

## 2013 - JCR Evaluation Form

SPECIES: White tailed Deer

PERIOD: 6/1/2013 - 5/31/2014

HERD: WD303 - POWDER RIVER

HUNT AREAS: 17-20, 23-33, 163, 169

PREPARED BY: TIM THOMAS

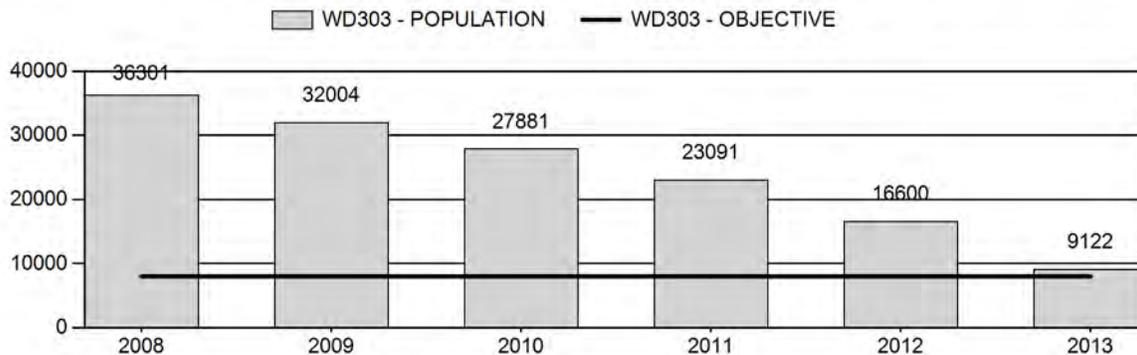
	<u>2008 - 2012 Average</u>	<u>2013</u>	<u>2014 Proposed</u>
Population:	27,175	9,122	N/A
Harvest:	5,648	5,681	5,000
Hunters:	7,346	8,094	7,000
Hunter Success:	77%	70%	71 %
Active Licenses:	8,744	9,226	8,000
Active License Percent:	65%	62%	62 %
Recreation Days:	37,804	38,802	33,500
Days Per Animal:	6.7	6.8	6.7
Males per 100 Females	37	32	
Juveniles per 100 Females	70	63	

Population Objective:	8,000
Management Strategy:	Recreational
Percent population is above (+) or below (-) objective:	14%
Number of years population has been + or - objective in recent trend:	10
Model Date:	03/06/2013

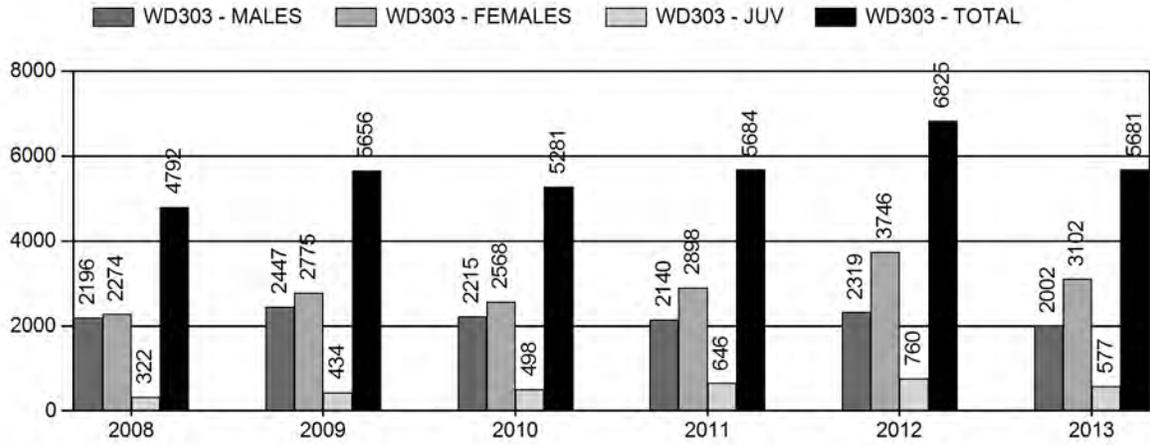
**Proposed harvest rates (percent of pre-season estimate for each sex/age group):**

