

2012 - JCR Evaluation Form

SPECIES: White tailed Deer
 HERD: WD706 - BLACK HILLS
 HUNT AREAS: 1-6

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

PREPARED BY: JOE SANDRINI

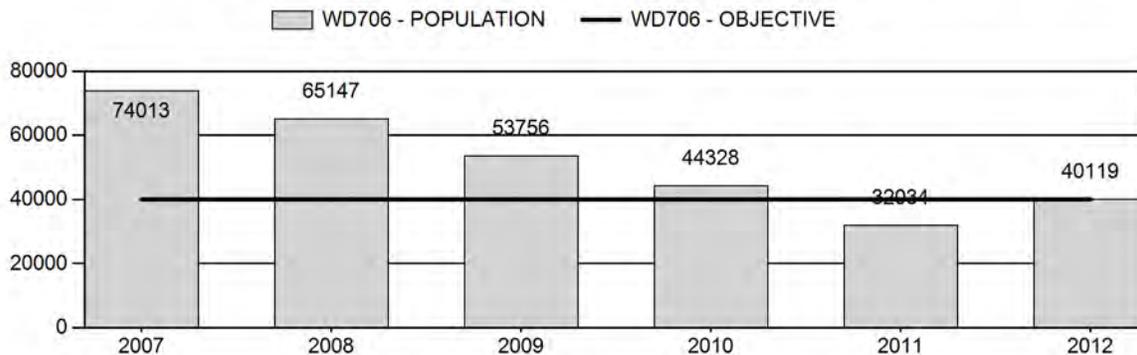
	<u>2007 - 2011 Average</u>	<u>2012</u>	<u>2013 Proposed</u>
Population:	53,856	40,119	48,946
Harvest:	5,303	3,429	3,421
Hunters:	9,056	6,295	6,296
Hunter Success:	59%	54%	54%
Active Licenses:	9,474	6,638	6,624
Active License Percent:	56%	52%	52%
Recreation Days:	37,754	26,664	26,620
Days Per Animal:	7.1	7.8	7.8
Males per 100 Females	26	26	
Juveniles per 100 Females	66	73	

Population Objective: 40,000
 Management Strategy: Recreational
 Percent population is above (+) or below (-) objective: 0%
 Number of years population has been + or - objective in recent trend: 1
 Model Date: 04/09/2013

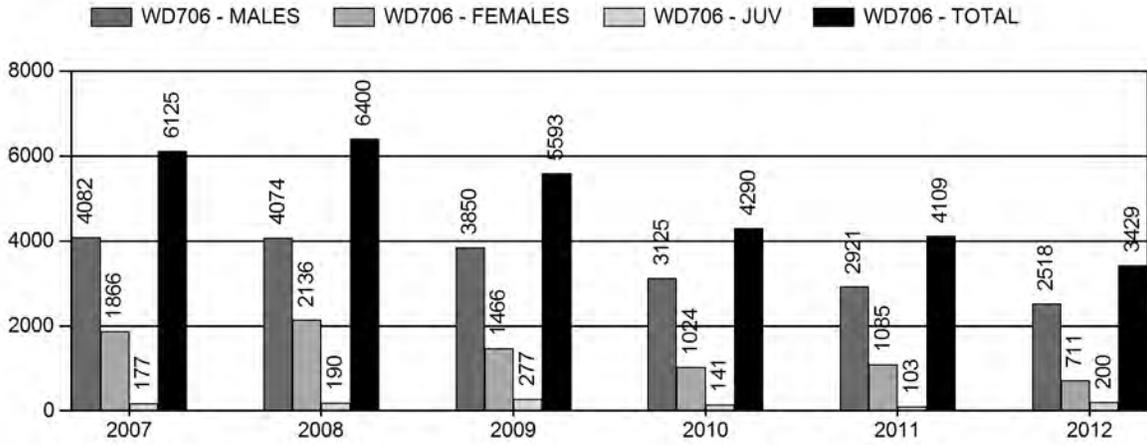
Proposed harvest rates (percent of pre-season estimate for each sex/age group):

	<u>JCR Year</u>	<u>Proposed</u>
Females ≥ 1 year old:	3.6%	3.0%
Males ≥ 1 year old:	36.7%	26.4%
Juveniles (< 1 year old):	1.5%	1.4%
Total:	8.6%	7.1%
Proposed change in post-season population:	-27.7%	+25.3%

