

2017 - JCR Evaluation Form

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

PERIOD: 6/1/2017 - 5/31/2018
 PREPARED BY: JOE SANDRINI

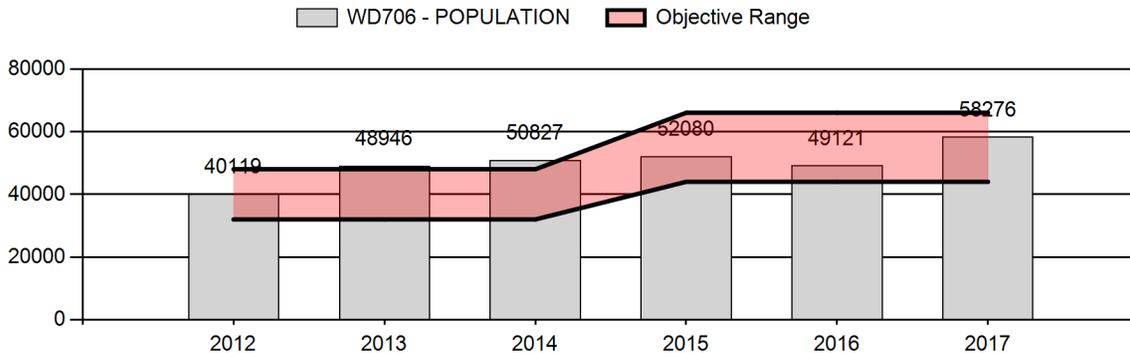
	<u>2012 - 2016 Average</u>	<u>2017</u>	<u>2018 Proposed</u>
Population:	48,219	58,276	63,676
Harvest:	4,765	6,604	6,690
Hunters:	7,452	9,945	10,300
Hunter Success:	64%	66%	65 %
Active Licenses:	7,955	10,650	11,000
Active License Success:	60%	62%	61 %
Recreation Days:	31,221	38,031	39,500
Days Per Animal:	6.6	5.8	5.9
Males per 100 Females	29	35	
Juveniles per 100 Females	73	71	

Population Objective (± 20%) : 55000 (44000 - 66000)
 Management Strategy: Recreational
 Percent population is above (+) or below (-) objective: 6%
 Number of years population has been + or - objective in recent trend: 1
 Model Date: 02/15/2018

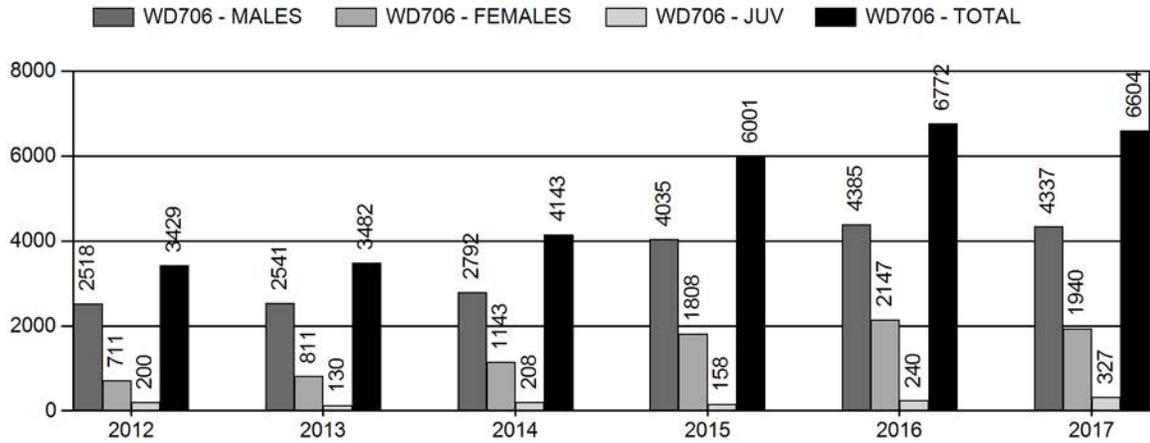
Proposed harvest rates (percent of pre-season estimate for each sex/age group):

	<u>JCR Year</u>	<u>Proposed</u>
Females ≥ 1 year old:	7.1%	6.9%
Males ≥ 1 year old:	34.5%	31.9%
Total:	11.1%	10.4%
Proposed change in post-season population:	+7.7%	+9.3%