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

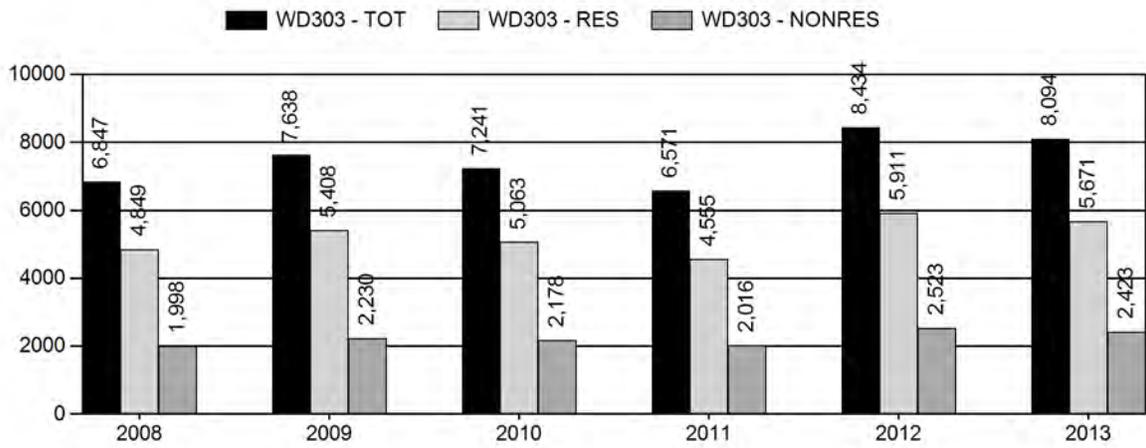
## Population Size - Postseason



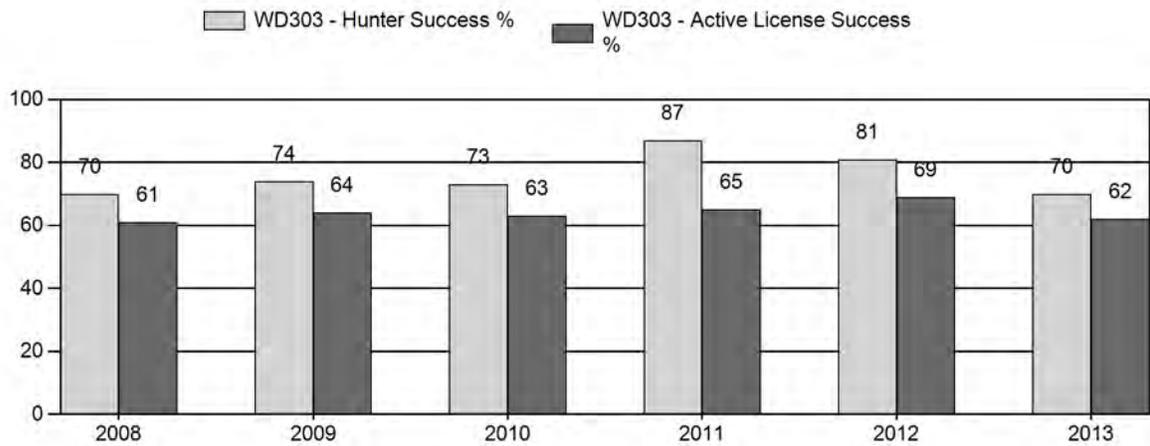
# Harvest



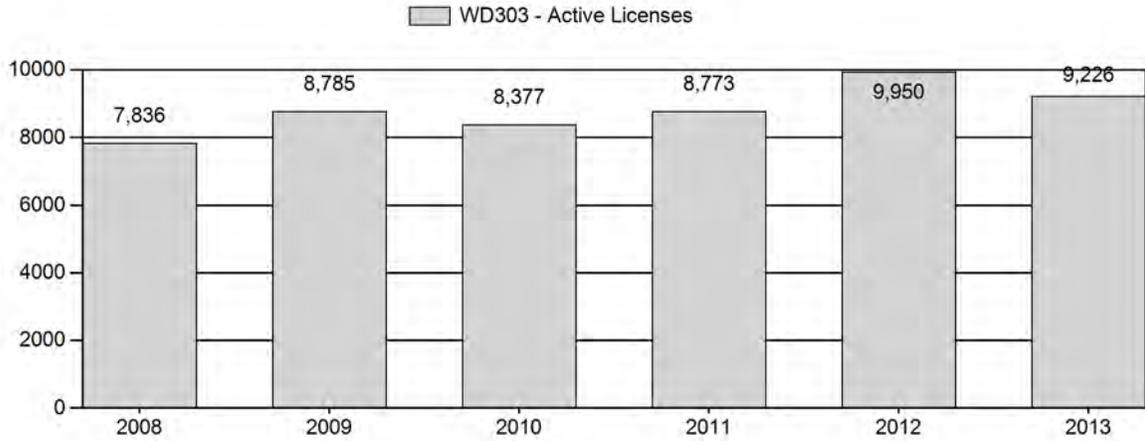
# Number of Hunters



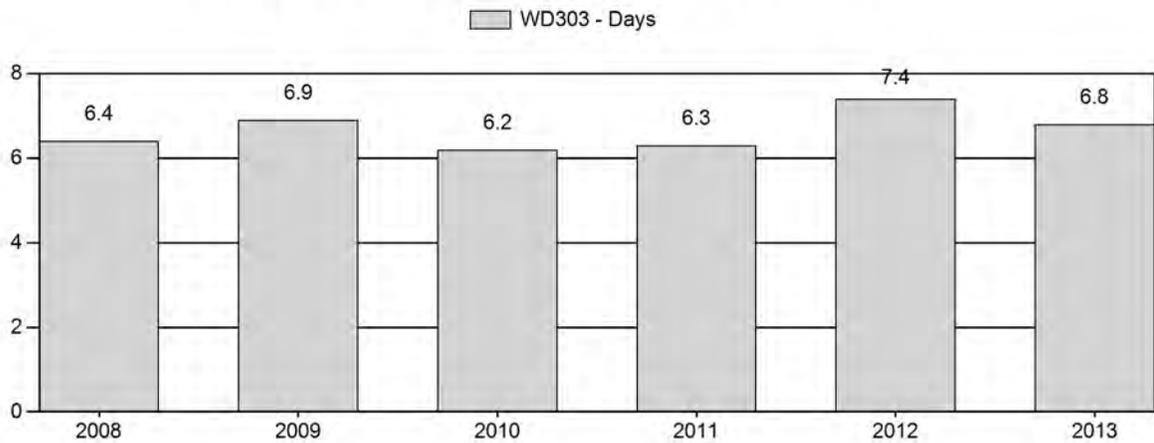
# Harvest Success



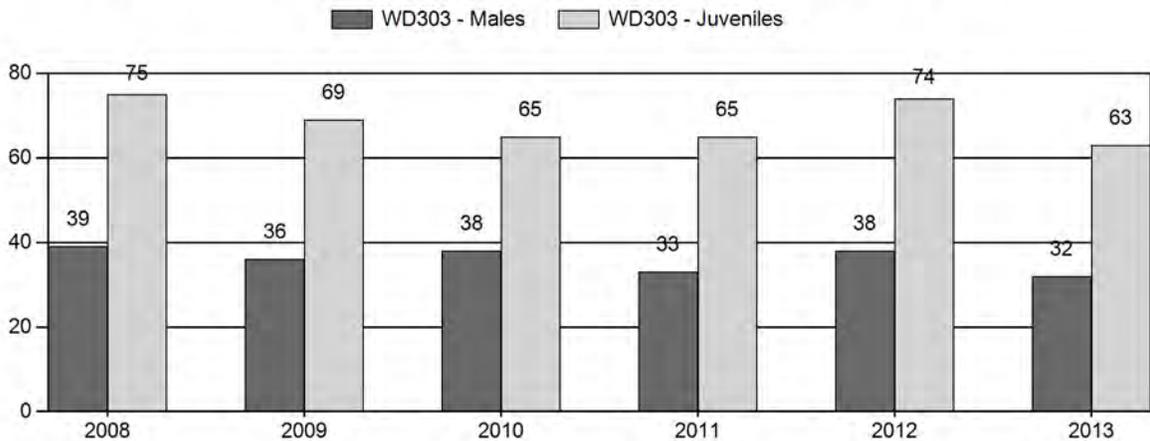
# Active Licenses



# Days per Animal Harvested



# Postseason Animals per 100 Females



## 2008 - 2013 Postseason Classification Summary

for White tailed Deer Herd WD303 - POWDER RIVER

Year	Post 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
2008	36,301	173	312	485	18%	1,251	47%	936	35%	2,672	1,631	14	25	39	± 3	75	± 4	54
2009	32,004	180	328	508	18%	1,393	49%	964	34%	2,865	1,435	13	24	36	± 2	69	± 4	51
2010	27,881	134	230	364	19%	946	49%	619	32%	1,929	1,349	14	24	38	± 3	65	± 4	47
2011	23,091	162	267	429	17%	1,302	50%	851	33%	2,582	1,286	12	21	33	± 2	65	± 3	49
2012	16,600	193	249	442	18%	1,163	47%	861	35%	2,466	1,573	17	21	38	± 3	74	± 4	54
2013	9,122	150	303	453	16%	1,437	51%	907	32%	2,797	1,211	10	21	32	± 2	63	± 3	48

**2014 HUNTING SEASONS  
POWDER RIVER WHITE-TAILED DEER HERD (WD303)**

Hunt Area	Type	Dates of Seasons		Quota	Limitations
		Opens	Closes		
17		Oct. 1	Oct. 20		General license; antlered mule deer or any white-tailed deer
