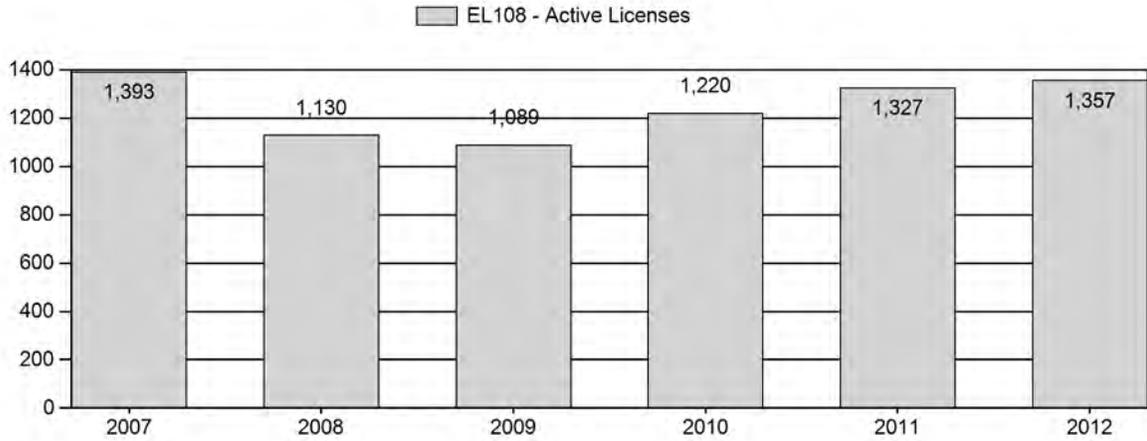
Number of Hunters



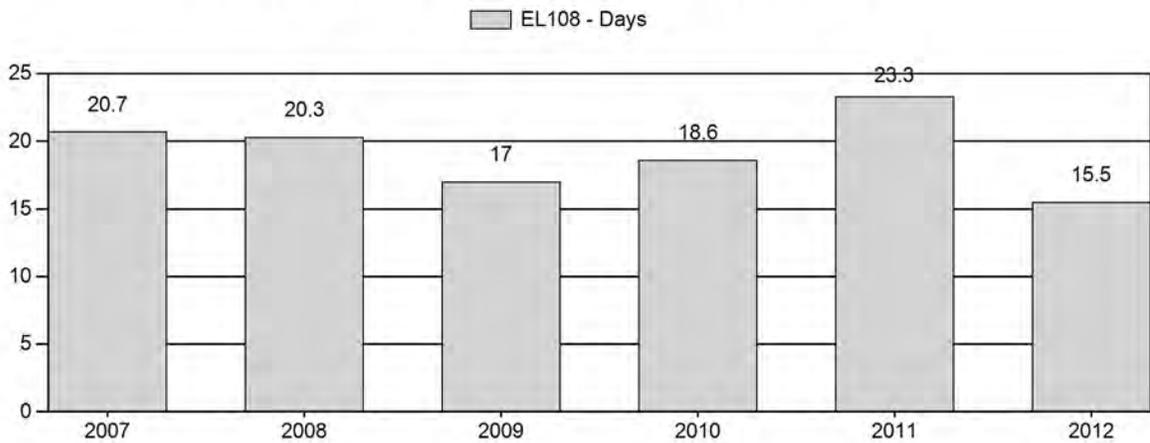
Harvest Success



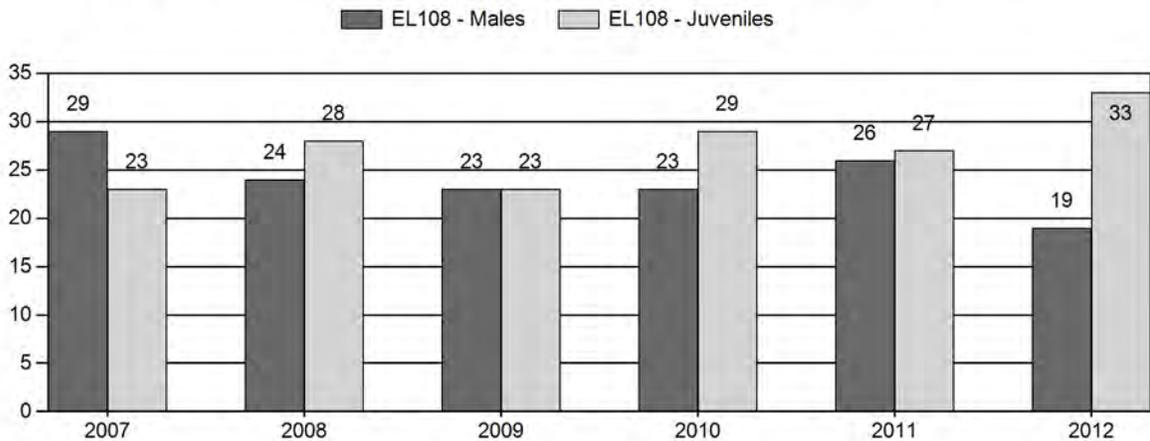
Active Licenses



Days per Animal Harvested



Postseason Animals per 100 Females



2007 - 2012 Postseason Classification Summary

for Elk Herd EL108 - PINEDALE

Year	Post Pop	MALES				FEMALES		JUVENILES		Tot CIs	Cls Obj	Males to 100 Females			Young to			
		Ylg	Adult	Total	%	Total	%	Total	%			Yng	Adult	Total	Conf Int	100 Fem	Conf Int	100 Adult
2007	1,741	103	208	311	19%	1,057	65%	246	15%	1,614	455	10	20	29	± 0	23	± 0	18
2008	2,006	102	193	295	16%	1,239	66%	351	19%	1,885	303	8	16	24	± 0	28	± 0	23
2009	1,980	90	187	277	16%	1,203	69%	273	16%	1,753	240	7	16	23	± 0	23	± 0	18
2010	2,000	102	186	288	15%	1,253	66%	366	19%	1,907	315	8	15	23	± 0	29	± 0	24
2011	2,168	144	219	363	17%	1,401	66%	374	17%	2,138	296	10	16	26	± 0	27	± 0	21
2012	0	120	149	269	13%	1,404	66%	457	21%	2,130	368	9	11	19	± 0	33	± 0	27