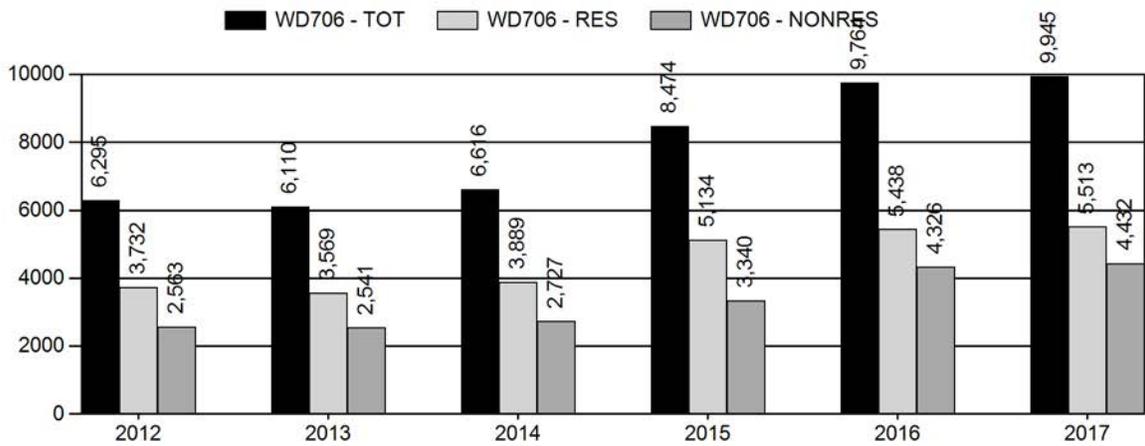
Population Size - Postseason



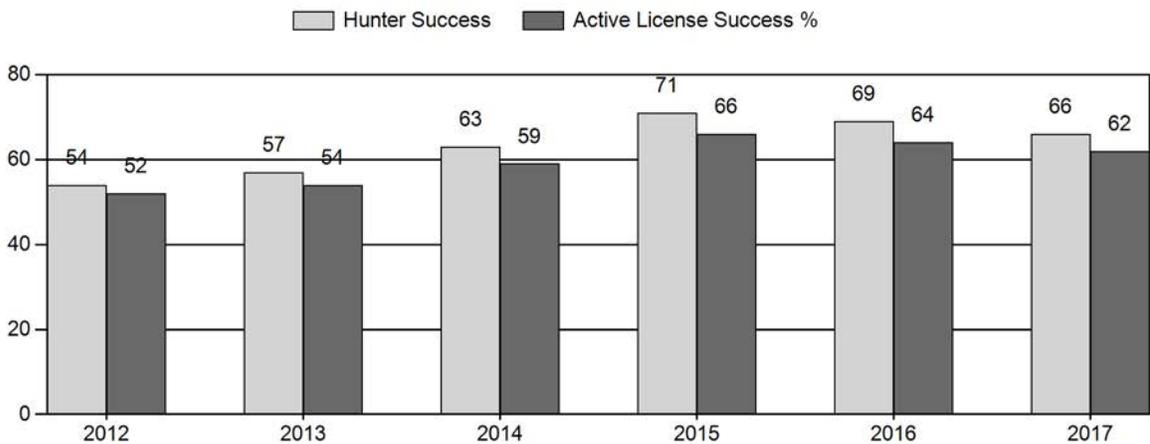
Harvest



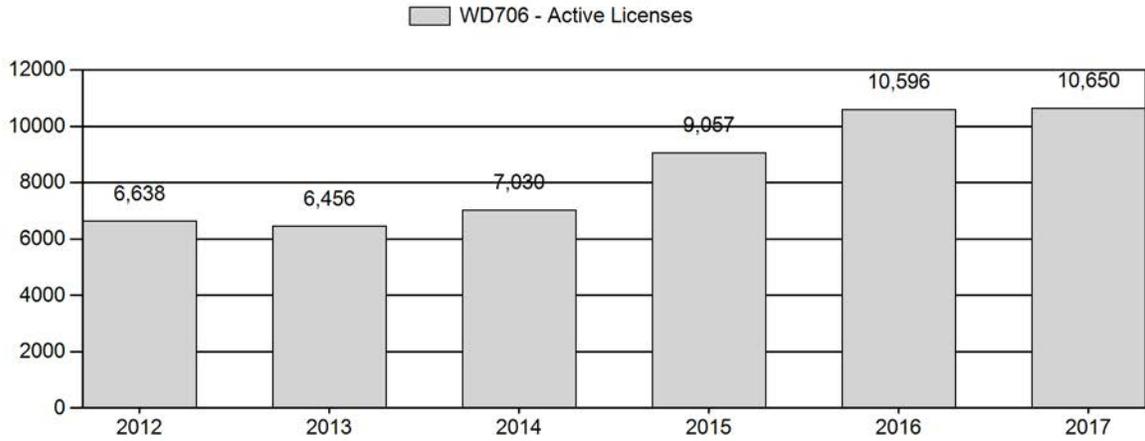
Number of Active Licenses



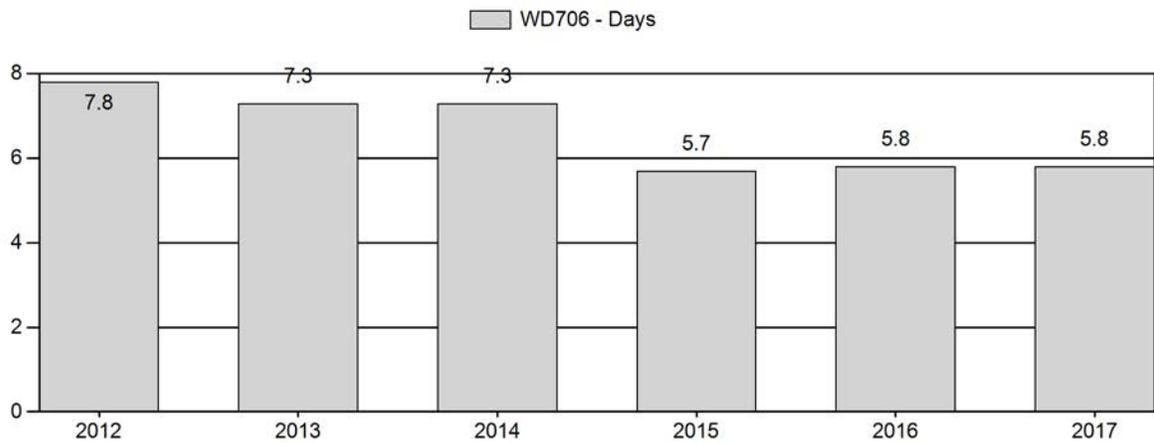
Harvest Success



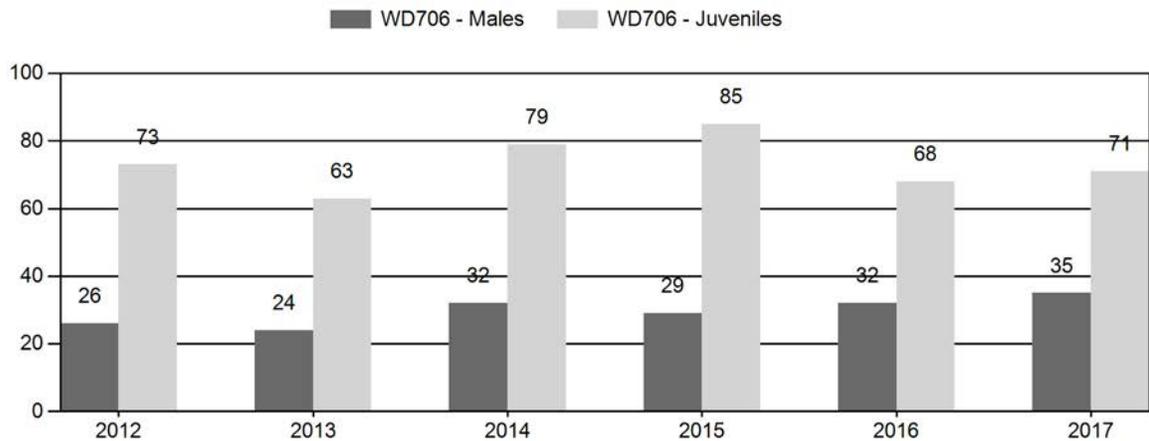
Active Licenses



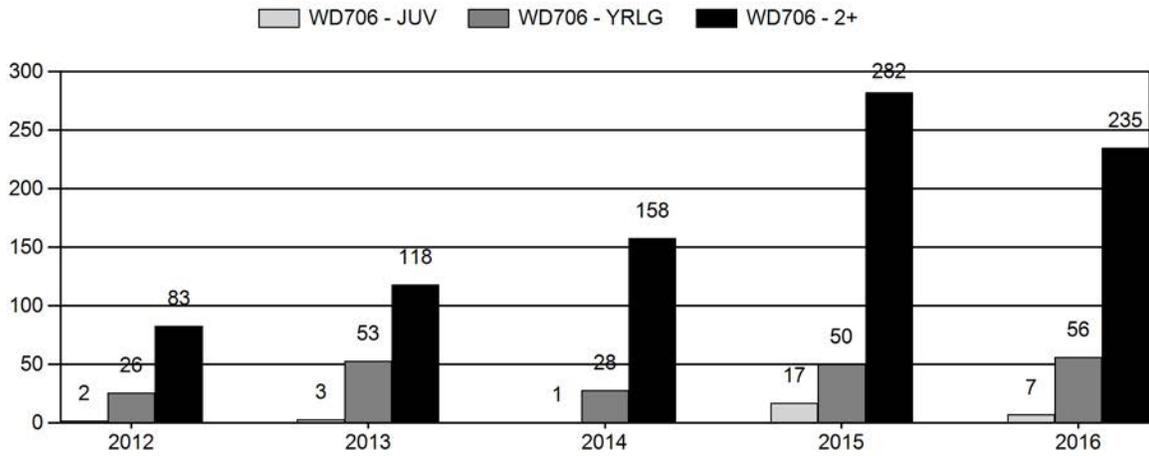
Days Per Animal Harvested



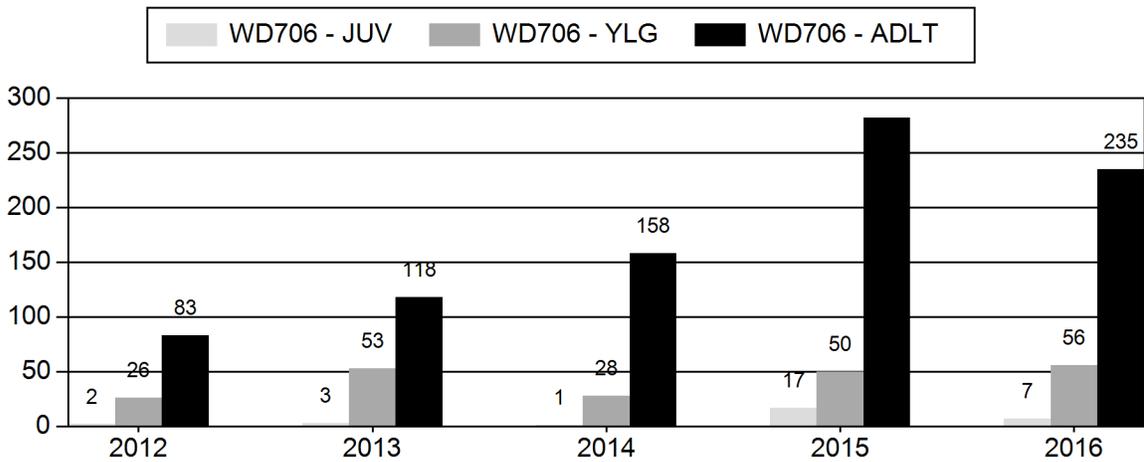
Preseason Animals per 100 Females



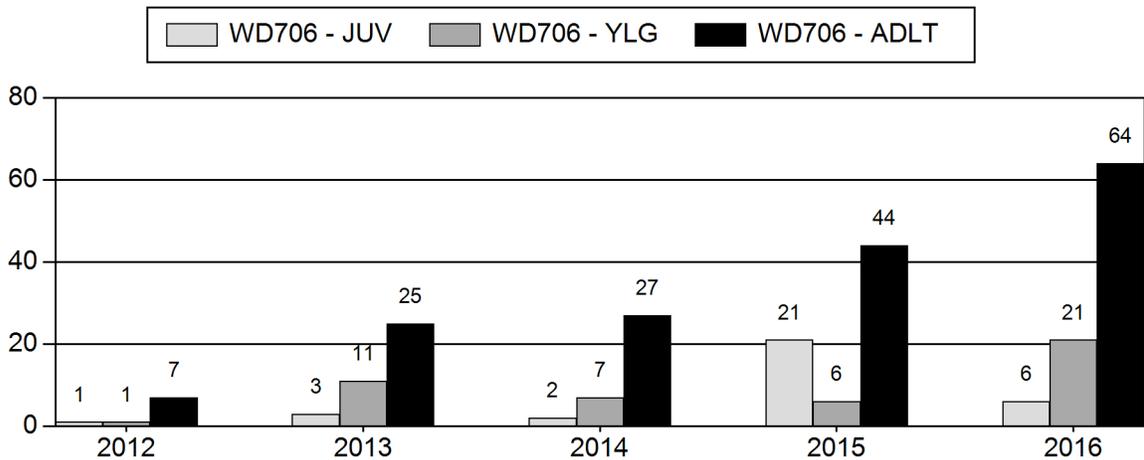
Age Structure of Field Checked Males



Age Structure Data (Field and Laboratory) - Male



Age Structure Data (Field and Laboratory) - Female



2012 - 2017 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
2012	43,891	93	143	236	13%	919	50%	675	37%	1,830	1,590	10	16	26	± 0	73	± 0	58
2013	52,709	163	153	316	13%	1,303	53%	827	34%	2,446	1,232	13	12	24	± 0	63	± 0	51
2014	55,385	111	198	309	15%	980	47%	778	38%	2,067	1,888	11	20	32	± 0	79	± 0	60
2015	58,681	157	212	369	14%	1,276	47%	1,079	40%	2,724	2,132	12	17	29	± 0	85	± 0	66
2016	56,571	169	224	393	16%	1,216	50%	825	34%	2,434	1,464	14	18	32	± 0	68	± 0	51
2017	65,541	144	321	465	17%	1,331	49%	947	35%	2,743	1,605	11	24	35	± 0	71	± 0	53

**2018 HUNTING SEASONS
BLACK HILLS WHITE-TAILED DEER HERD (WD706)**

Hunt Area	Type	Dates of Seasons		Quota	License	Limitations
		Opens	Closes			
1		Nov. 1	Nov. 30		General	Antlered white-tailed deer off private land; any white-tailed deer on private land
1, 2, 3	7	Nov. 1	Nov. 30	4,200	Limited quota	Doe or fawn valid on private land
2		Nov. 1	Nov. 30		General	Antlered deer off private land; any deer on private land
3		Nov. 1	Nov. 30		General	Antlered deer off private land; any deer on private land
4		Nov. 1	Nov. 20		General	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	300	Limited quota	Doe or fawn valid on private land
5		Nov. 1	Nov. 20		General	Antlered deer off private land; any deer on private land
5	6	Nov. 1	Nov. 20	200	Limited quota	Doe or fawn
6		Nov. 1	Nov. 20		General	Antlered deer off private land; any deer on private land
Archery		Sep. 1	Sep. 30			Refer to license type and limitations in Section 2

Region A Nonresident Quota: 4,500

SUMMARY OF CHANGES IN LICENSE NUMBER¹

Hunt Area	License Type	Quota change from 2017
<i>1</i>	<i>7</i>	<i>see MD751</i>
1,2,3	8	-3,500
<i>2</i>	<i>6</i>	<i>see MD751</i>
<i>4</i>	<i>6</i>	<i>see MD751</i>
<i>5</i>	<i>6</i>	<i>see MD751</i>
Herd Unit Totals	8	-3,500
	Region A	<i>None (see MD751)</i>

¹ Type 6 and 7 licenses and Region A quotas and changes for Hunt Areas 1-6 are captured in the MD751 JCR.

Management Evaluation

Current Management Objective: 55,000

Management Strategy: Recreational

2017 Postseason Population Estimate: ~ 58,300

2018 Proposed Postseason Population Estimate: ~ 63,700

2017 Hunter Satisfaction: 81% Satisfied, 12% Neutral, 7% Dissatisfied

HERD UNIT ISSUES: In 2015, the management objective of the Black Hills White-Tailed Deer Herd Unit was revised to a post-season population of 55,000. Prior to this revision, an objective of 40,000 had been in place since 1983. The herd continues to be managed under the Department's "Recreational Management Strategy," which calls for 24 to 44 bucks per 100 does observed pre-season.

Over the years, modeling this population has been difficult. This is due to substantial interstate movement of deer, wide fluctuations in observed fawn:doe ratios, large changes in doe harvest, regular outbreaks of epizootic hemorrhagic disease virus (EHDV), mountain lion predation, a high level of vehicle-deer collisions, severe weather events, and low and irregular visibility of bucks during classifications. Consequently, the population model is thought to be of low quality and estimates produced by the model should be viewed cautiously.