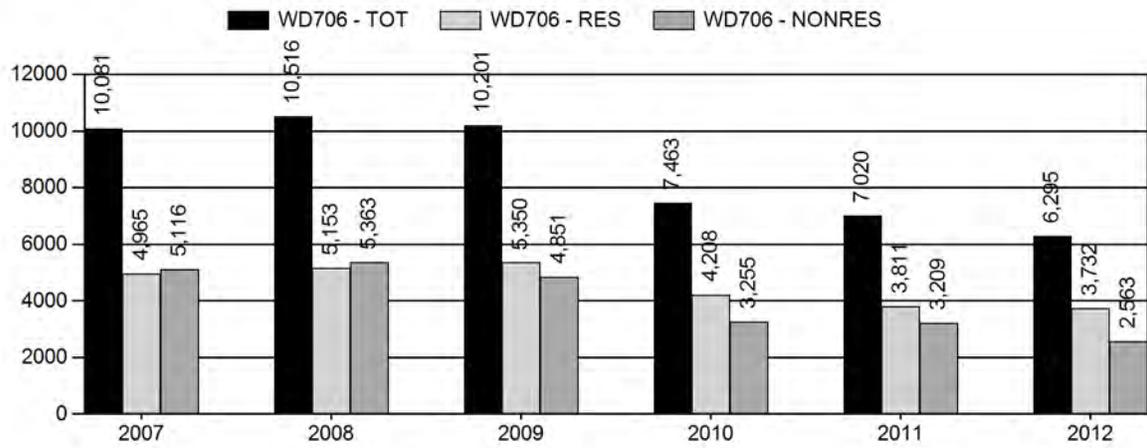
Population Size - Postseason



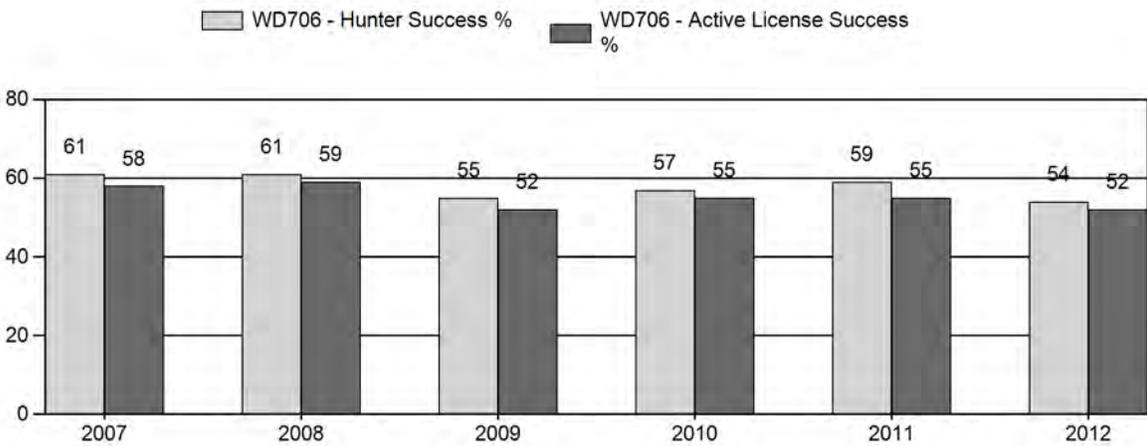
Harvest



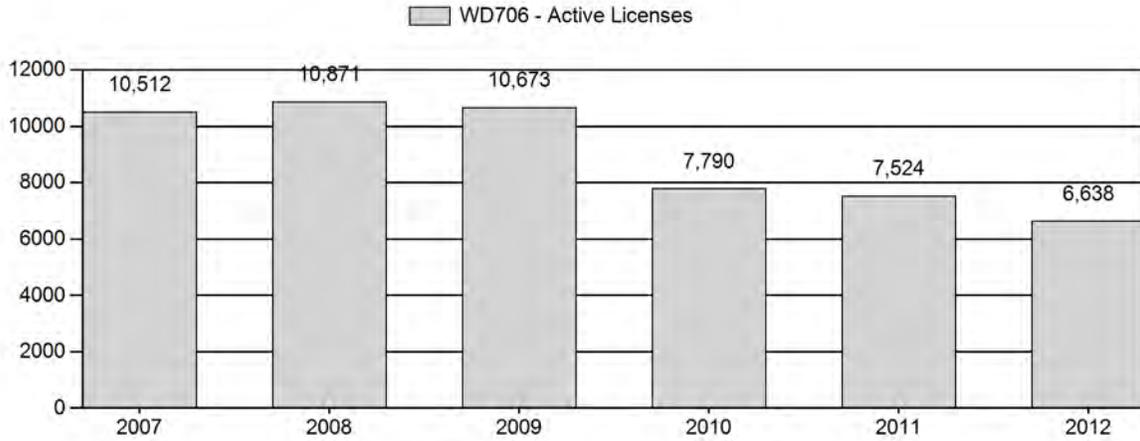
Number of Hunters



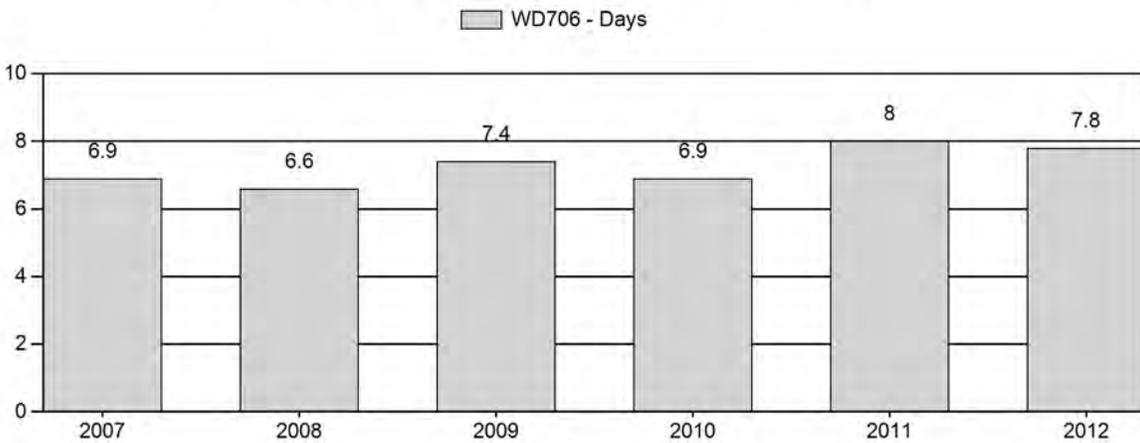
Harvest Success



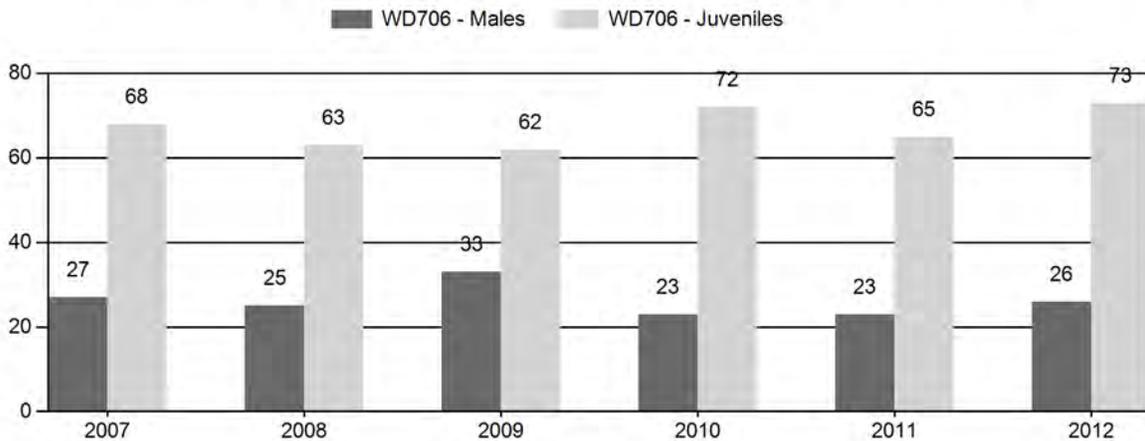
Active Licenses



Days Per Animal Harvested



Preseason Animals per 100 Females



2007 - 2012 Preseason Classification Summary

for White tailed Deer Herd WD706 - BLACK HILLS

Year	Pre Pop	MALES				FEMALES		JUVENILES		Tot Cls	Cls Obj	Males to 100 Females				Young to		
		Ylg	Adult	Total	%	Total	%	Total	%			YIng	Adult	Total	Conf Int	100 Fem	Conf Int	100 Adult
2007	80,751	145	190	335	14%	1,238	51%	843	35%	2,416	1,439	12	15	27	± 2	68	± 4	54
2008	72,187	127	222	349	13%	1,381	53%	871	33%	2,601	1,247	9	16	25	± 0	63	± 0	50
2009	59,908	131	224	355	17%	1,079	51%	672	32%	2,106	1,260	12	21	33	± 0	62	± 0	47
2010	49,047	93	232	325	12%	1,407	51%	1,016	37%	2,748	1,536	7	16	23	± 0	72	± 0	59
2011	36,554	48	149	197	12%	856	53%	559	35%	1,612	1,278	6	17	23	± 0	65	± 0	53
2012	43,891	93	143	236	13%	919	50%	675	37%	1,830	1,590	10	16	26	± 0	73	± 0	58

**2013 HUNTING SEASONS
BLACK HILLS WHITE-TAILED DEER HERD (MD751)**

Hunt Area	Type	Season Dates		Quota	Limitations
		Opens	Closes		
1		Nov. 1	Nov. 22		General license; antlered deer off private land; any deer on private land
1, 2, 3	6	Nov. 1	Nov. 22	25	Limited quota licenses; doe or fawn valid on private land
1,2	8	Nov. 1	Nov. 22	800	Limited quota licenses; doe or fawn white-tailed deer valid on private land
2		Nov. 1	Nov. 22		General license; antlered deer off private land; any deer on private land
3		Nov. 1	Nov. 22		General license; antlered deer off private land; any deer on private land
4		Nov. 1	Nov. 20		General license; antlered deer off private land; any deer on private land except the lands of the State of Wyoming's Ranch A property shall be closed
4	6	Nov. 1	Nov. 20	150	Limited quota licenses; doe or fawn valid on private land
5		Nov. 1	Nov. 20		General license, antlered deer off private land; any deer on private land
	6	Nov. 1	Nov. 20	25	Limited quota licenses; doe or fawn
6		Nov. 1	Nov. 20		General license; antlered deer off private land; any deer on private land
6, 9	6	Nov. 1	Nov. 20	25	Limited quota licenses; doe or fawn valid in those portions of Area 6 and Area 9 east of U.S. Highway 85
Archery		Sept. 1	Sept. 30		Refer to license type and limitations in Section 3

Region A Nonresident Quota: 2,750

Hunt Area	License Type	Quota change from 2012
Herd Unit Totals	All	None
	Region A	None

Management Evaluation

Current Management Objective: 40,000

Management Strategy: Recreational

2012 Postseason Population Estimate: ~ 40,100

2013 Proposed Postseason Population Estimate: ~ 49,000

HERD UNIT ISSUES: The management objective of the Black Hills White-Tailed Deer Herd Unit is an estimated post-season population of 40,000 deer. This herd is managed under the recreational management strategy. The population objective and management strategy were set in 1983. The objective and management strategy are scheduled for review during bio-year 2014.

The Black Hills White-Tailed Deer Herd unit is located within Crook and Weston Counties in northeastern Wyoming and encompasses 3,138 mi², of which 3,132 mi² are considered occupied habitat. Seasonal range maps for this herd were updated in 2004, and currently 335 mi² are delineated as crucial winter range. Seventy-nine percent of the land in this herd unit is privately owned. The largest blocks of accessible public land are found on the Black Hills National Forest in Hunt Areas 2 and 4, Thunder Basin National Grassland in Hunt Area 6, and BLM lands in Hunt Area 1. Access fees for hunting are common on private land, and many holdings have been leased to outfitters. Consequently, accessible public lands are subject to heavy hunting pressure. Due to limited access for hunters on private land, keeping the growth of this herd in check is difficult when habitat and weather conditions are favorable.