2013 Seasons – Pinedale Elk Herd Unit (EL108)

Hunt Area	Type	Opens	Closes	Quota	Limitations
97	Gen	Oct. 1	Oct. 15		General license; any elk
		Oct. 16	Nov. 15		General license; antlerless elk
	1	Sept. 20	Oct. 31	300	Limited quota; any elk
		Nov. 1	Nov. 15		Unused Area 97 Type 1 licenses valid for antlerless elk
	6	Sept. 20	Nov. 15	125	Limited quota; cow or calf elk
98	Gen	Oct. 1	Oct. 15		General license; any elk
		Oct. 16	Nov. 15		General license; antlerless elk
	1	Sept. 20	Oct. 31	350	Limited quota; any elk
		Nov. 1	Nov. 15		Unused Area 98 Type 1 licenses valid for antlerless elk
		Jan. 16	Jan. 31		Unused Area 98 Type 1 licenses valid for any elk on those lands enrolled in the Chimney Butte Hunter Management Area (HMA permission slip for ANY ELK required and limited)
	4	Sept. 20	Nov. 15	75	Limited quota; antlerless elk
	6	Sept. 20	Nov. 15	275	Limited quota; cow or calf elk
		Nov. 16	Jan. 31		Unused Area 98 Type 1, Type 4, and Type 6 licenses valid for antlerless elk in that portion of Area 98 between the Scab Creek and the East Fork River drainage, excluding Irish Canyon Creek and Muddy Creek Drainages.
Archery Seasons					
97,98		Sept. 1	Sept. 19		Refer to Section 3

Hunt Area	License Type	Quota Changes from 2012
97	6	+50
98	6	+100
Herd Unit Total	6	+150

Management Evaluation

Current Mid-Winter Trend Count Management Objective: 1,900

Management Strategy: Recreational

2012 Trend Count: 2253

Most Recent 3-year Running Average Trend Count: 2118

The Pinedale Herd Unit encompasses approximately 2,474 square miles of which only 522 square miles are considered occupied elk habitat. Only a small portion of this herd unit, located on the south end, is located in Sweetwater County, while the majority lies in Sublette County. Hunt Area 97 (Pinedale) and Area 98 (Boulder) make up the Pinedale Herd Unit. This herd unit is managed under a mid-winter trend objective of 1,900 ($\pm 20\%$) with a herd estimate derived from 3-year trend count average on feedgrounds and native range combined. This herd is managed under “recreational” management, with a management objective for bull: 100 cow ratio between 15 to 29.

Herd Unit Issues

Managers believe a very high proportion (90+ %) of elk are typically counted in this herd unit and are located on feedgrounds during the winter. This is an extremely “leaky” herd unit and as a result, a population model has not been successfully developed. The amount of elk movement from this herd unit makes simple hand calculations difficult, typically resulting in bull and calf ratios (modeled verses observed), which do not track well from one year to the next. Well over half of these Forest Service managed lands are designated as Wilderness (Bridger Wilderness) where access is limited to foot or horseback travel. The remaining Forest Service lands outside wilderness have moderate vehicle and trail access. Hunting opportunities for self-guided non-residents is limited in this herd unit because non-residents are required by law to have a licensed guide or outfitter while hunting in designated wilderness areas. Lack of public access on private lands in Area 98 along Scab and Silver Creeks provides a “refuge” for elk, continuing to limit harvest and compromising female elk harvest goals.

Weather

Three elk feedgrounds (Fall Creek, Scab Creek, and Muddy Creek) are located within this herd unit to winter animals that otherwise would not be able survive the harsh winter conditions.

Feedgrounds also reduce depredation to stored hay and reduce risk of disease transmission to livestock (primarily brucellosis).

Habitat

Roughly 32 square miles of crucial native winter range have been identified in this herd unit, wintering roughly 100-150 elk in recent years. Since over 90% of the elk rely on supplemental feeding (feedgrounds) within this herd unit, winter and other seasonal habitats are not limiting herd dynamics.

Field Data

The 2012 elk trend count of 2,253 was higher than any of the past 10 years (Table 1). Snow conditions were below normal during 2012, resulting in elk foraging away from feedground locations on occasion, although over 90% of the elk were still counted on the three feedgrounds located within this herd unit (Table 1). The low trend count in 2009 was a function of mild winter conditions, resulting in a high proportion of elk on native winter habitats and lower elk detection rates on those native habitats during aerial surveys. Normally a low number of elk are documented on native range and managers believe that a high proportion (90+%) of animals are documented annually under normal winter conditions. With the exception of Halfmoon Mountain and surrounding areas, very few elk are typically documented on native winter ranges in the herd unit.

Table 1. Herd Composition Counts in the Pinedale Elk Herd Unit, 2003-2012.

Location	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Fall Creek F.G	547	438	506	529	494	527	0	554	655	675
Scab Creek F.G	710	825	810	750	776	754	600	780	806	912
Muddy Creek F.G.	486	396	431	383	376	510	422	467	557	522
N.W.R.	<u>75</u>	<u>61</u>	<u>111</u>	<u>96</u>	<u>68</u>	<u>154</u>	<u>766</u>	<u>161</u>	<u>120</u>	<u>144</u>
Herd Unit Total	1818	1720	1858	1758	1714	1944	1788	1962	2138	2253

Herd composition counts in 2012 documented a bull:cow:calf ratio of 19:100:36. Compared to 2011 (26:100:27), the bull ratio declined while the calf ratio increased. The previous 5-year average bull:cow:calf ratio was 25:100:26, similar to that observed in 2011, but significantly different in 2012.

Harvest Data

The harvest survey reported approximately 550 total elk taken in 2012, a significant increase from approximately 350 in 2011 and 400 in 2010. The 2008 and 2009 hunting seasons were designed to significantly reduce cow/calf harvest levels to compensate for removal of brucellosis sero-positive female elk during a Test and Removal Pilot Project conducted at all three Pinedale herd unit feedgrounds. Seasons were modified in 2010 to increase female harvest opportunities by adding Type 4 and Type 6 licenses, and allowing general license hunters to harvest “any” elk instead of “antlered” elk, which doubled female harvest in 2010. The combination of mild temperatures and little moisture during the 2011 hunting season contributed to the poor harvest, as seasons were designed to increase female harvest. During the 2012 hunting season it took an average of 15 days to kill an elk with a 41% success rate. During the previous 5 years, hunter effort and success has averaged 20 days/animal harvested and 30% success.

Population

Starting in 2012, a mid-winter trend count will be utilized to manage this herd unit instead a hand-derived population model estimates. This is a “leaky” herd unit and as a result, a functional computer simulation model has not been developed. The mid-winter trend objective for this herd

is 1,900 elk ($\pm 20\%$). The 2010-2012 3-year trend average is 2,118 elk, which is within this herd objective.

Management Summary

This herd unit declined from 2004-2007, recovered during 2008, stabilized somewhat in 2009 and 2010, and increased in 2011 and 2012. Recent counts indicate bull:cow:calf ratios are adequate, although the bull ratio dropped in 2012, corresponding with the highest bull harvest reported in the last 10 years. With season modifications aimed at reducing female harvest during 2008 and 2009, along with lower than expected Test and Slaughter removal of female elk, this herd has remained near the desired population objective of 1,900. With the termination of the Test and Slaughter Program after the 2009-2010 winter, hunting seasons were liberalized to increase harvest opportunities during 2010 -2012. Documented elk numbers have continued to increase during recent years and additional female harvest is needed to keep this herd unit within management objectives. In addition bull harvest increased in 2012 accounting for 59% of the overall harvest.