	8	Nov. 1	Nov. 30	200	General license; any white-tailed deer
		Oct. 1	Nov. 30		Limited quota licenses; doe or fawn white-tailed deer
18		Oct. 1	Oct. 20		General license; antlered mule deer or any white-tailed deer
	8	Oct. 1	Nov. 30	50	Limited quota licenses; doe or fawn white-tailed deer valid on private land
19		Oct. 1	Oct. 20		General license; antlered mule deer or any white-tailed deer
		Nov. 1	Nov. 15		General license; any white-tailed deer
19,20	6	Oct. 1	Oct. 20	25	Limited quota licenses; doe or fawn valid on private land
20		Oct. 1	Oct. 20		General license; antlered mule deer or any white-tailed deer
		Nov. 1	Nov. 15		General license; any white-tailed deer
23		Oct. 1	Oct. 14		General license; antlered deer off private land, any deer on private land
		Nov. 1	Nov. 30		General license; any white-tailed deer
23,26	3	Nov. 1	Nov. 30	100	Limited quota licenses; any white-tailed deer
	6	Oct. 1	Dec. 15	1,700	Limited quota licenses; doe or fawn valid on private land
24		Oct. 15	Oct. 31		General license; antlered deer off private land, any deer on private land
		Nov. 1	Nov. 30		General license; any white-tailed deer
		Dec. 1	Dec. 15		General license; antlerless white-tailed deer
	3	Nov. 1	Nov. 30	150	Limited quota licenses; any white-tailed deer
	6	Sep. 1	Dec. 15	400	Limited quota licenses; doe or fawn valid on private land