Whitetails are the most numerous deer species in Hunt Areas 2 and 4, whereas more equal proportions or greater numbers of mule deer occupy Hunt Areas 1, 3, 5, and 6 depending upon habitat type. A high proportion of white-tailed deer in the herd unit reside on private land. This results in their management being strongly influenced by landowner tolerance. Field personnel report white-tailed deer numbers are now well below local tolerance, and most landowners and the hunting public desire to see more deer.

Dominant land uses in the herd unit include agricultural grazing and forage crop production. Most forested lands are actively managed for timber production and harvest. There is some extraction of minerals, primarily bentonite and oil. The majority of white-tailed deer are found in the eastern two-thirds of this herd unit and along the Belle Fourche River drainage where habitat is favorable.

Modeling of this population has been difficult due to substantial interstate movement of deer, regular outbreaks of epizootic hemorrhagic disease (EHD), and very low productivity compared to other white-tailed deer herds. Consequently, population estimates produced by the model should be viewed cautiously. Because of this, and the fact that much of the herd unit is

comprised of private property, management of this herd has been based heavily on perceptions of deer numbers relative to landowner tolerance.

WEATHER: Drought conditions, which were persistent throughout the Black Hills between 2000 and 2007, began to moderate in 2008. Between 2008 and 2012, annual temperatures were below the previous 30-year average and annual precipitation each year above the previous 30-year average; and 2010 was significantly colder and wetter than both the 30-year and 100-year averages (<http://lwf.ncdc.noaa.gov/temp-and-precip/time-series>). The predominant weather pattern was characterized by generally cool summers, more persistent snow cover in late fall and winter, and above normal spring moisture. Notably, the winter of 2010-11 saw periods of extended low temperatures and persistent, deep snow cover rivaled only five times previous since the late 1890's. This tough winter preceded bio-year 2012, which was one of the driest on record. Warm and dry conditions beset the area in April of 2012, and continued through the 2012-13 winter. April of 2013 finally saw a break in this pattern when temperatures dropped below normal for the entire month and significant precipitation was again received (<http://www.ncdc.noaa.gov/temp-and-precip/>). Overall, the weather pattern during bio-year 2012 resulted in poor forage production and led to several large wildfires in the southern half of the herd unit. This recent weather pattern resulted in slightly below average recruitment, and average over-winter survival of all age classes of white-tailed deer.

HABITAT: Ponderosa pine (*Pinus ponderosa*) is the dominant overstory species on forested lands. Quaking aspen (*Populus tremuloides*), paper birch (*Betula papyrifera*), and bur oak (*Quercus macrocarpa*) stands are also present. Many areas dominated by deciduous trees are in late successional stages. Important shrubs include Saskatoon serviceberry (*Amelanchier alnifolia*), Oregon grape (*Berberis repens*), common chokecherry (*Prunus virginiana*), and spiraea (*Spiraea betulifolia*). Non-timbered lands in this portion of the herd unit are used to produce agricultural crops such as winter wheat (*Triticum aestivum*), alfalfa hay (*Medicago sativa*), or mixed-grass hay. White-tailed deer in the western one-third of the Black Hills herd unit are limited mainly to riparian habitats and associated agricultural ground. Outside of these riparian corridors habitat in this portion of the herd unit is dominated by sagebrush steppe and grasslands with scattered ponderosa pine covered hills.

Winter forage production and use are measured along two bur oak monitoring transects on the Black Hills National Forest (BHNF). These transects reveal very consistent, annual mean leader growth between 2003 and 2009 (no production data have been collected since). Annual leader growth averaged about two inches, with a standard deviation of less than one-half of an inch. The lowest production occurred between 2003 and 2005 and the greatest in 2009. It appears for some reason bur oak may invest extra water resources in either leader growth or mast production. This may be a function of timing of precipitation events, and complicates year to year comparisons of production data along with applying these data to deer management recommendations. Utilization of bur oak leaders available to deer has averaged 59% (std. dev. 9%). This level of use is considered excessive, since it regularly exceeds 50%. Interestingly, body condition of hunter harvested whitetails has not been well correlated with bur oak leader growth, contradicting assumptions body condition would be reduced without good leader growth. Obviously, other food sources in the summer are contributing more to fall body condition than bur oak, as this browse species is more of a winter food, and body condition in the fall is influenced more by grass and forb production.

FIELD DATA: Preseason age and sex classifications are conducted in this Herd Unit the second half of October along standardized routes. Most of these routes have been used for over 40 years. During the past three decades, fawn production and survival, based upon preseason classification counts, has been well below most white-tailed deer herds, and at times fluctuated dramatically. The underlying cause is thought to be related to over-winter nutritional condition of does (pers. Comm. SDGF&P). Over the past decade, observed fawn:doe ratios have improved, likely a result of vegetative responses to fire. Since 2002, observed fawn:doe ratios exhibited a general trend upwards, improving about 10%. Preseason buck:doe ratios have been more stable. Since 2002, observed preseason buck:doe ratios have exhibited a mean of 27:100 (std. dev = 4). As such, this herd's preseason buck:doe ratios are generally at the lower end of the Department's recreational management criteria. However, it should be noted that classifications are made outside the rut, and because whitetails are secretive, we have always modeled this herd's preseason buck:doe ratio about 30% above observed values. This has been necessary to create functional models, and seems reasonable given the classification protocol.

Fall body condition data have been collected from harvested white-tailed deer since 1997, although most of the data are from bucks. A chi-square analysis of these data revealed white-tailed deer had fall fat stores in line with expected values in 2004 & 2005, and more deer than expected were in excellent shape in 2006. The next year body condition began to drop. Body condition indices (BCI scores) then declined significantly in 2008, with more deer than expected exhibiting poor or fair body condition. In 2009, as the population decline continued, BCI scores improved, and they were not significantly different from expected values. The story in 2010 and 2011 was similar, with most deer being in fair to good shape. These data were not collected in 2012, but field checks of harvested deer suggest body condition dropped with the onset of extreme drought. One can infer that when the population peaked in 2007, the number of deer on the ground exceeded what the habitat could support, especially in the face of the more normal to severe winter and spring weather that followed. But, as the population declined, deer numbers became more congruent with forage availability.

HARVEST DATA: In the Black Hills, deer management entails regulating both mule deer and whitetail harvest under a single season structure, across a variety of habitats and habitat conditions, with serious deference given to landowner desires. An analysis of harvest information suggests hunter numbers has the greatest impact on harvest. As such, buck harvest has been regulated by altering non-resident hunter numbers via changes in the Region A quota, while resident buck hunter participation can only be limited by shortening the season – notably by inclusion or removal of the Thanksgiving Day weekend and the days following in November. With more conservative hunting season structures in place since 2010, harvest has dropped. At the same time, hunter success has generally declined and effort increased.

Hunting seasons the past three years reduced harvest of whitetail bucks 29% from that experienced during the traditional 30-day November season the preceding three years. Comparing these same time periods, resident harvest of white-tailed bucks dropped 16%, while non-resident harvest of white-tailed bucks dropped 39%. During this time, harvest of mule deer bucks declined more precipitously (see MD751). Despite these trends, hunter satisfaction essentially remained unchanged for both species the past two years, with about 67% of the hunters reporting they were either satisfied or very satisfied with their Black Hills deer hunt, and 18% reporting they were either dissatisfied or very dissatisfied – regardless of species.

POPULATION: Population modeling of this herd has been difficult and fraught with problems. The population violates the closed population assumption due to significant interstate movement of deer between Wyoming, Montana, and South Dakota. In addition, fluctuations in observed fawn:doe ratios, outbreaks of EHD, increased predation, a high level of vehicle-deer collisions, the low productivity of this herd, and reduced visibility of bucks during classifications make use of classification data tenuous for constructing a population model. However, the Semi-Constant Juvenile / Semi-Constant Adult Survival (SJA SCA) model selected to estimate the population is about 80% correlated with preseason trend counts since 1996, and approximately 60% correlated with trend counts the past five years (Figure 1). Because this model was best correlated with trend count data, it was selected over the Time Sensitive Juvenile / Constant Adult Survival model (TSJ CA), although the latter exhibited a lower AICc value (184 vs. 291) and better fit observed buck:doe ratios (76 vs. 218). The TSJ CA model was also rejected because it constrained juvenile survival rates to set limits 13 out of 20 years. Changes in the preseason population estimates produced by the SJA SCA model were inversely correlated 60% with changes in hunter effort, while the TSJ CA model exhibited a slight positive correlation. With regards to changes in hunter success, none of the models correlate well with harvest statistics, but the SJA SCA model does the best job. Based upon the above listed criteria, we consider this model to be of poor quality, but better than the competing models.