The 2013 seasons are designed to increase female harvest while reducing opportunities for bull harvest. Limited quota, Type 1 "any" elk licenses in Area 97 will remain at 300 licenses, although the demand for these licenses has been below this level in recent years attributed to limited harvest opportunities outside the Bridger Wilderness. The season length for limited quota Type 1 licenses will remain the same (Sept. 20 – Nov. 15), valid for antlerless elk from Nov 1. – Nov. 15. An increase to 125 (+50) Type 6 licenses will be available, valid from Sept. 20 – Nov. 15 for antlerless elk.

In Area 98, the quota and season length for Type 1 licenses (n=350) will remain the same (Sept. 20 – Nov. 15), valid for antlerless elk from Nov 1. – Nov. 15. Limited quota, Type 4 licenses will remain at 75 and Type 6 licenses will increase to 275(+100) with a Sept. 20 – Nov. 15 season. Similar to past years, further antlerless harvest opportunities will be provided for unused limited quota licenses (Type 1, 4, and 6) from Nov. 16 – Jan 31 between Scab Creek and the East Fork Drainage to address damage and cattle co-mingling issues. As in 2012, a very limited number of hunters will have an opportunity to harvest bulls from Jan. 16 – Jan. 31 on those lands enrolled in the Chimney Butte HMA to address damage concerns from bull elk on private lands.

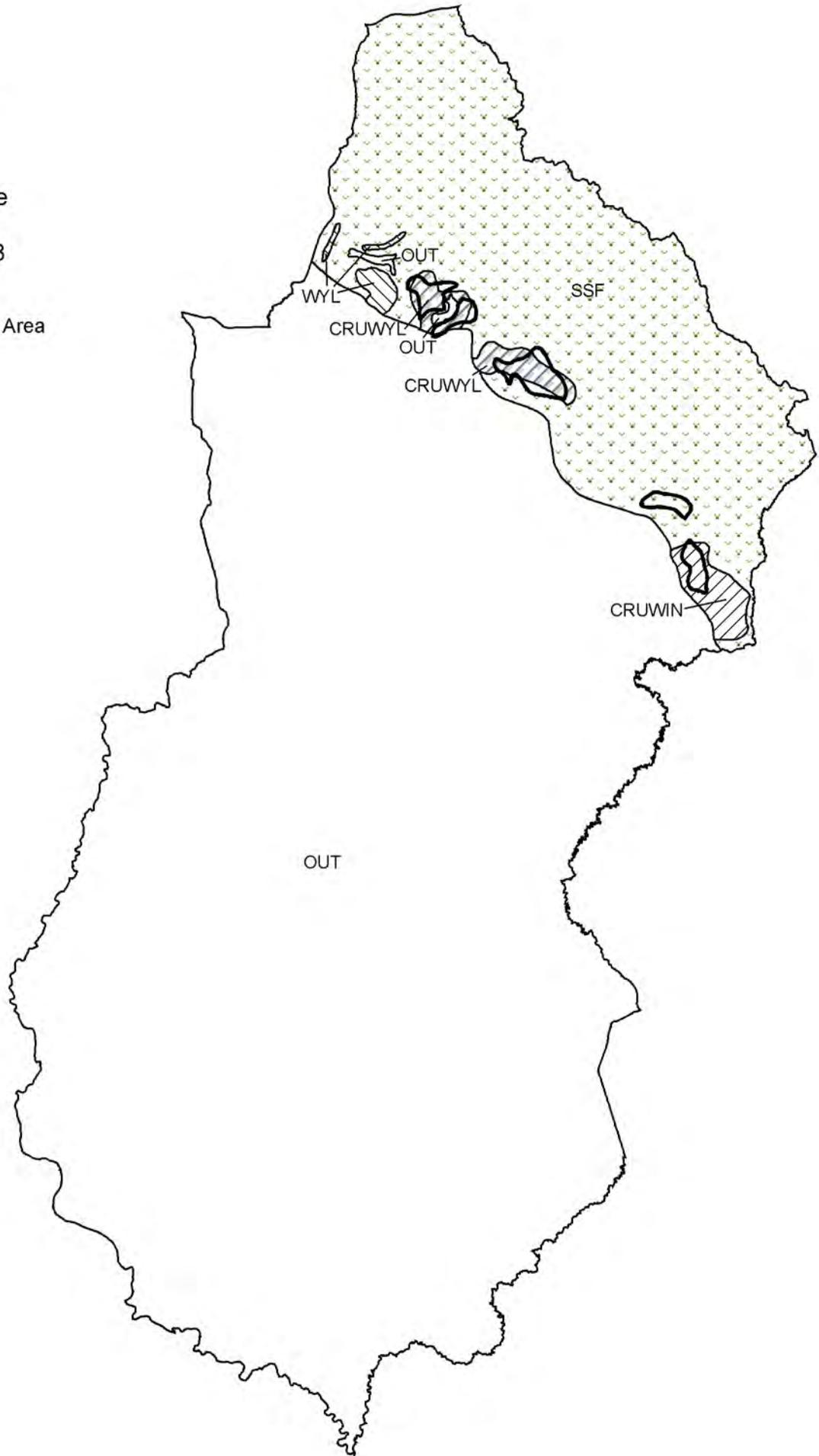
Changes were made for General license seasons in both Area 97 and 98 in 2013. From Oct.1 – Oct. 15 (instead of Oct. 31) General licenses will be valid for "any" elk. From Oct. 16 – Nov. 15 General licenses will be valid for "antlerless" elk

The hunting seasons for 2013 should result in the harvest of approximately 240 bulls, 250 cows, and 50 calves for a total harvest of 540 elk. This season should result in a postseason 2013 trend count estimate of approximately 2,100 elk.