The Black Hills White-Tailed Deer Herd unit is located primarily within Crook and Weston Counties in northeastern Wyoming and encompasses about 3,140 mi² of occupied habitat. Seasonal range maps for this herd were updated in 2004, and currently 335 mi² are delineated as crucial winter range. However, there have been no research projects to precisely quantify seasonal ranges. Instead, seasonal ranges have been defined by local personnel based upon field observations. Dominant land uses include livestock grazing and forage crop production. Most forested lands are actively managed for timber production. 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 within the Belle Fourche River drainage where habitat is favorable.

Approximately 79% of the land within this herd unit is privately owned. The largest blocks of accessible public land are found on the Black Hills National Forest in Hunt Areas (HA) 2 and 4, Thunder Basin National Grasslands in HA 6, and BLM lands in HA 1. Due to the late timing of deer hunting seasons in the Black Hills relative to other areas in Wyoming and the potential to harvest a whitetail on public land, this herd unit is extremely popular with resident hunters (~ 5,500 in 2016 & 2017). Its proximity to the upper Midwestern United States and availability of sympatric mule deer hunted concurrently make it very popular with non-residents as well (~ 4,400 in 2016 and 2017). Access fees for hunting are common on private land, and many holdings have been leased to outfitters. Consequently, accessible public lands are subject to very heavy hunting pressure, probably the highest in the State. Due to limited access for hunters to private land, keeping the growth of this herd in check is difficult when habitat and weather conditions are favorable for deer productivity and survival.

Whitetails are the most numerous deer species in HA's 2 and 4, whereas more equal proportions of whitetails and mule deer are found in HA 1 and 3, and distribution favors mule deer in HA's 5 and 6. The vast majority of white-tailed deer reside on private land. Because of this, management is heavily influenced by landowner tolerance of deer numbers. Field personnel

report white-tailed deer numbers (primarily north of I-90) are now close to or exceeding local tolerance. A survey of about 450 Black Hills landowners at the end of 2014, a time when the estimated population was 20% lower, revealed half of the respondents (52%) having whitetails on their property believed their numbers to be “about right;” while just over a third (35%) reported their numbers to be “too low;” and only 13% felt whitetail numbers were “too high.” More recently, as this population has rebounded fewer landowners are asking to see more deer on the landscape, hunter satisfaction has increased, and more landowners would like to stabilize or reduce white-tailed deer numbers.

WEATHER: This white-tailed deer population peaked in 2007 following eight years of basically warmer and drier than normal weather. The herd then declined dramatically, something that was exacerbated by a harsh winter during bio-year 2010 and severe drought in 2012. 2013 saw a transition to good growing season weather and an average winter. Then, in both 2014 and 2015 warm and wet growing seasons followed by mild winters set the stage for excellent fawn productivity and survival, leading to a rapid rebound in the population. More recently, moderately severe drought plagued the Black Hills during the primary growing seasons of 2016 and 2017. Both of these drought years resulted in poor forage production. Fall weather over this same timeframe was characterized by normal to slightly above average temperatures and below average precipitation. Then, coming on the heels of drought both of the past two growing seasons, more normal to severe winter weather was experienced, most notably this winter. See <http://www.ncdc.noaa.gov/cag/> for detailed weather information.

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 wild spiraea (*Spirea 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.