The spreadsheet model suggests recent postseason populations have been very close to our current management objective of 40,000 white-tailed deer, rather than the approximately 29,000 projected by POP-II the past couple of years. If population estimates produced by the spreadsheet model are close to accurate, then our current objective is well below landowner desires. At this time, the majority of landowners have expressed dissatisfaction with the low number of deer. Based upon normal habitat conditions and these desires, a season designed to increase this herd is warranted.

Based on the spreadsheet model, this population grew 115% between 2001 and 2007. The population then declined 57% to its recent nadir in 2011, before rebounding 25% in 2012. The trends produced with the spreadsheet model are similar to those produced prior using POP-II. However, the projected spreadsheet fluctuations are larger and not as highly correlated with preseason trend count data (68%) compared to the POP-II model.

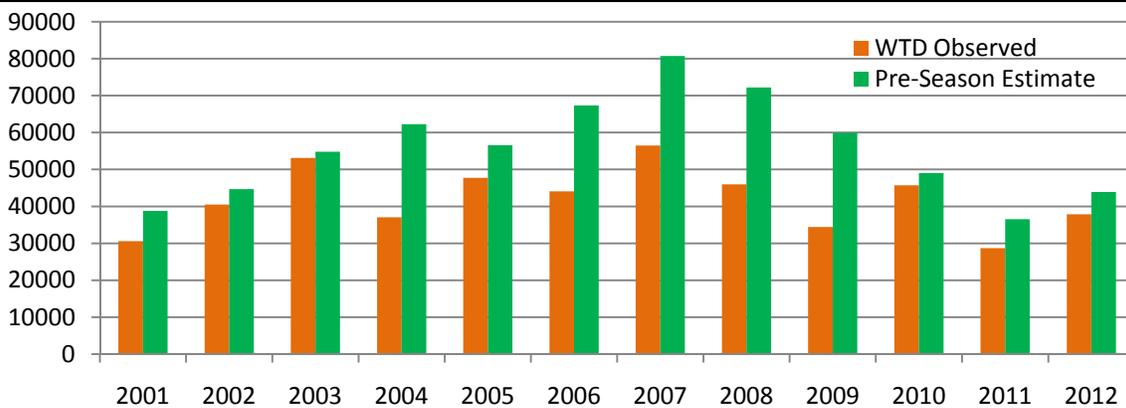


Figure 1. 2011-2012 white-tailed deer, estimated preseason population and trend count data, increased by a factor of 10.

Beginning in 2002, hunting seasons were structured to retard growth. Population growth was reversed in 2007, but this directional change was primarily due to increased non-hunting mortality rather than enhanced harvest. Changes in survival rates have been most ostensibly attributed to increased over-winter mortality caused by late spring blizzards in 2008 & 2009, and an unusually severe winter in bio-year 2010. These weather events combined with epizootic hemorrhagic disease (EHD) outbreaks each of the past five years to increase annual mortality in all sex and age classes of deer. Between 2007 and 2010, evidence also suggests the mountain lion population in the Black Hills reached historically high levels. As a result, elevated harvest, weather conditions, disease, and increased predation acted in concert to reduce this population substantially. In response, hunting seasons have been conservative since 2010.

MANAGEMENT SUMMARY: There are no changes are being implemented for the 2013 white-tailed deer hunting season in the Black Hills. Retention of the November 22nd closing date in Hunt Areas 1, 2, & 3 will maintain three full weekends of deer hunting. Retaining the Thanksgiving Day closing date would add another full week and weekend of hunting to the season beyond what has been in place the past three years. Hunter and landowner dissatisfaction with overall buck numbers warrants the continuation of a season structure similar to what has been in place. Adding any hunting pressure during the peak of the rut would substantially increase buck harvest – especially harvest of mule deer bucks. Continuing with a Region A license quota identical to last year is also intended to limit harvest of bucks of both species. The 2013 Black Hills deer hunting season is expected to yield a 2013 postseason population of about 49,000 white-tailed deer, which represents a 22% increase in the current post-season population. But, it will also result in a slight decline in the sympatric mule deer herd. This proposed hunting season is reasonable given the balance we must achieve between managing the area's two deer herds, habitat conditions, damage complaints, and the current demographic status of the white-tailed deer herd.

INPUT	
Species:	White-Tail Deer
Biologist:	Sandrini
Herd Unit & No.:	Black Hills
Model date:	02/20/13

MODELS SUMMARY			
	Fit	Relative AICc	Notes
CJ,CA	975413	975422	
SCJ,SCA	218	291	<input type="checkbox"/> CJ,CA Model
TSJ,CA	76	184	<input type="checkbox"/> SCJ,SCA <input type="checkbox"/> TSJ,CA Model

Clear form

Check best model to create report

Year	Pre-Rifle Pop Est			Population Estimates from Top Model						Predicted Posthunt Population (Year I)			Objective				
	Field Est	Field SE	Trend Count	Pre-Archery Season Population (Year I)	Pre-Rifle Season Population (Year I)	Juveniles	Total	Juveniles	Total Males		Females	Total					
1993				11298	17479	5968	17479	11298	11298	34745	17479	5968	17479	10583	2237	13897	40000
1994				11107	17232	6147	17232	11107	11107	34486	17232	6147	17232	11012	3096	16680	40000
1995				9284	17675	6308	17675	9284	33268	33268	6308	6308	17675	9205	3644	17044	40000
1996	22250			8611	17222	6095	17222	8611	31928	31928	6095	6095	17222	8569	3769	16862	40000
1997	19300			6427	19461	6924	19461	6427	32811	32811	6924	6924	19461	6403	4350	18862	40000
1998	31580			11146	20595	6589	20595	11146	38329	38329	6589	6589	20595	11104	4290	20238	40000
1999	41940			14974	24203	8955	24203	14974	48132	48132	8955	8955	24203	14940	7369	23973	40000
2000	42560			14774	28798	12956	28798	14774	56528	56528	12956	12956	28798	14707	9270	28169	40000
2001	30610			6527	23189	9043	23189	6527	38760	38760	9043	9043	23189	6414	5693	22307	40000
2002	40500			13121	23729	7822	23729	13121	44673	44673	7822	7822	23729	13048	4402	23234	40000
2003	53140			18217	27315	9278	27315	18217	54809	54809	9278	9278	27315	17985	5196	26317	40000
2004	37050			18075	32198	11979	32198	18075	62251	62251	11979	11979	32198	17920	8091	31163	40000
2005	47730			17282	29164	10137	29164	17282	56583	56583	10137	10137	29164	17089	5969	27749	40000
2006	44080			21799	33179	12350	33179	21799	67328	67328	12350	12350	33179	21549	8026	31438	40000
2007	56470			26192	38465	16095	38465	26192	80751	80751	16095	16095	38465	25997	11604	36412	40000
2008	45970			22182	35170	14836	35170	22182	72187	72187	14836	14836	35170	21973	10355	32820	40000
2009	34410			18353	29469	12087	29469	18353	59908	59908	12087	12087	29469	18048	7852	27856	40000
2010	45710			16934	23451	8661	23451	16934	49047	49047	8661	8661	23451	16779	5224	22325	40000
2011	28700			11933	18273	6348	18273	11933	36554	36554	6348	6348	18273	11820	3135	17079	40000
2012	37850			15375	20932	7584	20932	15375	43891	43891	7584	7584	20932	15155	4815	20150	40000
2013				16962	25208	10540	25208	16962	52709	52709	10540	10540	25208	16732	7760	24454	40000
2014																	40000
2015																	40000
2016																	40000
2017																	40000
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Survival and Initial Population Estimates