E108 - Pinedale
HA 97, 98
Revised - 12/88

 Parturition Area



2012 - JCR Evaluation Form

SPECIES: Moose

PERIOD: 6/1/2012 - 5/31/2013

HERD: MO105 - SUBLETTE

HUNT AREAS: 3-5, 10, 20-25

PREPARED BY: DEAN CLAUSE

	<u>2007 - 2011 Average</u>	<u>2012</u>	<u>2013 Proposed</u>
Trend Count:	1,172	1,300	1,300
Harvest:	255	215	205
Hunters:	288	245	240
Hunter Success:	89%	88%	85%
Active Licenses:	288	88%	240
Active License Percentage:	89%	88%	85%
Recreation Days:	2,040	1,621	1,550
Days Per Animal:	8	7.5	7.6
Males per 100 Females:	62	65	
Juveniles per 100 Females	41	39	

Trend Based Objective (\pm 20%) 1,200 (960 - 1440)

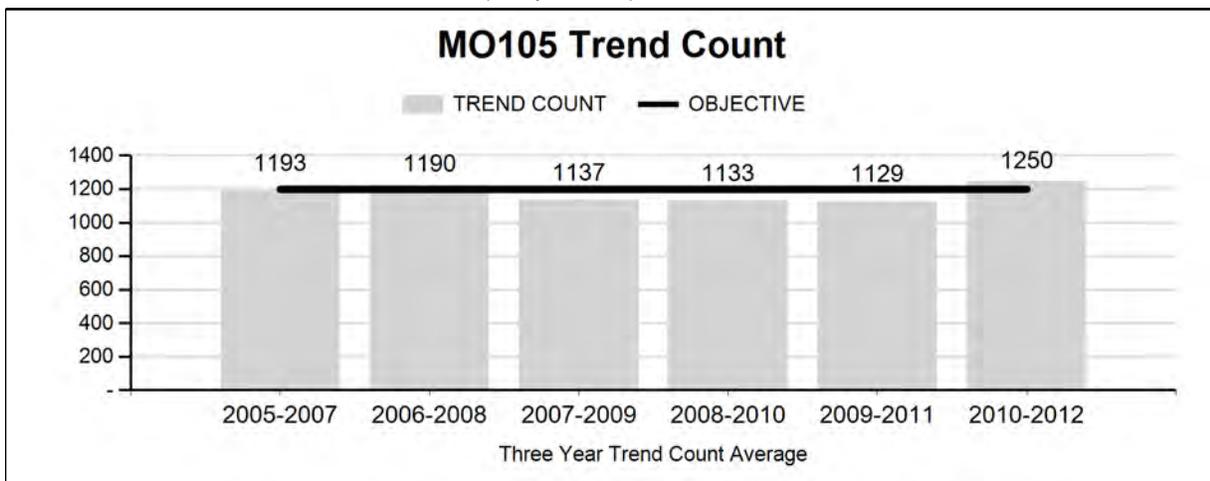
Management Strategy: Special

Percent population is above (+) or (-) objective: 8%

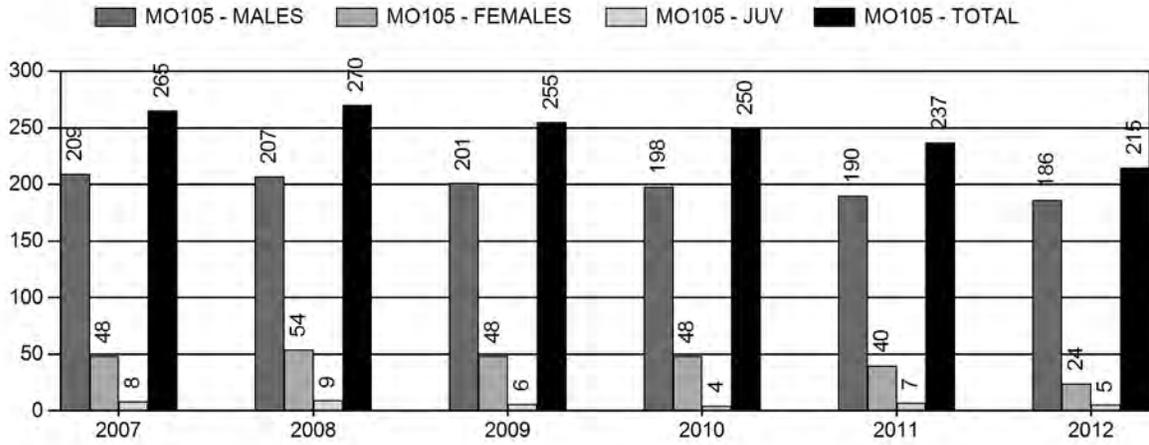
Number of years population has been + or - objective in recent trend: 0

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

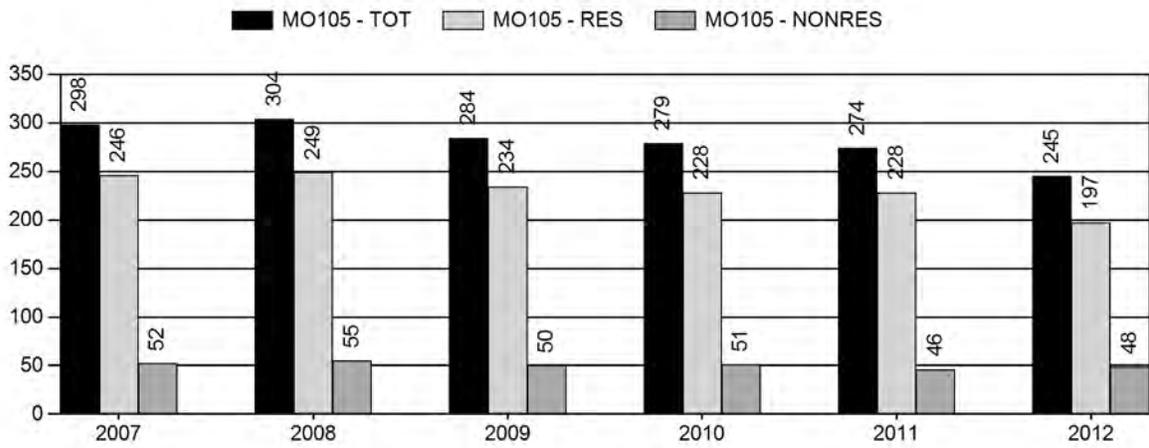
	<u>JCR Year</u>	<u>Proposed</u>
Females \geq 1 year old:	0%	0%
Males \geq 1 year old:	0%	0%
Juveniles (< 1 year old):	0%	0%