FIELD DATA: Preseason age and sex classifications are conducted in this herd unit during the second half of October each year along standardized routes. Most of these routes have been used for over 40 years. Since the 1980's, fawn production and survival has been generally below that observed in most white-tailed deer herds, and at times fluctuated dramatically (Mean₁₉₉₇₋₂₀₁₇ = 62:100; std. dev. = 13.2). However, over the last decade observed fawn:doe ratios have generally improved and fluctuations diminished (Mean₂₀₀₈₋₂₀₁₇ = 70:100; std. dev. = 7.4, see Figure 1). This has likely been a result of vegetative responses to fire enhancing forage quality and quantity.

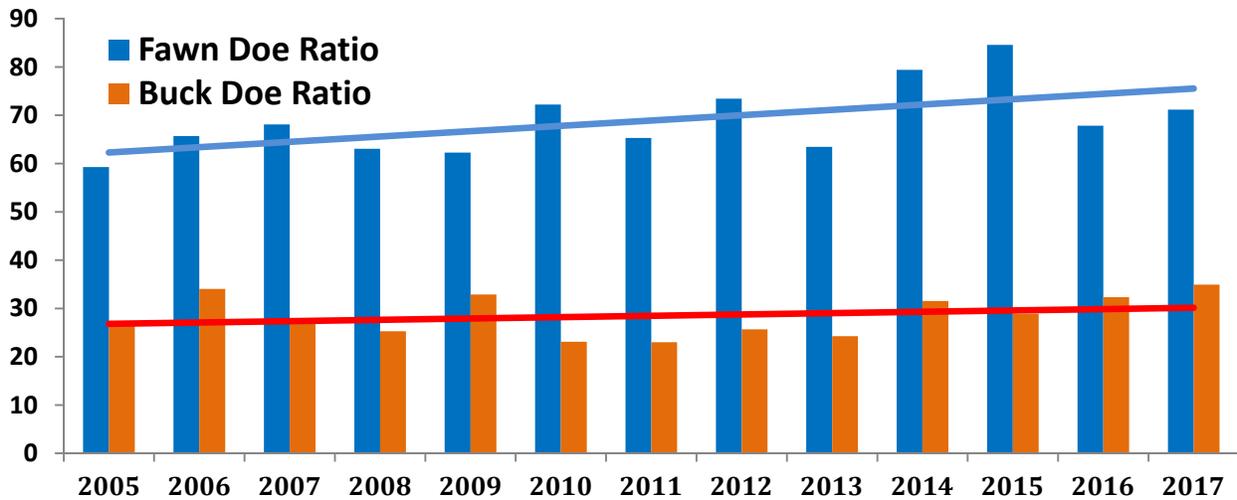


Figure 1. Observed, preseason fawn:doe and buck:doe ratios in the Black Hills White-Tailed Deer Herd (2005-2017), with linear trend lines.

This herd's observed, preseason buck:doe ratios are 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 corrective factor was determined from historical modeling efforts and the inflation in buck:doe ratios needed to get models to run given harvest levels of bucks. Additionally, there have been occasional years when observed buck ratios inexplicably jumped about 30% (something attributed to intermittently enhanced visibility of bucks during preseason spotlight surveys). Overall, preseason buck:doe ratios the past ten years have been generally stable (mean₍₀₈₋₁₇₎ = 28:100; std. dev = 4.5). This stability has been a result of substantial reductions in buck hunting pressure when this population declined and non-hunting mortality increased. The recent, observed increases in the preseason buck:doe ratio have been due to perhaps to some enhanced visibility, but most ostensibly from improvements in fawn production and survival in 2014 and 2015.

HARVEST DATA: In the Black Hills, deer management entails regulating both mule deer and whitetail harvest under general license season structures across a variety of habitats, with serious deference given to landowner desires. Historical analysis of harvest information suggests hunter number has the greatest impact on buck harvest. Therefore, buck harvest has been regulated by altering non-resident hunter participation 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 hunt areas north of I-90. Alteration of season length impacts resident hunter participation by encouraging or curtailing the late season influx of hunters during a period when buck deer are highly vulnerable to harvest. For example, when the 30-day white-tailed deer hunting season was reinstated in HAs 1-3, resident hunter numbers increased about 40% above the average number witnessed during the preceding years when shorter seasons were in place.

With conservative hunting season structures between 2010 and 2013, harvest of both antlered and antlerless whitetails dropped. After 2014, as this herd began to recover, doe/fawn license issuance was increased and buck harvest climbed with increases in the Region A quota and

resident hunter participation. As a result, annual harvest has increased 90% since 2013. Additionally, after a five year period of fairly consistent harvest success, both hunter success and active license success climbed in 2014 and 2015, and then basically leveled off in 2016 and 2017. Overall, harvest statistics support the projections that this population peaked in 2007, and then over the next ten years declined before it rebounded substantially.

Hunting seasons between 2010 and 2014 reduced annual harvest of whitetail bucks about 30% from that experienced during the traditional November season the preceding four years. Comparing these time periods, resident harvest of white-tailed bucks dropped about 20%, while non-resident harvest of white-tailed bucks dropped closer to 40%. As mentioned above, resident hunter numbers have increased substantially since 2014, as the white-tailed deer hunting season was extended to the entire month of November in HA's 1, 2, & 3. Likewise, increasing the Region A quota to 4,500 the past two years has put significantly more non-resident hunters on the ground. As a result, white-tailed buck harvest has risen about 60% since 2014.

Despite the harvest trends, preseason whitetail buck:doe ratios held fairly stable and deer hunter satisfaction remained essentially unchanged between 2011 and 2013, with about 68% of white-tailed deer hunters reporting they were either satisfied or very satisfied with their Black Hills deer hunt. Satisfaction improved in 2014 as hunter success climbed and effort dropped, with 75% of the white-tailed deer hunters reporting they were satisfied. With continued good success and declines in the effort required to harvest a deer, hunter satisfaction has improved and remained just above 80% since 2015.

POPULATION: As noted above, population modeling of this herd has always been very difficult and problem-filled. In 2014, the spreadsheet model for this herd was reconstructed and re-initiated after correcting errors detected in the previous model and experimenting with models of various constructions. Of the final three competing spreadsheet models, the Semi-Constant Juvenile / Semi-Constant Adult survival (SCJ SCA) model has continued to be selected each year to estimate this population. The present model is set to “solve” through the projected bio-year (2018) instead of only on years for which actual field data exist. This change, initiated two years ago, revised the population estimates for the most recent years upward, but allows for a standardized method of estimating next year's post-season population. On the down side, it results in situations where impacts such as the effects of EDHV, which caused significant mortality in some locations during 2017, are not recognized by the model because actual changes in future harvest and age/sex ratios inform the model in “hindsight.”

While the Constant Juvenile / Constant Adult survival (CJ CA) model will function with this herd's data set, it produces essentially a stable population of about 87,000 deer since 1993, which does not comport at all with field observations or harvest statistics. The AICc of this model is also about double that of the competing models and it most poorly fits observed data. On the other hand, the Time Sensitive Juvenile / Constant Adult survival model (TSJ CA) yields an AICc value about 11% lower than that of the SCJ SCA model and provides best fit of observed buck:doe ratio data. However, this model was rejected because in order to get it to function, juvenile survival rates had to be allowed to vary down to 25% in 8 out of 23 years, and it predicts very low (about 33%) survival in five other years. Additionally, this model is not as well correlated with preseason trend count data or harvest statistics. The SCJ SCA model is 77% correlated with preseason trend counts while the TSJ CA model is 70% correlated (Figure 2). The preseason population estimates produced by the SCJ SCA model are also better correlated

with hunter success (89% compared to 60% with the TSJ CA model). Similarly, preseason population estimates of the SCJ SCA model exhibit an 84% inverse correlation with hunter effort, while the TSJ CA model predictions are negatively correlated at 67%. Finally, the trends produced by the SCJ SCA model are much more congruent with field personnel and landowner perceptions. However, this model indicates a substantial decline in the population in 2009 that was not actually realized until after the 2010/11 winter; and (as noted above) it does not capture the apparent stabilization or drop of deer numbers into 2017 that resulted from EHDV, which is apparent from harvest statistics and field observations. Finally, the SCJ SCA model estimates a mean buck harvest rate of about 36% the past five years, which is 10% higher than what the TSJ CA estimates, but something quite reasonable. Therefore, due to the variety of factors identified, we consider the chosen model to be of poor quality, but better than the competing models.