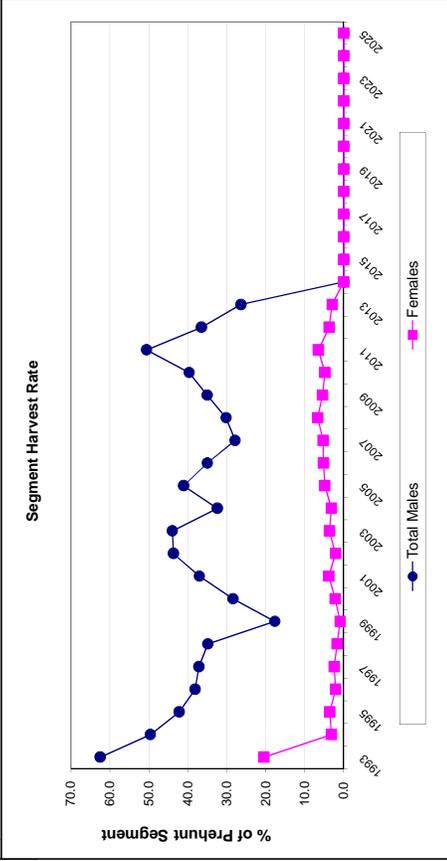
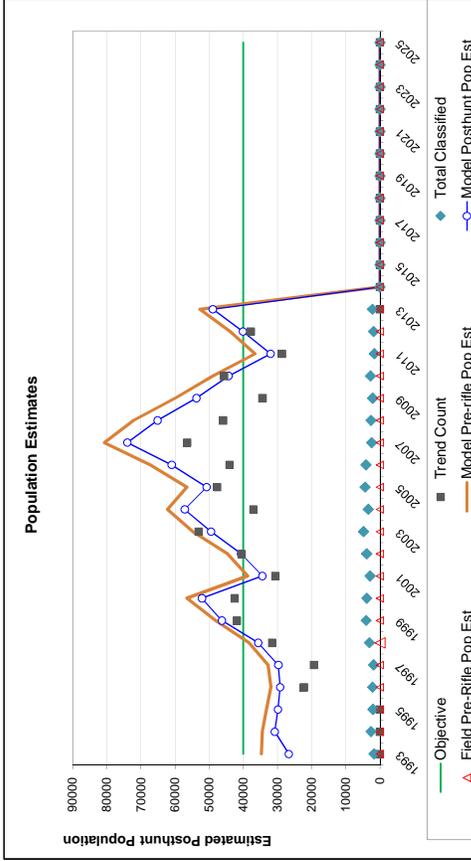
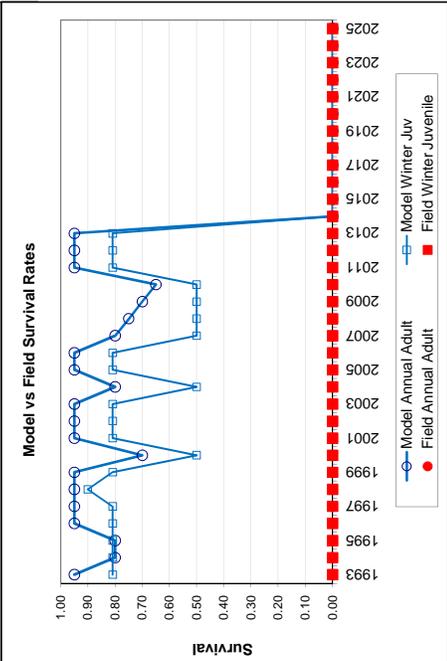
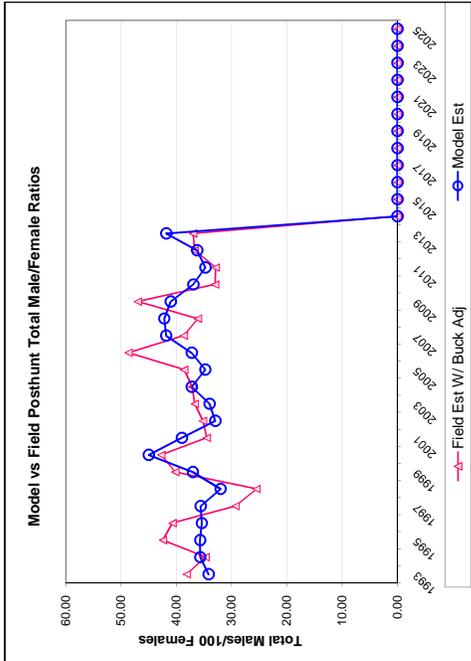
Year	Annual Juvenile Survival Rates		Annual Adult Survival Rates	
	Model Est	Field Est	Model Est	Field Est
1993	0.81		0.95	
1994	0.81		0.80	
1995	0.81		0.80	
1996	0.81		0.95	
1997	0.81		0.95	
1998	0.90		0.95	
1999	0.81		0.95	
2000	0.50		0.70	
2001	0.81		0.95	
2002	0.81		0.95	
2003	0.81		0.95	
2004	0.50		0.80	
2005	0.81		0.95	
2006	0.81		0.95	
2007	0.50		0.80	
2008	0.50		0.75	
2009	0.50		0.70	
2010	0.50		0.65	
2011	0.81		0.95	
2012	0.81		0.95	
2013	0.81		0.95	
2014				
2015				
2016				
2017				
2018				
2019				
2020				
2021				
2022				
2023				
2024				
2025				

Parameters:	Optim cells
Juvenile Survival =	0.808
Adult Survival =	0.950
Initial Total Male Pop/10,000 =	0.597
Initial Female Pop/10,000 =	1.748

MODEL ASSUMPTIONS	
Sex Ratio (% Males) =	50%
Wounding Loss (total males) =	10%
Wounding Loss (females) =	10%
Wounding Loss (juveniles) =	10%
Buck Adjustment Factor	70%