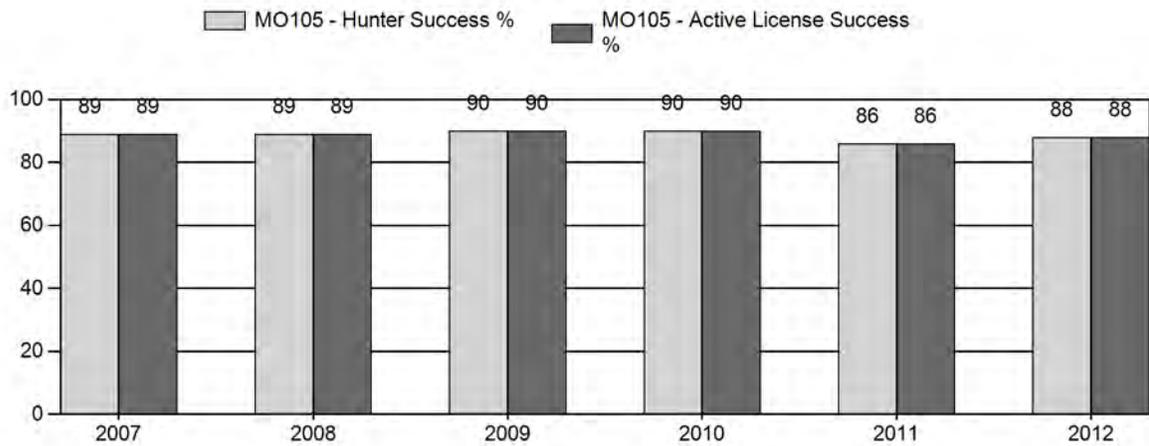
Harvest



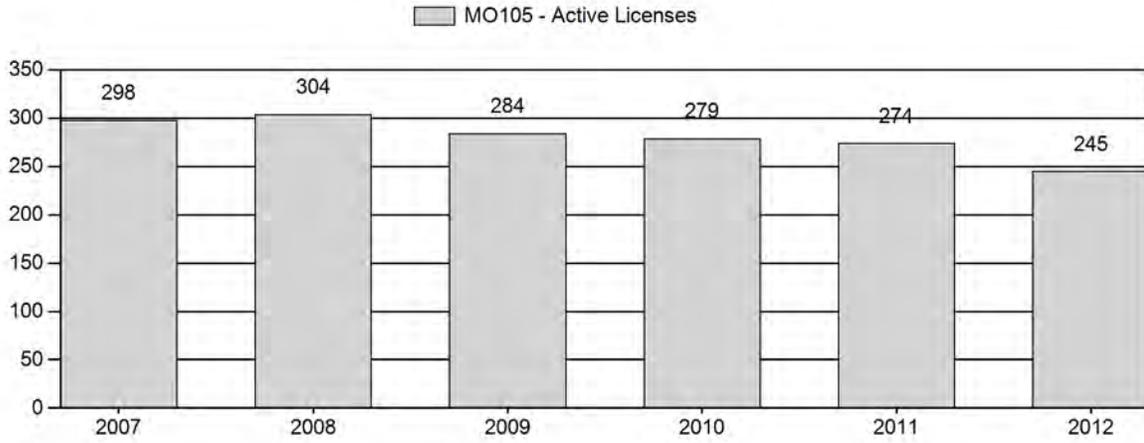
Number of Hunters



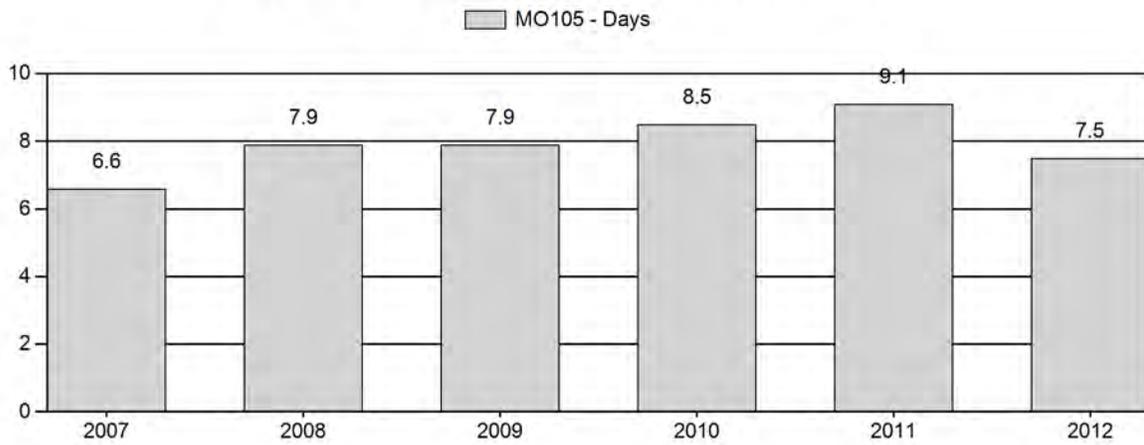
Harvest Success



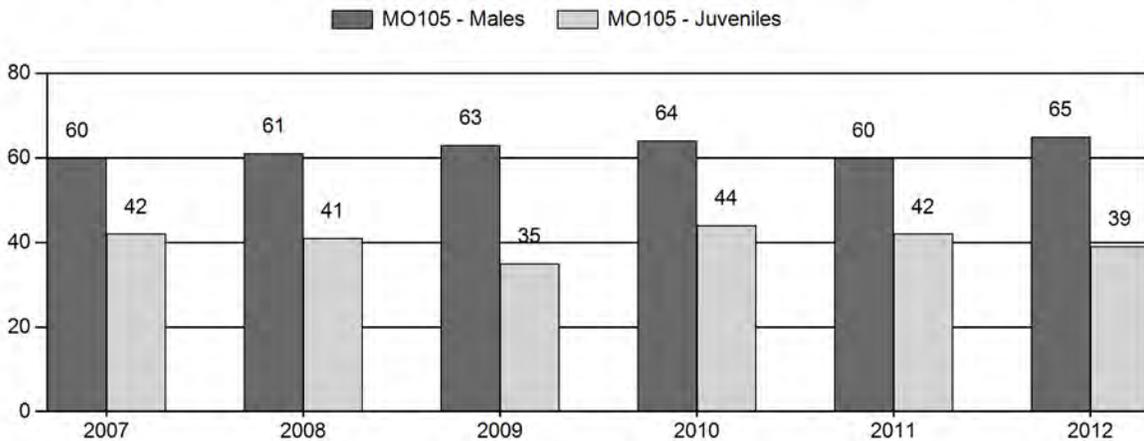
Active Licenses



Days per Animal Harvested



Postseason Animals per 100 Females



2007 - 2012 Postseason Classification Summary

for Moose Herd MO105 - SUBLETTE

Year	Post Pop	MALES				FEMALES		JUVENILES		Tot CIs	Cls Obj	Males to 100 Females			Young to			
		Ylg	Adult	Total	%	Total	%	Total	%			Yng	Adult	Total	Conf Int	100 Fem	Conf Int	100 Adult
2007	4,481	0	350	350	30%	582	50%	243	21%	1,175	992	0	60	60	± 0	42	± 0	26
2008	4,768	0	383	383	30%	629	50%	255	20%	1,267	980	0	61	61	± 4	41	± 3	25
2009	4,701	0	295	295	32%	465	50%	163	18%	923	1,041	0	63	63	± 0	35	± 0	21
2010	4,908	0	361	361	31%	563	48%	246	21%	1,170	1,111	0	64	64	± 0	44	± 0	27
2011	5,000	0	377	377	30%	625	49%	262	21%	1,264	1,016	0	60	60	± 4	42	± 3	26
2012	0	0	413	413	32%	632	49%	247	19%	1,292	1,118	0	65	65	± 0	39	± 0	24