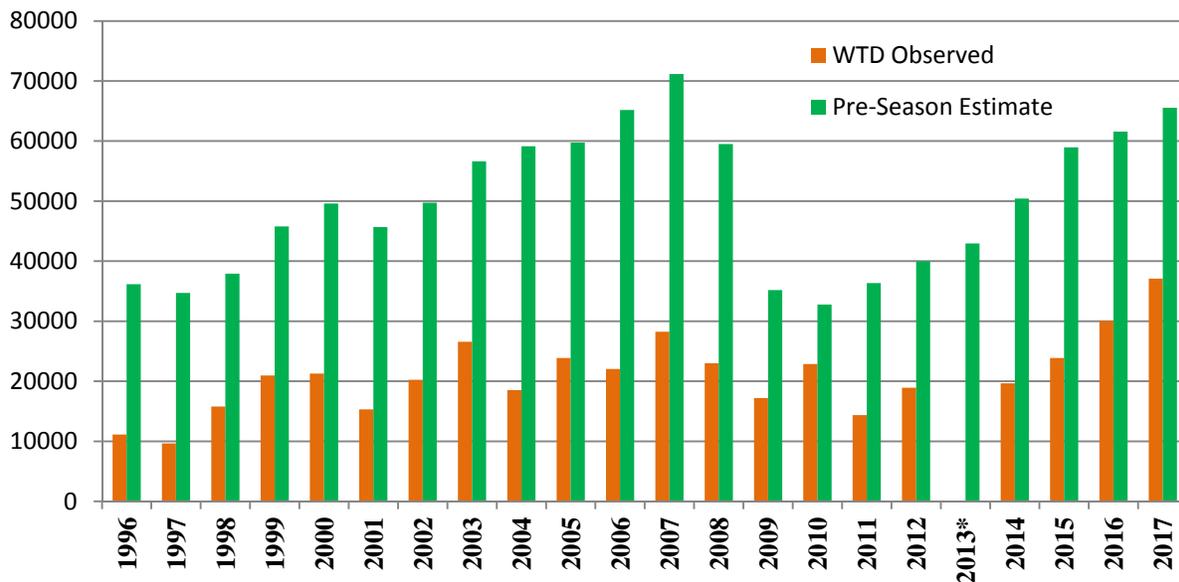


Figure 2. 1996-2017 white-tailed deer, estimated preseason population and trend count data, increased by a factor of 5. Note, trend count not completed 2013.

It should also be noted that the current year’s post-season population estimate recorded in the JCR program and presented on page 1 are no longer updated in subsequent years, but rather remain fixed following JCR finalization. Because of this, and the fact that estimates produced by our models at the beginning and ending years of model construction are the most tenuous and subject to change as more years of data are added, the estimates provided in Figure 3 better reflect recent trends in this herd’s population size.

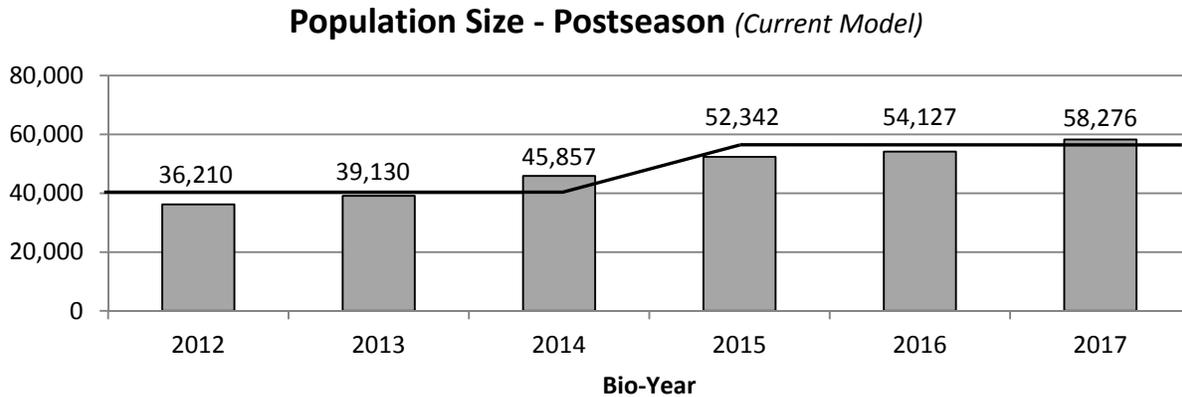


Figure 3. Post-season population estimates (2012 – 2017) produced by the 2018 SCJ SCA model

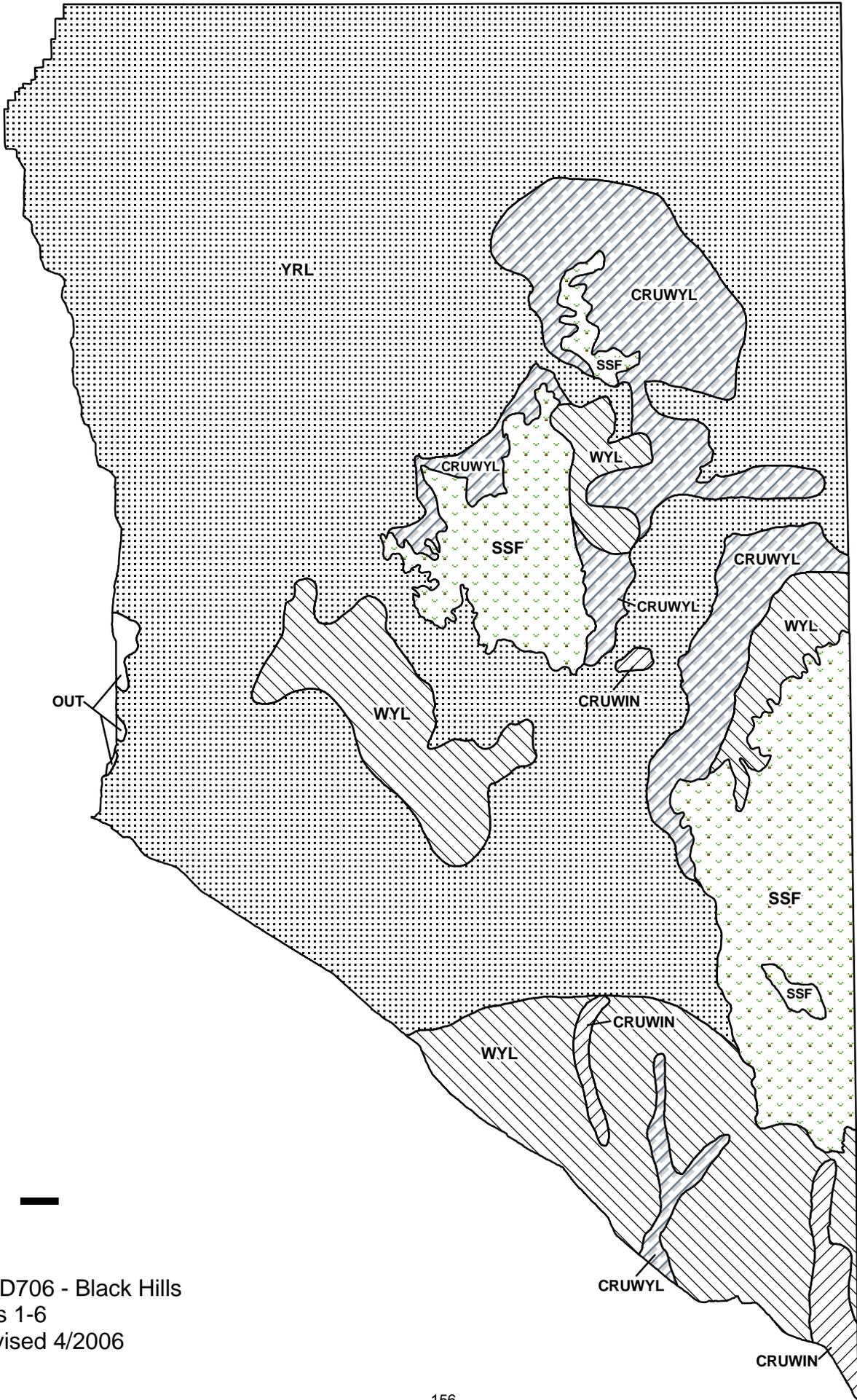
Based upon the current SCJ SCA model, this population grew 56% between 2001 and 2007. The population then dropped the same relative amount to ~ 28,000 in 2010, before more than doubling through 2017. The 2007 peak (~ 64,400), subsequent decline and rebound in the population reflects overall field observations. However, as previously noted, by all accounts this population dropped steadily from 2007 through 2011 – a trend shown one year antecedent in the model’s projections, and was stable, or more likely declined, this past year. If population estimates produced by the spreadsheet model are close to accurate, then our current objective is near landowner tolerance and yields excellent hunter satisfaction.