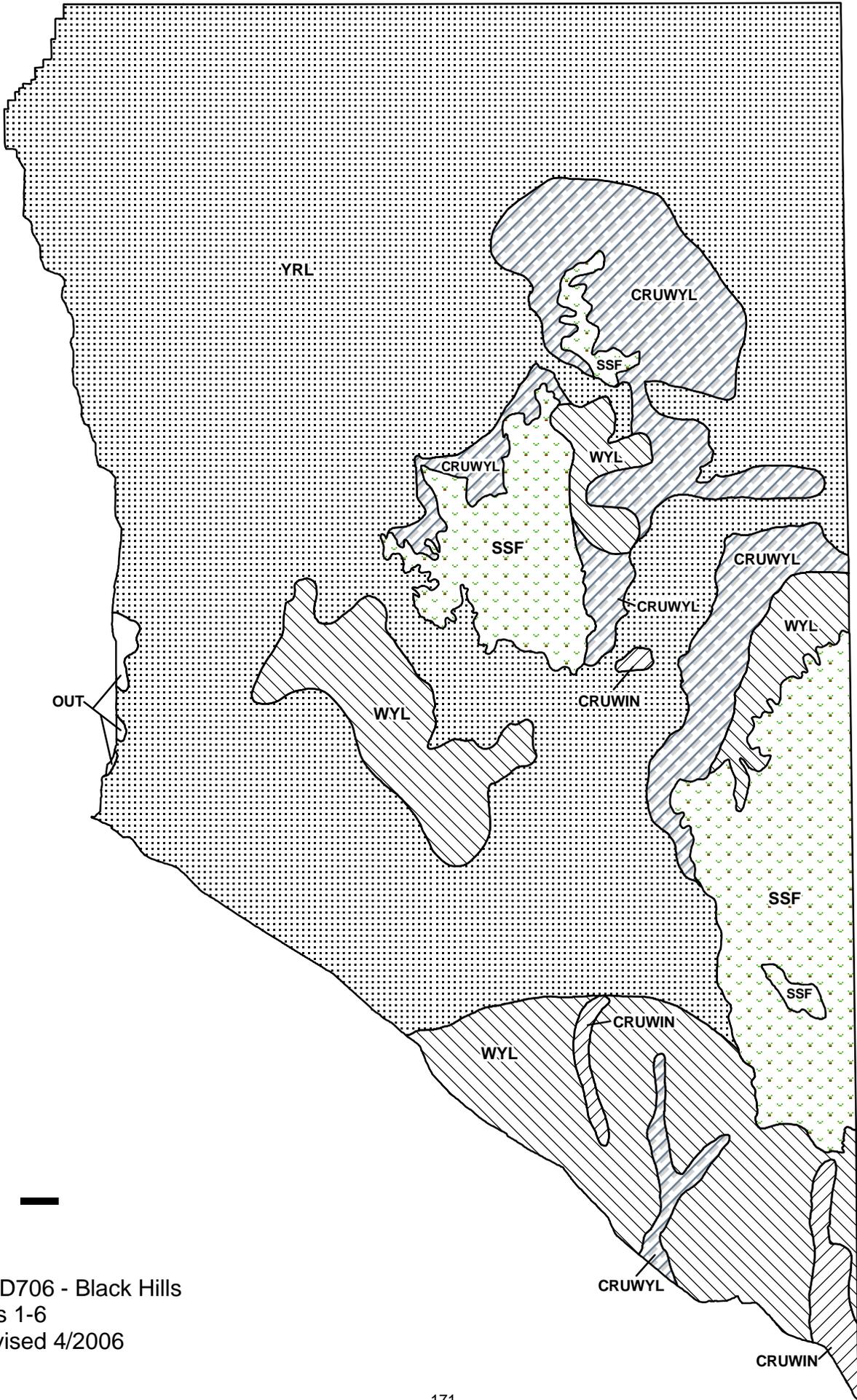
Year	Juvenile/Female Ratio			Total Male/Female Ratio			Classification Counts					Total Harvest (Rifle+Archery)			
	Derived Est	Field Est	Field SE	Derived Est	Field est.w/ buck Adj	Field SE	Juv	Males	Females	Total Harvest	Total Males	Females	Segment Harvest Rate (% of	Total Males	Females
1993		64.64	3.46	34.14	38.13	1.95	650	3392	3256	7298	62.5	20.5		62.5	20.5
1994		64.45	2.78	35.67	34.72	1.49	86	2774	502	3362	49.6	3.2		49.6	3.2
1995		52.53	2.69	35.69	42.42	1.86	72	2422	574	3068	42.2	3.6		42.2	3.6
1996		50.00	2.49	35.39	40.68	1.74	38	2115	327	2480	38.2	2.1		38.2	2.1
1997		33.03	1.92	35.58	29.29	1.44	22	2340	435	2797	37.2	2.5		37.2	2.5
1998		54.12	2.17	31.99	25.48	1.09	38	2090	324	2452	34.9	1.7		34.9	1.7
1999		61.87	2.18	37.00	40.20	1.31	31	1442	209	1682	17.7	0.9		17.7	0.9
2000		51.30	1.92	44.99	42.73	1.36	61	3351	572	3984	28.5	2.2		28.5	2.2
2001		28.15	1.38	39.00	34.47	1.26	103	3046	802	3951	37.1	3.8		37.1	3.8
2002		55.30	2.00	32.96	35.20	1.20	67	3109	450	3626	43.7	2.1		43.7	2.1
2003		66.69	2.12	33.97	36.65	1.14	211	3711	907	4829	44.0	3.7		44.0	3.7
2004		56.14	2.17	37.20	37.14	1.33	141	3534	941	4616	32.5	3.2		32.5	3.2
2005		59.26	2.02	34.76	38.60	1.22	176	3789	1287	5252	41.1	4.9		41.1	4.9
2006		65.70	2.31	37.22	48.65	1.50	227	3931	1583	5741	35.0	5.2		35.0	5.2
2007		68.09	3.04	41.84	38.66	1.67	177	4082	1866	6125	27.9	5.3		27.9	5.3
2008		63.07	2.73	42.18	36.10	1.51	190	4074	2136	6400	30.2	6.7		30.2	6.7
2009		62.28	3.06	41.02	47.00	2.01	277	3850	1466	5593	35.0	5.5		35.0	5.5
2010		72.21	2.97	36.93	33.00	1.42	141	3125	1024	4290	39.7	4.8		39.7	4.8
2011		65.30	3.55	34.74	32.88	1.82	103	2921	1085	4109	50.6	6.5		50.6	6.5
2012		73.45	3.72	36.23	36.69	1.87	200	2518	711	3429	36.5	3.7		36.5	3.7
2013		67.29	3.16	41.81	36.98	1.70	209	2527	685	3421	26.4	3.0		26.4	3.0
2014															
2015															
2016															
2017															
2018															
2019															
2020															
2021															
2022															
2023															
2024															
2025															

FIGURES



Comments:

END



WTD706 - Black Hills
 HAs 1-6
 Revised 4/2006

2012 - JCR Evaluation Form

SPECIES: White tailed Deer

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

HERD: WD707 - CENTRAL

HUNT AREAS: 7-15, 21-22, 34, 65-67, 88-89

PREPARED BY: HEATHER O'BRIEN

	<u>2007 - 2011 Average</u>	<u>2012</u>	<u>2013 Proposed</u>
Population:	0	N/A	N/A
Harvest:	1,353	1,450	1,360
Hunters:	2,745	3,092	2,800
Hunter Success:	49%	47%	49 %
Active Licenses:	3,112	3,507	3,200
Active License Percent:	43%	41%	42 %
Recreation Days:	11,769	15,410	13,000
Days Per Animal:	8.7	10.6	9.6
Males per 100 Females	35	34	
Juveniles per 100 Females	66	56	

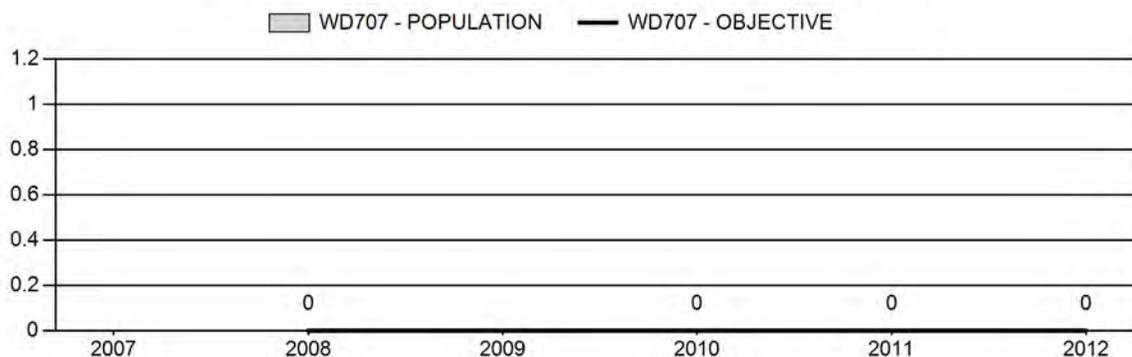
Population Objective:	0
Management Strategy:	Recreational
Percent population is above (+) or below (-) objective:	N/A%
Number of years population has been + or - objective in recent trend:	0
Model Date:	None

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

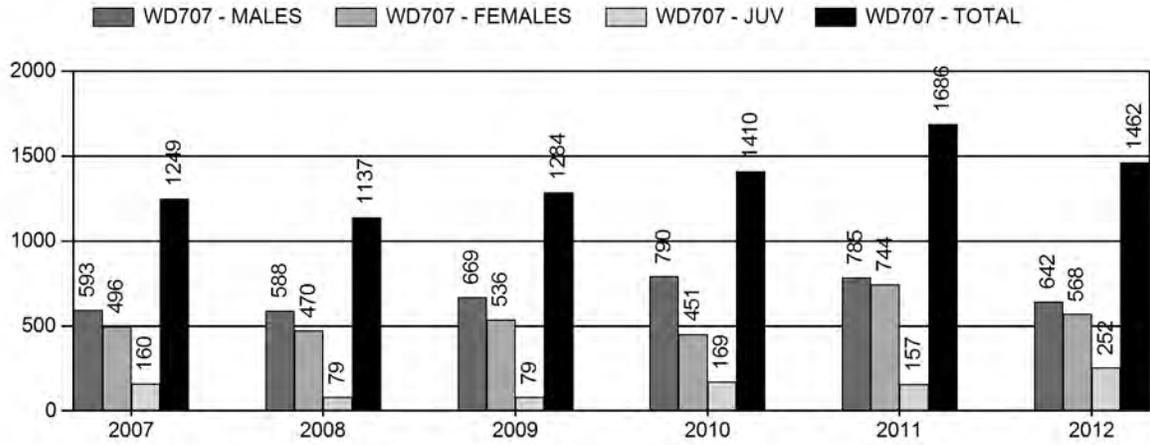
	<u>JCR Year</u>	<u>Proposed</u>
Females ≥ 1 year old:	0%	0%
Males ≥ 1 year old:	0%	0%
Juveniles (< 1 year old):	0%	0%
Total:	0%	0%