2013 Seasons – Sublette Moose Herd Unit (MO105)

<u>Hunt Area</u>	<u>Type</u>	<u>Opens</u>	<u>Closes</u>	<u>Quota</u>	<u>Limitations</u>
3	1	Sept. 20	Oct. 31	10	Limited quota; antlered moose
4	1	Sept. 20	Oct. 31	10	Limited quota; antlered moose
	4	Sept. 20	Oct. 31	5	Limited quota; antlerless moose
5	1	Oct. 1	Oct. 31	30	Limited quota; antlered moose
	4	Oct. 1	Oct. 31	15	Limited quota; antlerless moose
10	1	Sept. 10	Oct. 31	15	Limited quota; antlered moose
20	1	Sept. 10	Oct. 31	20	Limited quota; antlered moose
21	1	Sept. 10	Oct. 31	5	Limited quota; antlered moose
22	1	Oct. 1	Oct. 31	15	Limited quota; antlered moose
23	1	Sept. 15	Oct. 31	25	Limited quota; antlered moose
24	1	Oct. 1	Oct. 31	25	Limited quota; antlered moose
	4	Oct. 1	Oct. 31	5	Limited quota; antlerless moose
25	1	Oct. 1	Oct. 31	45	Limited quota; antlered moose
	4	Oct. 1	Oct. 31	15	Limited quota; antlerless moose
Archery Seasons					
3,4		Sept. 1	Sept. 19		Refer to Section 3
5,22,24,25		Sept. 1	Sept. 30		Refer to Section 3
10,20,21		Sept. 1	Sept. 9		Refer to Section 3
23		Sept. 1	Sept. 14		Refer to Section 3

Hunt Area	License Type	Quota Change from 2012
23	4	-5
Herd Unit Totals	4	-5

Management Evaluation

Current Mid-Winter Trend Count Management Objective: 1,200

Management Strategy: Special

2012 Trend Count: 1300

Most Recent 3-year Running Average Trend Count: 1250

The Sublette Moose Herd Unit encompasses approximately 3,306 square miles of occupied moose habitat that lies within portions of Lincoln, Sublette, and Teton Counties. The Wyoming Range and Salt River Range Mountains, along with a portion of the Wind River and Gros Ventre Mountains lie within this herd unit. A total of 10 Hunt Areas (Areas 3, 4, 5, 10, 20, 21, 22, 23, 24, & 25) make up the Sublette Herd Unit. A mid-winter trend objective of 1,200 ($\pm 20\%$) moose is being proposed as a management objective for this herd unit. This herd unit is also under a “special” management strategy to maintain an average harvest age of 4 for bulls as a measure to maintain “trophy” harvest opportunities.

Herd Unit Issues

Undetermined moose deaths have been documented within this herd unit during the past 6 years, typically in the early spring. The significance of these spring mortalities are currently unknown, and it appears other factors besides hunter harvest is slowing population growth. Habitat condition (quality and quantity) may also be impacting this moose herd and recent efforts are investigating habitat use and moose body condition.

Weather

Although winter snow accumulations appear to influence winter trend count data as counts increase at lower elevations on winters with above average snow loads, little is known of other effects of weather on this moose herd. Recent weather trends have been drier and warmer and more specific information can be accessed from the following websites:

<http://www.ncdc.noaa.gov/temp-and-precip/time-series/>

<http://www.ncdc.noaa.gov/oa/climate/research/prelim/drought/pdiimage.html>

Habitat

The main plant community associations in this herd unit are willow, sagebrush, aspen, conifer, and alpine communities from lower to higher elevations (6,500 to 12,500 feet). Moose in this herd unit can be found on both private and public land managed by the U.S. Forest Service and Bureau of Land Management (BLM) during summer and fall periods. During the winter months most moose migrate to lower elevation willow bottom or aspen dominated habitats, typically associated with private lands. Roughly 700 square miles of native winter range have been identified in this herd unit, which encompasses all types of land ownership (private, public, and state trust land).

Habitat assessments were conducted in 2009-2011 within portions of this moose herd unit. Specific information about this habitat assessment along with other ongoing habitat project information can be found at the following source: Please see the [2012 Annual Report Strategic Habitat Plan Accomplishments, Jackson and Pinedale Region sections](#) located at either the Jackson or Pinedale Game & Fish Regional Office for detailed summaries of habitat work within the Sublette Herd Unit.

Field Data

Moose numbers increased during 2012 postseason classification surveys compared to 2011. Snow conditions were below normal during the 2012-2013 winter. A high concentrations of moose at lower elevations in Areas 4 and 25 (Table 1) and fewer moose at higher elevation habitats is typical for winter surveys. Trend counts are influenced by winter snow depths, as an even higher proportion of moose concentrate at lower, usually willow bottom, habitats on heavy snow years, and vacate higher elevation forested habitats where moose observability is poor. Budgeted survey time limits the coverage of forested habitats, concentrating survey efforts to lower elevation habitats where moose congregate and observability is good. Trend counts increased the last two winters (below average snowpack), compared to the 2010 count (above average snowpack) and winter with heavy snow accumulation, and suggests population growth for this herd.

Postseason classification surveys for 2012 produced a bull:100 cow ratio of 65:100, higher than the bull ratio of 60:100 documented in 2011. The 2012 calf: 100 cow ratio declined to 39:100, compared to 42:100 in 2011. The 5-year (2007-2011) average bull:cow:calf ratio for this herd unit is 62:100:41.

Table 1. Trend counts by Hunt Area for the Sublette Moose Herd Unit, 2003-2012.

<u>Hunt Area</u>	<u>2003</u>	<u>2004</u>	<u>2005</u>	<u>2006</u>	<u>2007</u>	<u>2008</u>	<u>2009</u>	<u>2010</u>	<u>2011</u>	<u>2012</u>
3	29	17	29	24	19	11	56	18	38	21
4	243	193	247	248	244	271	212	261	320	319
5	80	119	93	75	76	106	48	100	44	82
10	6	10	18	52	11	7	13	10	8	4
20	22	29	61	13	39	19	10	16	28	13
21	17	4	4	12	10	22	4	30	23	18
22	30	18	11	6	17	28	30	23	27	49
23	38	51	75	60	50	28	60	46	26	52
24	0	0	0	0	0	0	0	0	0	0
<u>25</u>	<u>742</u>	<u>755</u>	<u>749</u>	<u>606</u>	<u>729</u>	<u>788</u>	<u>503</u>	<u>679</u>	<u>754</u>	<u>742</u>
Total	1207	1196	1287	1096	1195	1280	936	1183	1268	1300

Harvest Data

A total harvest of approximately 215 moose (185 bulls and 30 cows/calves) was reported in 2012, lower than the 240 moose (190 bulls and 50 cow/calves) reported in 2012. Harvest has continued to decline slightly during the past 5 years, as managers have continued to make slight reduction in licenses. The total number of licenses issued declined from 630 in 2002 to 245 in 2012, a total decrease of 385 (61%). These reductions in license types equates to declines of 80% (n=185) in antlerless and 50% (n=200) in antlered licenses. Compared to the previous 5-year averages, hunter success remains similar at 88% in 2012, while hunter effort decreased slightly from 8.0 to 7.5 days per animal harvested.