MANAGEMENT SUMMARY: The modest changes to the 2018 white-tailed deer hunting season were designed to maintain buck harvest and hopefully increase take of antlerless white-tailed deer. The season structure retains Region A license issuance and the traditional November 30th closing date in Hunt Areas 1, 2, and 3, and that of November 20th in HA’s 4, 5, & 6. It also makes an abundant number of doe/fawn licenses available, which have failed to sell out the past couple of years. Whitetail buck numbers have shown sustained improvement in recent years. As such, there should be a strong cohort of 2 to 4 year-old bucks available in 2018, along with a fair contingent of older bucks. Therefore, it seems prudent to maintain buck harvest even with the increased non-hunting mortality we have experienced recently. This will also help maintain total non-resident hunter numbers, which are important to affect doe harvest.

White-tailed doe harvest needs to be sustained or augmented to stabilize this population, and landowners must be proactive in curbing increases in whitetail numbers. To help foster these goals and simplify the regulations, there will be a reduction in the various types of doe/fawn licenses issued. All of the doe/fawn tags valid north of I-90 will now fall under a single license and type (HA 1, 2, 3 Type 7), which is valid for doe or fawn on private land only. This single license type replaces the HA 1 Type 6, HA 2 Type 7, and HA 1, 2, 3 Type 8 licenses that have been issued the past several years. Because the Type 8 licenses have remained well under-subscribed the past couple of years, the total number of doe/fawn licenses valid in HA’s 1, 2, and 3 remains unchanged at 4,200. It is projected that a few more doe/fawn licenses will sell in 2018 and active license success will be about 85%. This should result in a harvest from HA’s 1, 2, and 3 of about 2,100 antlerless whitetail deer. In addition, doe/fawn license issuance for HA 5 is being increased by 50 tags, while remaining set in HA 4 and eliminated from HA 6. Because we believe resident general license hunter numbers will not change significantly in 2018 and most

non-residents don't harvest antlerless deer on their Region A License, it is anticipated doe/fawn harvest on general licenses will not change. As a result, it is anticipated there will be a total harvest of about 2,300 to 2,400 antlerless white-tailed deer in 2018. This should provide a female harvest rate of around 7%. Given the consistent data on harvest percentages by species, complicating the regulations by segregating mule deer and white-tailed deer harvest more than we already have on general licenses is not warranted. A female harvest rate in excess of 10% is needed to control this population, but until there is better access for antlerless deer hunters to private land and all the available licenses sell, that will not happen.

The 2018 hunting season is projected to yield an estimated postseason population of about 63,700 white-tailed deer, which represents a 9% increase in the current, estimated post-season population. However, these projections assume over-winter mortality will be moderate, reproduction and recruitment next year a bit better than long-term average, and summer losses to EHDV minimal. Provided the projected change in population is reached, this herd would be about 15% above objective – something quite different from the 4% below objective that was predicted in 2017. However, given actual conditions on the ground, this population is likely 10% or more lower than estimated, but at a level most landowners would like to see, is satisfying to hunters, and probably not going to increase as projected by the model. Overall, the 2018 hunting season should continue to temper population growth while resulting in a slight drop in the buck:doe ratio. In the end, the story written will depend upon doe/fawn license sales and the level of over-winter mortality we experience this year.



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

2017 - JCR Evaluation Form

SPECIES: White tailed Deer

PERIOD: 6/1/2017 - 5/31/2018

HERD: WD707 - CENTRAL

HUNT AREAS: 7-14, 21-22, 34, 65-67, 88-89

PREPARED BY: WILLOW BISH

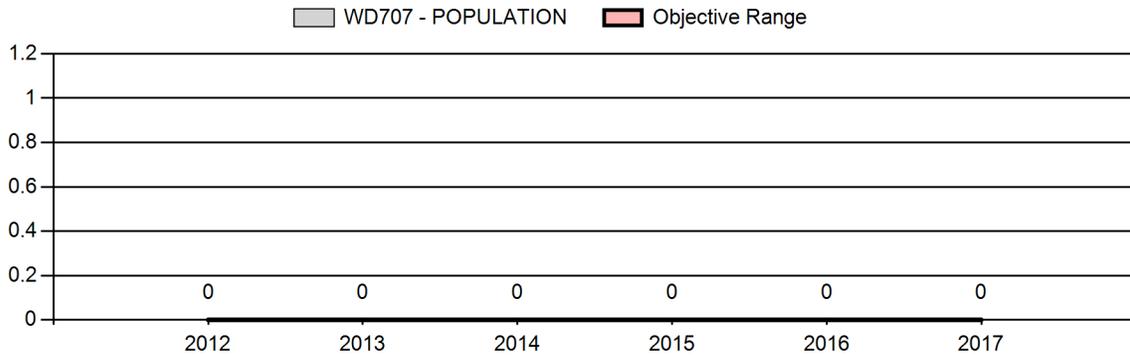
	<u>2012 - 2016 Average</u>	<u>2017</u>	<u>2018 Proposed</u>
Population:	0	N/A	N/A
Harvest:	987	1,030	1,300
Hunters:	2,246	2,191	2,400
Hunter Success:	44%	47%	54 %
Active Licenses:	2,572	2,473	2,700
Active License Success:	38%	42%	48 %
Recreation Days:	11,056	8,652	9,000
Days Per Animal:	11.2	8.4	6.9
Males per 100 Females	36	45	
Juveniles per 100 Females	68	75	

Population Objective (\pm 20%) :	0 (0 - 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

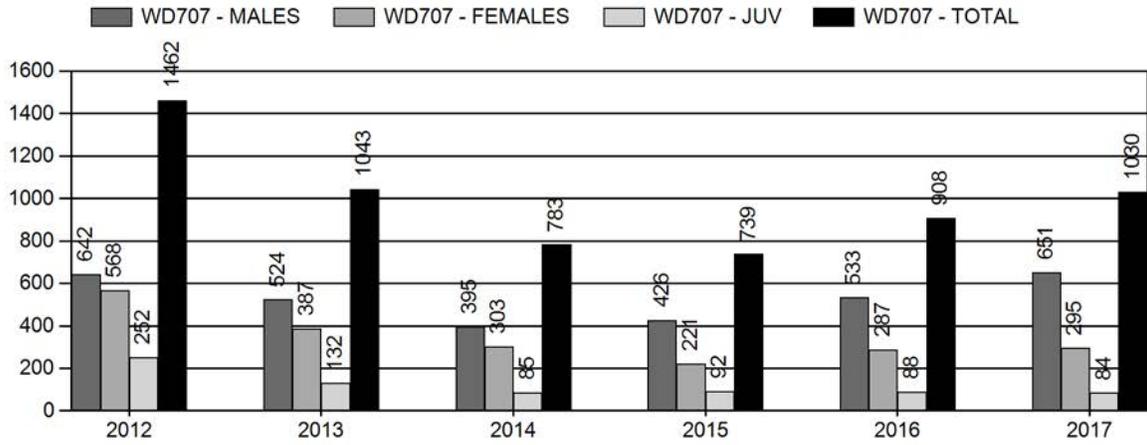
Proposed harvest rates (percent of pre-season estimate for each sex/age group):

	<u>JCR Year</u>	<u>Proposed</u>
Females \geq 1 year old:	0%	0%
Males \geq 1 year old:	0%	0%
Total:	0%	0%
Proposed change in post-season population:	0%	0%