Proposed change in post-season population: 0% 0%

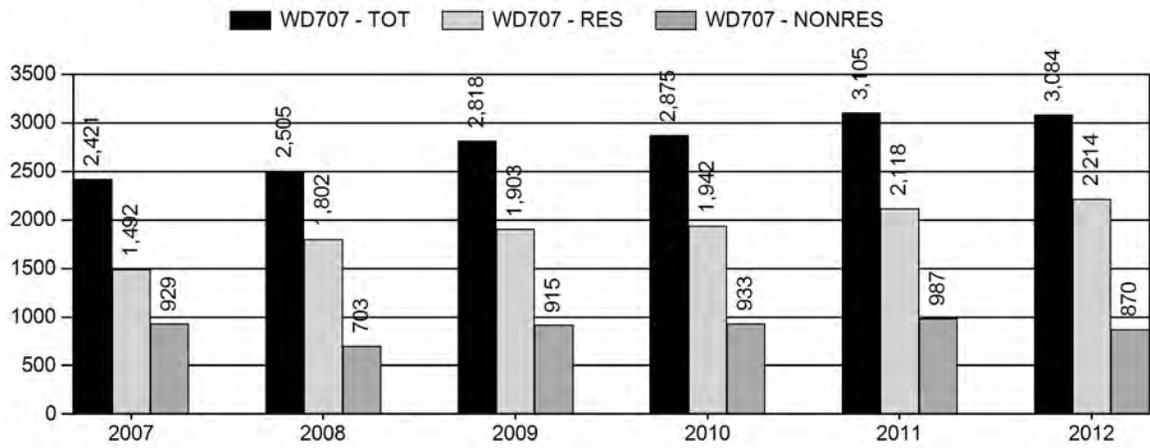
Population Size - Postseason



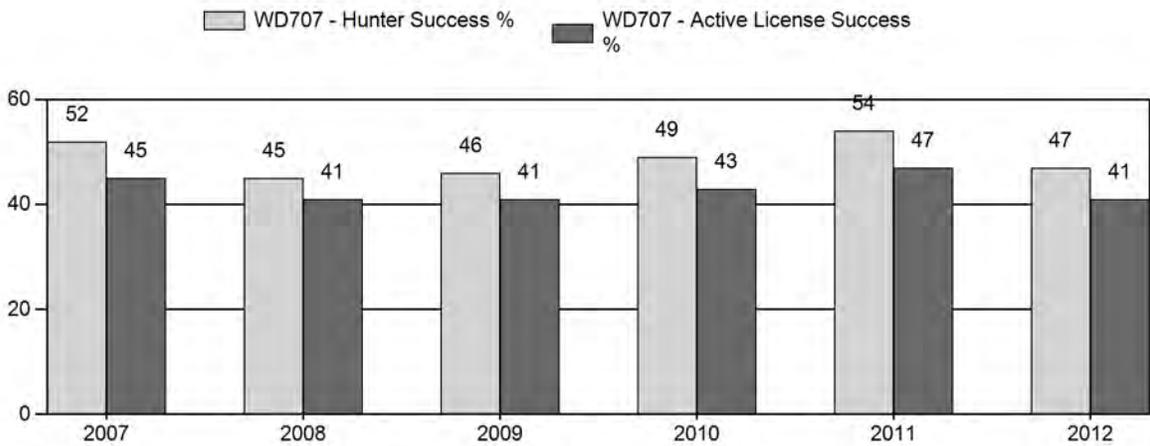
Harvest



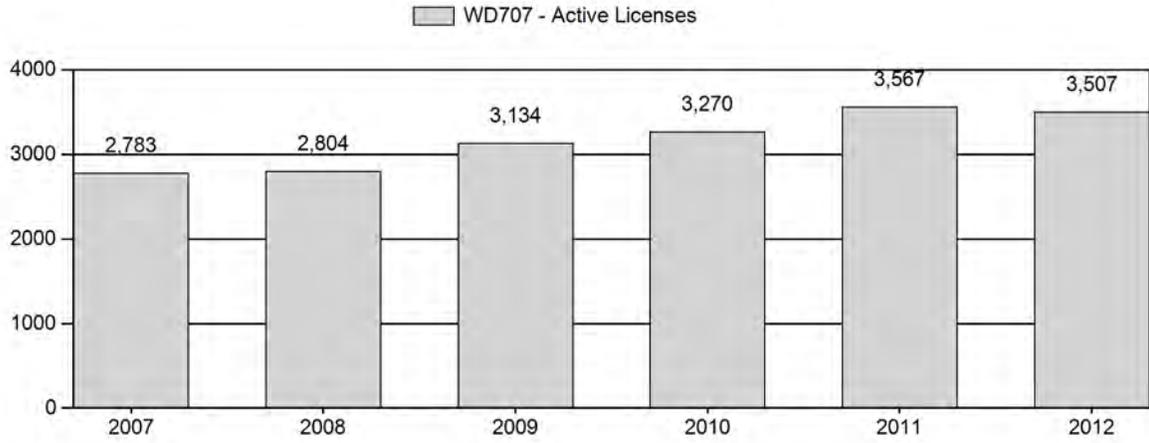
Number of Hunters



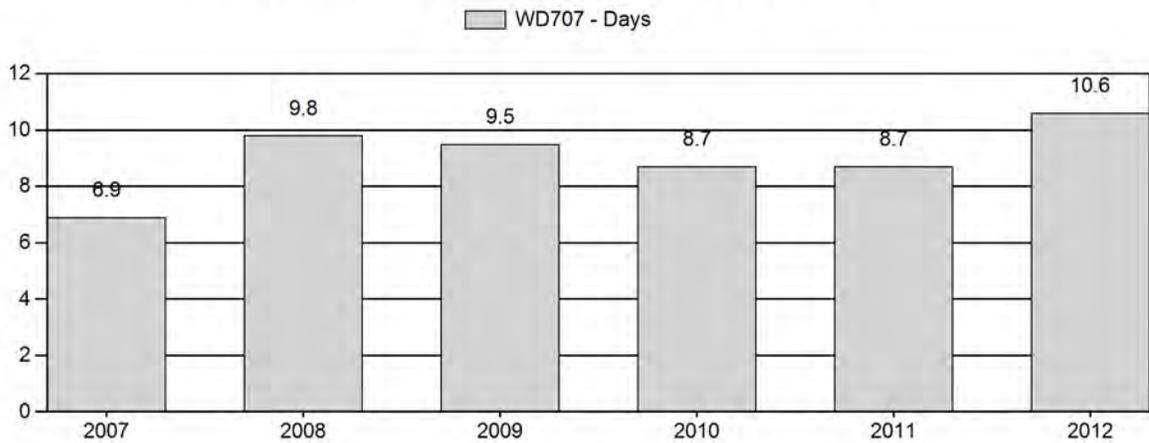
Harvest Success



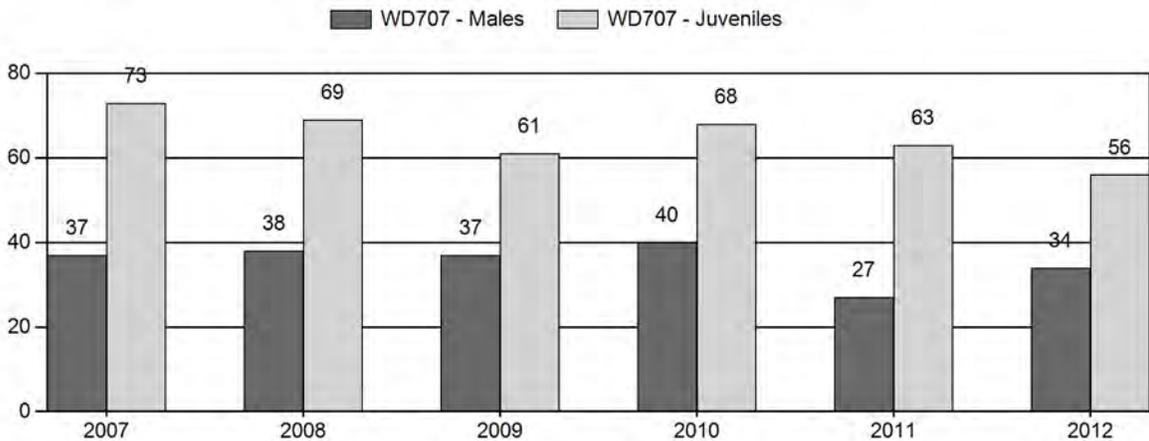
Active Licenses



Days per Animal Harvested



Postseason Animals per 100 Females



2007 - 2012 Postseason Classification Summary

for White tailed Deer Herd WD707 - CENTRAL

Year	Post Pop	MALES			FEMALES		JUVENILES		Tot Cls	Cls Obj	Males to 100 Females			Young to			
		Ylg	Adult	Total	%	Total	%	Total			%	Ylg	Adult	Total	100 Fem	Conf Int	100 Adult
2007	0	55	51	106	18%	287	48%	210	35%	603	0	19	18	37	73	± 0	53
2008	0	54	91	145	18%	386	48%	266	33%	797	0	14	24	38	69	± 0	50
2009	0	49	108	157	19%	430	51%	261	31%	848	0	11	25	37	61	± 0	44
2010	0	60	87	147	19%	372	48%	253	33%	772	0	16	23	40	68	± 0	49
2011	0	45	81	126	14%	467	53%	292	33%	885	0	10	17	27	63	± 0	49
2012	0	54	76	130	18%	381	53%	212	29%	723	0	14	20	34	56	± 0	41