A total of 135 teeth representing approximately 63% of the reported 2012 harvest were aged using cementum annuli analysis. The 2012 tooth age results from the WGFD lab showed an average age of 4.0 (derived from 63% of reported harvest) for bulls and 2.6 (derived from 71% of reported harvest) for cows. Average age of harvest decreased for bulls and significantly

decreased for cows compared to the 2011(Figure 1). The 10 year average (2003-2012) age of harvest for this herd unit is approximately 4.0 years for bulls and 3.9 years for cows (Figure 1).

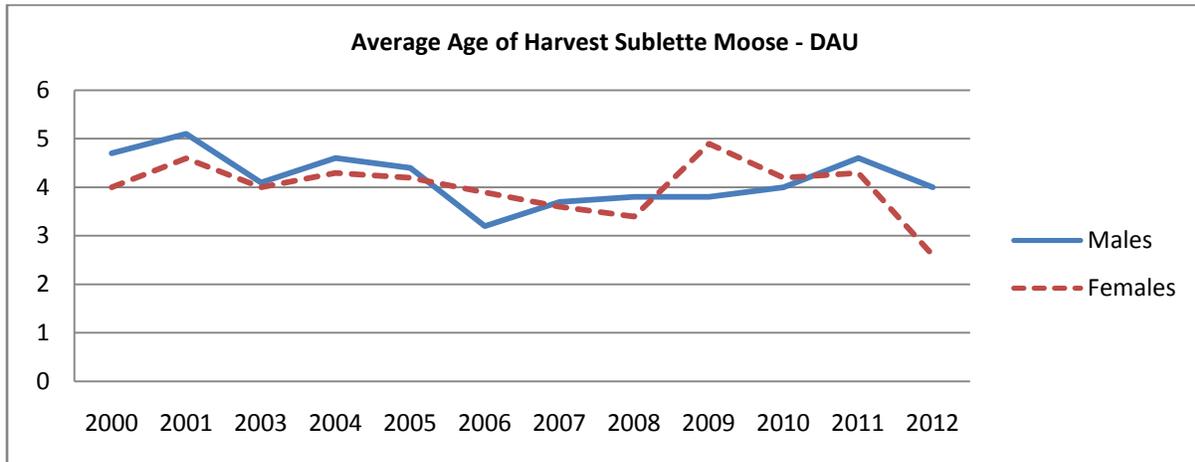


Figure 1. Average age of harvested male and female moose, Sublette Herd Unit, 2000-2012.

Population

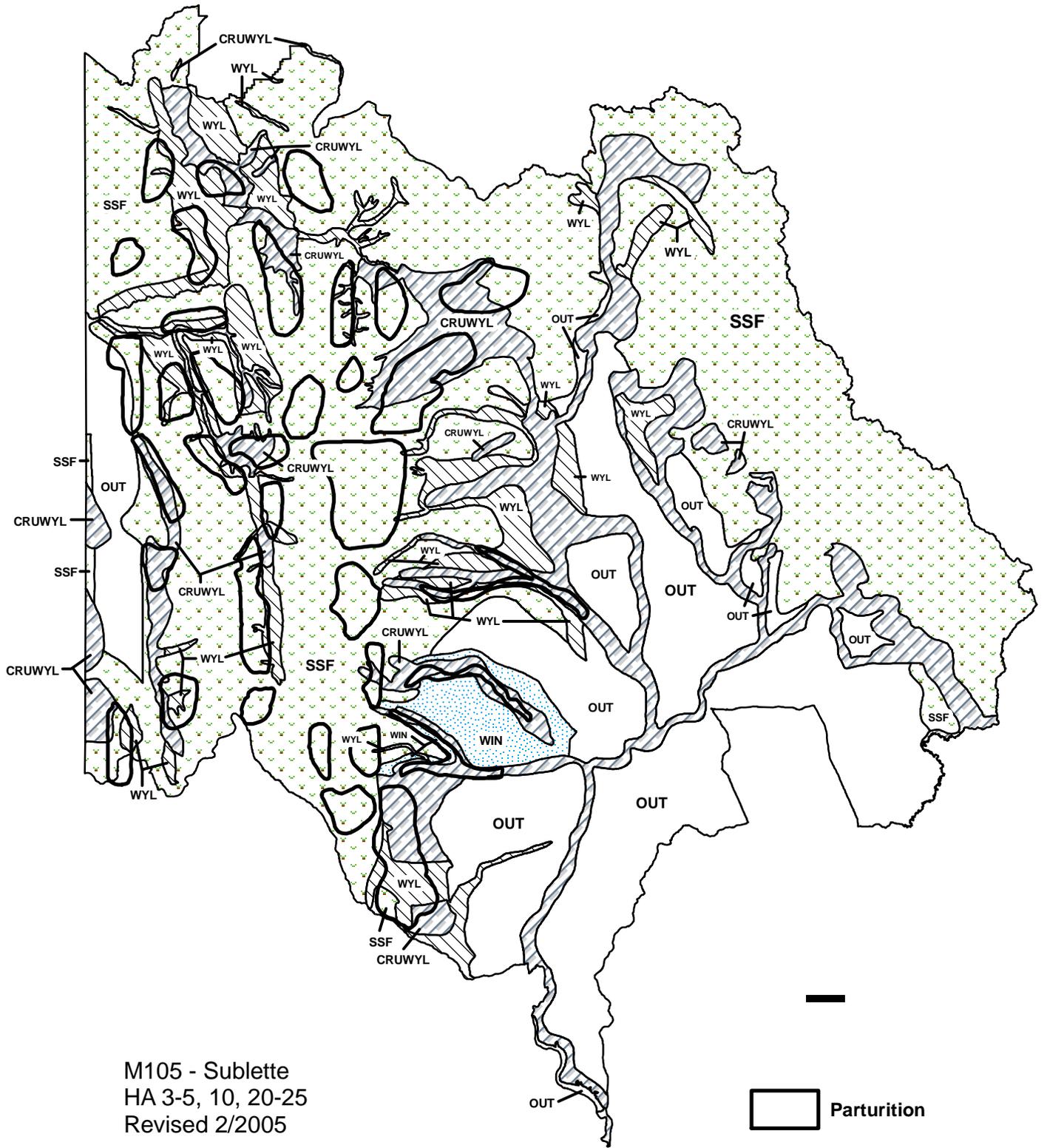
Proposed for 2013, a mid-winter trend count will be used to manage this herd unit instead of past population modeling efforts. The mid-winter trend objective being proposed for this herd is 1,200 moose ($\pm 20\%$), which reflects what average trend counts have been during the past 10 years. The 2012 mid-winter trend count average was 1300 moose and the 3-year average (2010-2012) trend average was 1250.