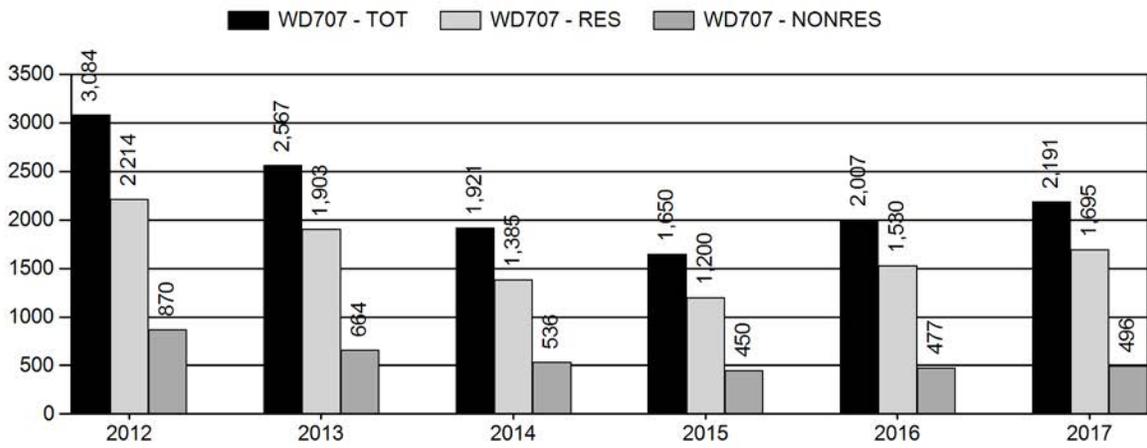
Population Size - Postseason



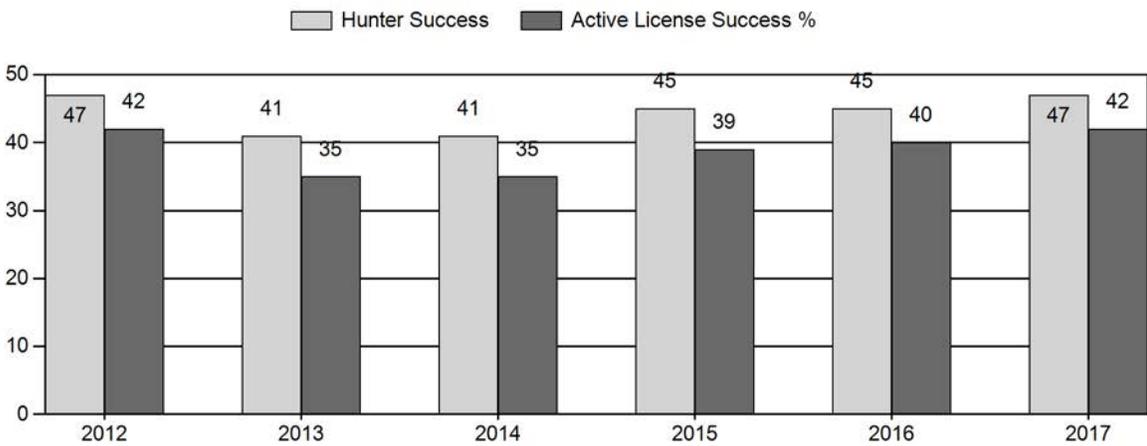
Harvest



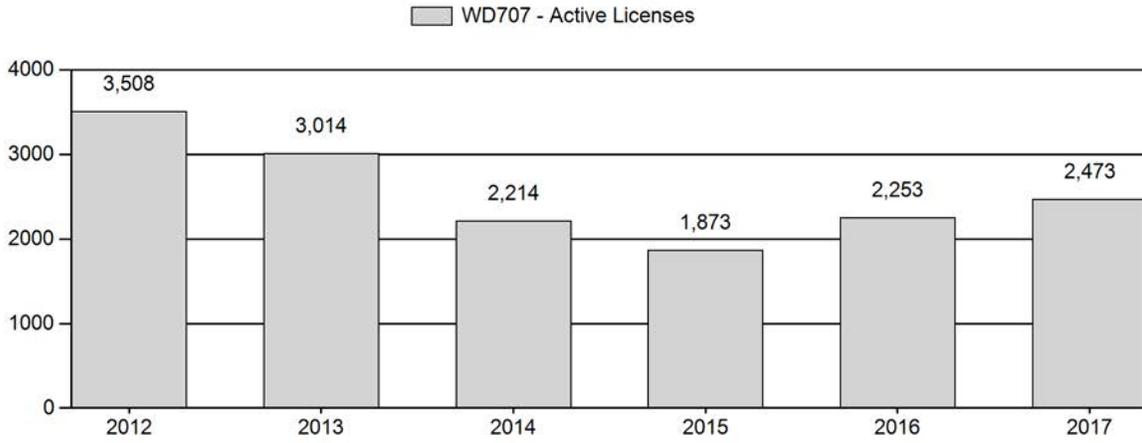
Number of Active Licenses



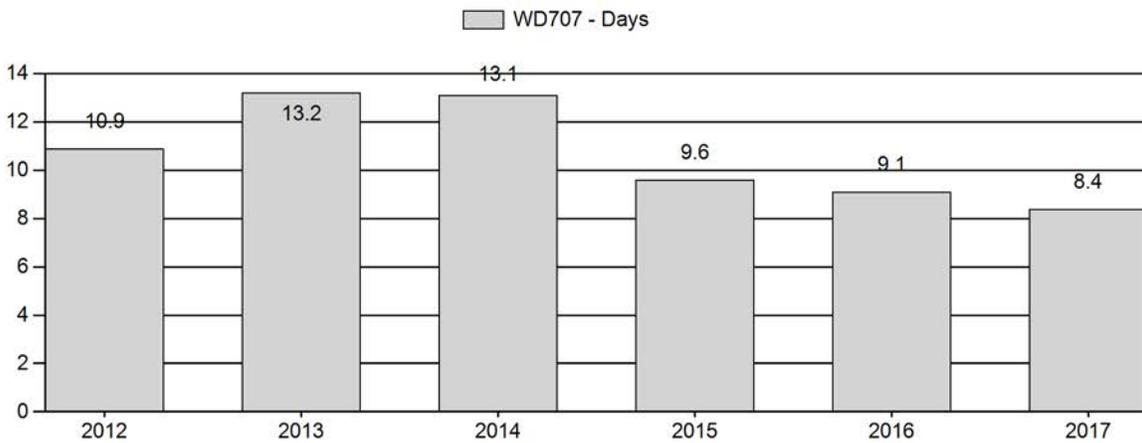
Harvest Success



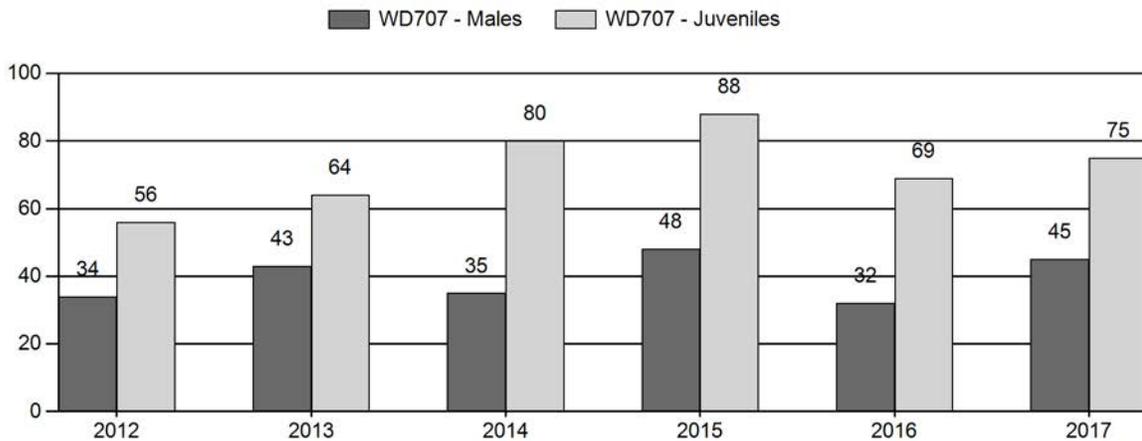
Active Licenses



Days per Animal Harvested



Postseason Animals per 100 Females



2012 - 2017 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	%			Ylng	Adult	Total	Int	Conf	100 Fem	Conf Int
2012	0	54	76	130	18%	381	53%	212	29%	723	0	14	20	34	± 0	56	± 0	41
2013	0	19	61	80	21%	188	48%	121	31%	389	0	10	32	43	± 0	64	± 0	45
2014	0	11	24	35	16%	100	47%	80	37%	215	0	11	24	35	± 0	80	± 0	59
2015	0	48	59	107	20%	223	42%	196	37%	526	0	22	26	48	± 0	88	± 0	59
2016	0	78	127	205	16%	635	50%	436	34%	1,276	0	12	20	32	± 0	69	± 0	52
2017	0	69	114	183	21%	404	45%	301	34%	888	0	17	28	45	± 0	75	± 0	51