**2013 HUNTING SEASONS
CENTRAL WHITE-TAILED DEER (WD707)**

Hunt Area	Type	Date of Seasons		Quota	Limitations
		Opens	Closes		
10,11,12 13,14,15	3	Oct. 1	Nov. 30	500	Limited quota licenses; any white-tailed deer
	8	Oct. 1	Nov. 30	500	Limited quota licenses; doe or fawn white-tailed deer
12,13,14		Oct. 1	Oct. 15		General license; antlered mule deer or any white-tailed deer
		Oct. 16	Nov. 30		General license; any white-tailed deer
22	1	Oct. 1	Oct. 14	600	Limited quota licenses; antlered mule deer or any white-tailed deer
	3	Oct. 1	Nov. 30	100	Limited quota licenses; any white-tailed deer
	6	Oct. 1	Oct. 14	100	Limited quota licenses; doe or fawn
	8	Oct. 1	Nov. 30	100	Limited quota licenses; doe or fawn white-tailed deer
34	1	Oct. 15	Oct. 31	250	Limited quota licenses; antlered deer
	3	Oct. 15	Nov. 30	50	Limited quota licenses; any white-tailed deer
	6	Oct. 15	Oct. 31	50	Limited quota licenses; doe or fawn valid on private land east of the Bucknum Road (Natrona County Road 125) within the Casper Creek drainage
	8	Oct. 15	Nov. 30	100	Limited quota licenses; doe or fawn white-tailed deer
65, 66, 88, 89	3	Oct. 15	Nov. 30	500	Limited quota licenses; any white-tailed deer
	8	Oct. 15	Nov. 30	700	Limited quota licenses; doe or fawn white-tailed deer

Note: The above season limitations are restricted to only those lines in the Chapter 6 Regulation that directly affect white-tailed deer hunting. Additional general and limited quota seasons occur in hunt areas 7-15, 22, 34, 65-67, 88, and 89 but are not captured here.

Hunt Area	Type	Quota Change
10, 11, 12, 13, 14, 15	3	0
	8	0
12, 13, 14	6	-25***
22	1	0*
	3	-100
	6	0*
	8	0
34	1	0**
	3	0
	6	0**
	8	-100
65, 66, 88	3	0
	8	0
WD707 Total (excluding Type 6 & 7 licenses)	3	-100
	8	-100

*Also captured in MD755 Justification
 **Also captured in MD759 Justification
 ***Also captured in MD759 Justification

Management Evaluation

Current Management Objective: ≥ 20 bucks:100 does postseason

2012 Postseason Population Estimate: NA

2013 Proposed Postseason Population Estimate: NA

The Central White-tailed Deer Herd Unit has a postseason management objective of ≥20 bucks per 100 does. No population model exists for this herd unit. Managers are unable to obtain adequate classifications over this large herd unit due to poor sightability of white-tailed deer in cottonwood riparian habitats. Access to perform ground surveys is inconsistent and highly variable from year to year as most white-tailed deer inhabit private lands.

Herd Unit Issues

White-tailed deer densities in this herd are highest along major cottonwood riparian communities of the Cheyenne River and North Platte River drainages and on irrigated hay fields in the La Prele Creek, La Bonte Creek, and Casper Creek drainages. Most white-tailed deer habitats in this herd unit are on private lands. Landowners typically have a low tolerance for white-tailed deer, and access to hunt is generally good. Periodic disease outbreaks (i.e. hemorrhagic diseases, adenovirus, Asian louse, Chronic Wasting Disease) are known to occur within this herd, and can contribute to population declines in localized areas when environmental conditions are suitable. Female harvest in this herd is typically insufficient to curtail population growth as many Type 8 licenses remain unsold. Epizootic Hemorrhagic Disease (EHD) often regulates this population given the lack of female harvest.

Weather

The winter of 2011-2012 was mild with below average snow accumulations and relatively warm temperatures. The growing season of 2012 through winter of 2013 were extremely dry with above average temperatures. During the same time period, available water, forage growth, and forage quality were below average. Drought conditions seem to have had less impact on white-tailed deer compared to other big game species, as they occupy riparian habitats and irrigated agricultural areas. Still, fawn ratios of 56 per 100 does were observed during 2012 postseason classification surveys, which is lower than normal for this herd.

Habitat

This herd unit has no established habitat transects that measure growth and/or utilization on shrub species that are preferred browse of white-tailed deer. Anecdotal observations from field personnel noted poor upland shrub and herbaceous forb conditions, and increased use of riparian areas by pronghorn, mule deer, and livestock. Elevated utilization along riparian corridors likely increased competition for white-tailed deer and decreased available forage during summer, fall, and winter of 2012.

Field Data

Fawn ratios are typically good for this herd and range in the 60-70s per 100 does. 2012 was an exception, when observed fawn ratios were 56 per 100 does. This decrease is likely due to severe drought conditions. Browse quality and availability was reduced even along riparian corridors as moisture was low. Many landowners reported a lack of water to continue irrigation of hay fields by mid-summer. Thus, agricultural browse normally utilized by white-tailed deer was also poor in 2012. A general lack of quality forage and increased competition with other big

game species in riparian habitats likely contributed to reduced nutrition for lactating does and their fawns.

Buck ratios for the Central White-tailed Deer Herd historically average in the mid 30s per 100 does, but occasionally swell into the 40s or drop into the 20s. In 2012 the observed buck ratio was 34 per 100 does. Observed ratios may vary from year to year due to differing levels of effort or success in sampling white-tailed deer during post-season classification surveys. Buck ratios vary widely across the large variety of habitats in this herd unit as well. Additionally, white-tailed deer can be difficult to classify on private lands and in riparian cover, particularly bucks that may be solitary and elusive. Still, observed buck ratios have always met management objectives for this herd by remaining at or above 20 bucks per 100 does.

Harvest Data

License success in this herd unit is typically in the 40-50th percentile, and was 56 percent in 2012. License issuance varies greatly between the many hunt areas contained within the herd unit. Hunters can typically take white-tailed deer on general licenses and also purchase additional limited quota licenses valid for any white-tailed deer or doe/fawn white-tailed deer. Issuance of limited quota licenses is managed from year to year depending on perceived numbers of white-tailed deer on private lands. Potential damage issues and willingness of landowners to provide access are also factors influencing license issuance. Access to white-tailed deer hunting opportunity generally increased and peaked in 2011 with a total of over 3,100 hunters. Since then license issuance has been reduced slightly, as the population – and hunting access – decreased somewhat.

Population

Currently there is no population model that accurately represents this herd. Management is instead based on postseason buck ratios with a goal of maintaining ≥ 20 bucks per 100 does.

Management Summary

Traditional season dates in this herd vary from one hunt area to the next. Generally, white-tailed deer seasons run concurrently with October mule deer seasons, and are extended into November to maximize hunter opportunity and harvest. The 2013 season includes 1,150 Type 3 licenses, 1,400 Type 8 licenses, and additional opportunities to harvest white-tailed deer on General, Type 1, and Type 6 licenses. Type 3 and Type 8 licenses were reduced by 100 each in areas where access on private lands has decreased slightly. Goals for 2013 are to maintain buck ratios, provide hunter opportunity, and address agricultural damage on private lands.

If we attain the projected harvest of 1,360 with fawn ratios similar to the five-year average, buck ratios should be maintained above 20 per 100 does.

**Central White-tailed Deer Herd Unit
(WD707)
Revised May 12, 2010
Hunt Areas 7-15, 21, 22, 34, 65-67, 88, 89**