Past population modeling efforts for this herd have typically produced estimates higher, usually ~75% higher, than what annual trend counts document. Moose managers are proposing going to a mid-winter trend objective, as those trends should reflect population level changes in this herd unit.

Management Summary

Analysis of the current data suggests this postseason moose population was declining in the late 1990's, stabilized in 2004 and 2005, then began slowly increasing through 2012. During 2012, reproduction rates remain good at 39 calves:100 cows, male ratios remained relatively stable at 65 bulls:100cows, trend counts increased, and harvest success remained high at 88%. In addition, average age of harvested males are adequate, maintaining good bull quality throughout the herd unit. Trend data suggest the population is currently stable to slowly increasing.

Only one change, elimination of Type 4 licenses (-5) in Area 23, was made for the 2013 season. A total of 200 Type 1 (antlered) and 40 Type 4 (antlerless) licenses are available for 2013. Anticipated harvest for 2013 is approximately 175 bulls and 30 cows/calves for a total harvest of 205 moose. Given average reproduction, this harvest should result in a 2013 mid-winter trend count near 1300 moose.



2012 - JCR Evaluation Form

SPECIES: Bighorn Sheep
 HERD: BS121 - DARBY MOUNTAIN
 HUNT AREAS: 24

PERIOD: 6/1/2012 - 5/31/2013
 PREPARED BY: GARY FRALICK

	<u>2007 - 2011 Average</u>	<u>2012</u>	<u>2013 Proposed</u>
Population:	54	60	60
Harvest:	1	0	0
Hunters:	1	1	0
Hunter Success:	100%	0%	0%
Active Licenses:	1	1	0
Active License Percent:	100%	0%	0%
Recreation Days:	2	1	0
Days Per Animal:	2	0	0
Males per 100 Females	68	NA	
Juveniles per 100 Females	50	NA	

Population Objective: 150
 Management Strategy: Special
 Percent population is above (+) or below (-) objective: -60%
 Number of years population has been + or - objective in recent trend: 12
 Model Date: 2/23/2013

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

	<u>JCR Year</u>	<u>Proposed</u>
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



2013 BIGHORN SHEEP HUNTING SEASONS

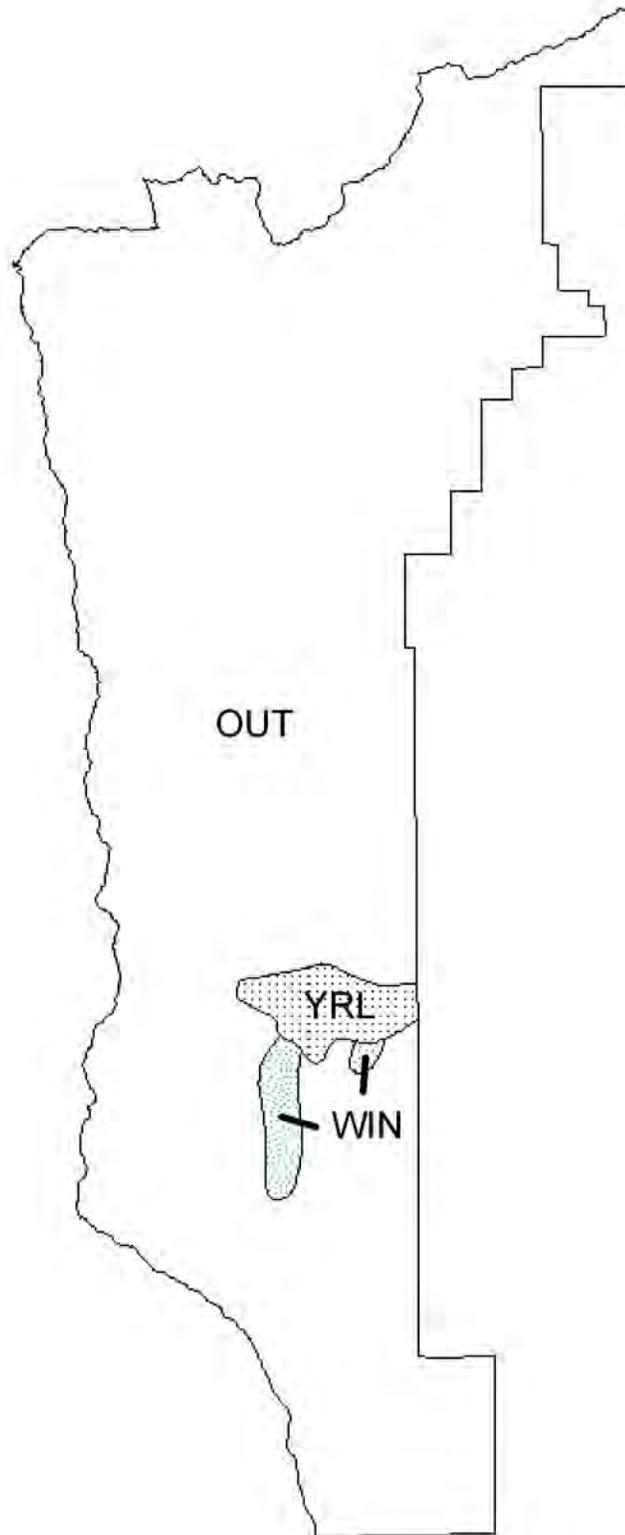
DARBY MOUNTAIN HERD UNIT - BHS121

<u>HUNT AREA</u>	<u>TYPE</u>	<u>OPENS</u>	<u>CLOSES</u>	<u>LIMITATIONS</u>
24	+	Closed		

MANAGEMENT EVALUATION

The Darby Mountain bighorn sheep herd population objective is 150 sheep. The objective was established in 1991.

The 2013 bighorn sheep hunting season for Hunt Area 24 was closed. Due to the lack of mature rams, low lamb numbers and poor recruitment of sheep into older age classes, the Department closed this hunt area for the immediate future. One license was available for this hunt area from 2008 to 2012 and 4 total rams were harvested. In 2012, the one licensed hunter observed very few sheep and could not find a mature ram after 15 total days of hunting. The lack of sheep observed by the hunter is consistent with Department field surveys over the past several years. In 2012, a mid-winter helicopter survey yielded only 37 total sheep in this Hunt Area. In 1998, this Hunt Area was also closed to hunting when total sheep numbers and availability of mature rams declined below acceptable levels.



BHS 121- Darby Mtn.
HA 24
Revised 7/02