**2018 HUNTING SEASONS
CENTRAL WHITE-TAILED DEER (WD707)**

Hunt Area	Type	Season Dates		Quota	License	Limitations
		Opens	Closes			
7, 8, 9	3	Oct. 1	Nov. 30	50	Limited quota	Any white-tailed deer
7, 8, 9	8	Oct. 1	Nov. 30	50	Limited quota	Doe or fawn white-tailed deer
10	3	Oct. 1	Nov. 30	35	Limited quota	Any white-tailed deer
10	8	Oct. 1	Nov. 30	35	Limited quota	Doe or fawn white-tailed deer
11,12 13,14	3	Oct. 1	Nov. 30	300	Limited quota	Any white-tailed deer
11,12 13,14	8	Oct. 1	Nov. 30	300	Limited quota	Doe or fawn white-tailed deer
11		Oct. 16	Nov. 30		General	Any white-tailed deer
12		Oct. 16	Nov. 30		General	Any white-tailed deer
13		Oct. 16	Nov. 30		General	Any white-tailed deer
14		Oct. 16	Nov. 30		General	Any white-tailed deer
21	8	Oct.1	Oct. 31	50	Limited quota	Doe or fawn white-tailed deer valid on private land
22	3	Oct. 1	Nov. 30	100	Limited quota	Any white-tailed deer
22	8	Oct. 1	Nov. 30	100	Limited quota	Doe or fawn white-tailed deer
34	3	Oct. 15	Nov. 30	50	Limited quota	Any white-tailed deer
65	3	Oct. 15	Nov. 30	400	Limited quota	Any white-tailed deer, also valid in that portion of Area 66 in Converse County
65	8	Oct. 15	Nov. 30	400	Limited quota	Doe or fawn white-tailed deer, also valid in that portion of Area 66 in Converse County
66,88,89	3	Oct. 15	Nov. 30	150	Limited quota	Any white-tailed deer
66,88,89	8	Oct. 15	Nov. 30	100	Limited quota	Doe or fawn white-tailed deer

Archery

Refer to license type and limitations in Section 2

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 7-14, 22, 34, 65-67, 88, and 89 but are not captured here.

Hunt Area	License Type	Quota Change from 2017
7, 8, 9	3	+50
	8	+50
10	3	+35
	8	+35
22	3	+25
	8	+50
34	3	+25
65	3	+100
	8	+200
66, 88, 89	3	+50
	8	+50
Herd Unit Total	3	285
	8	385

Management Evaluation

Current Management Objective: ≥ 20 bucks:100 does postseason

Management Strategy: Recreational

2017 Postseason Population Estimate: NA

2018 Proposed Postseason Population Estimate: NA

2017 Hunter Satisfaction: 73.7% Satisfied, 15.5% Neutral, 10.8% Dissatisfied

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, as this is not a well-defined or closed population. Managers are unable to obtain adequate classifications over this large herd unit as it is not a budget priority for helicopter surveys and there is 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 them 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 growth when the population is high since many Type 8 licenses typically remain unsold each year. Epizootic Hemorrhagic Disease (EHD) often regulates this population given the lack of female harvest.

Weather

Weather conditions from 2010-2012 coupled with EHD resulted in a significant reduction in this population. Beginning in 2013, conditions improved and the population responded accordingly. This more recent trend of favorable conditions has continued through 2017. Above average precipitation was received during the early part of the growing season, leading to good early-season forage production. However, this was followed by dry, but cooler than normal conditions through June and July. Ample precipitation was received throughout August which resulted in a secondary green up and helped to cure the forage out well for the winter. This spring and summer precipitation accounted for the above average precipitation received in 2017. The 2017-2018 winter started off mild, with higher than normal temperatures and lower than normal precipitation. The beginning of the year was characterized by more precipitation and a few extreme cold snaps. However, winter precipitation for 2018 thus far is still less than normal. Snow events have mostly not been frequent or extreme enough to accumulate much snow, allowing deer to feed throughout winter. However, the most recent storm in February produced 12'-18' of snow in most places and it has remained due to consistently cold weather. Although a few extreme cold snaps occurred, they were not likely of long enough duration to have any significant impacts to the deer population. Therefore, white-tailed deer have likely experienced normal over-winter survival this year.

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. However, browse quality and availability were relatively high along riparian corridors due to average or above average precipitation conditions since 2013. Anecdotal observations from field personnel noted good browse and herbaceous forb conditions throughout the herd unit. Many landowners also reported improved conditions for irrigation of hay fields in recent growing seasons.

Field Data

The fawn ratio in 2017 was 75, which is comparable to the previous 5 year average of 71. This herd appears to be rebounding from a low point following disease outbreak, harsh winters in 2010 and 2011, and the severe drought of 2012. This herd unit has had good fawn production for several years and is beginning to increase in size accordingly.

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 2017 the observed buck ratio was 45 per 100 does, with 17 of those being yearling bucks. The previous 5-year average was 38 total bucks per 100 does, with 14 of those being yearling bucks. 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. However, postseason classification ratios in this herd should be viewed with caution as

sample sizes are typically small and are not well stratified throughout the herd unit. For example, in 2017, only 888 white-tailed deer were classified in this herd and about 55% of these deer were found in Area 65. This hunt area has the highest population of white-tailed deer within the herd unit. Over the past 3 years, significantly more white-tailed deer were classified in this herd unit, which is likely due to an increasing population as well as increased sampling effort.

Harvest Data

License success in this herd unit is typically in the 40-50th percentile, and was 47 percent in 2017. License issuance varies greatly between the many hunt areas contained within the herd unit. Hunters can 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. In recent years, reductions in limited quota white-tailed deer licenses have been made due to low deer densities, declining hunter success, and few complaints regarding damage on private lands. White-tailed deer hunting opportunity peaked in 2011 with over 3,100 hunters afield. Between 2011 and 2015, license issuance has been gradually reduced as the population and hunting access have decreased, resulting in a low of 1,650 hunters afield in 2015. From 2011-2014, hunter success declined 32% while hunter effort (days to harvest) increased 34%. This trend is now reversing as hunter success and hunter effort were improved by 13% and 56%, respectively since 2014. Hunting opportunity for white-tailed deer is increasing and adjustments to license issuance are being made accordingly since 2016. In 2017, there were about 2,200 whitetail hunters in this herd unit, as a response to the increased license issuance and population. These numbers reflect field personnel's observations that white-tail hunting opportunity is increasing. Additional license increases are proposed for 2018 given the increasing population within many areas.

Population

Currently there is no population model that accurately represents this herd. Therefore, management is based on maintaining postseason buck ratios with a goal of ≥ 20 bucks per 100 does. Observed buck ratios continue to exceed this goal, and this population is continuing to recover from recent declines. The population reached a low point in 2013, following a harsh winter in 2010/2011, drought in 2012, and epizootic hemorrhagic disease in 2013. Fawn production and recruitment significantly improved beginning in 2014, and the population has been on an upward trajectory for the past 4 years.

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 2018 season includes 1,060 Type 3 licenses, 1,035 Type 8 licenses, and additional opportunities to harvest white-tailed deer on General and Type 1 licenses. Increased Type 3 and 8 licenses are being offered in Areas 22, 65, 66, 88, and 89. Type 3 and 8 licenses were added for Areas 7, 8, and 9 to allow additional white tail hunting opportunity in those areas. Area 10 was separated from 11-14 to improve hunter distribution. The abundance of public land in Area 10 resulted in a higher proportion of hunters hunting the area despite having very low white-tailed deer densities. Overall license issuance will increase by 285

Type 3 licenses and 385 Type 8 licenses. Goals for 2018 are to maintain buck ratios, improve hunter opportunity, afford landowners the opportunity to address agricultural damage on private lands if necessary, and allow for more hunting opportunity as a result of population increase.

If we attain the projected harvest of 1,300 white-tailed deer with fawn production/survival similar to the five-year average, buck ratios should be maintained well 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**