	8	Sep. 1	Dec. 15	Unlimited	Doe or fawn white-tailed deer
25		Oct. 15	Oct. 31		General license; antlered mule deer or any white-tailed deer

Hunt Area	Type	Dates of Seasons		Quota	
		Opens	Closes		
26		Oct. 1	Oct. 14		General license; antlered deer off private land, any deer on private land
		Nov. 1	Nov. 30		
27	8	Oct. 15	Oct. 31	1,200	General license; any deer
		Nov. 1	Nov. 30		General license; any white-tailed deer
		Dec. 1	Dec. 15		General license; antlerless white-tailed deer
		Sep. 1	Sep. 30		Limited quota licenses; doe or fawn white-tailed deer valid on private land
		Oct. 15	Dec. 15		Unused Area 27 Type 8 licenses valid in the entire area
28		Oct. 15	Oct. 31		General license; antlered mule deer or any white-tailed deer
29	8	Oct. 1	Oct. 14	700	General license; antlered deer off private land, any deer on private land
		Nov. 1	Nov. 15		General license; any white-tailed deer
		Nov. 16	Dec. 15		General license; antlerless white-tailed deer
		Sep. 1	Sep. 30		Limited quota licenses; doe or fawn white-tailed deer valid on private land north of Crazy Woman Creek
		Oct. 1	Dec. 15		Unused Area 29 Type 8 licenses valid in the entire area
30	8	Oct. 15	Oct. 31	500	General license; any deer
		Nov. 1	Nov. 30		General license; any white-tailed deer
		Dec. 1	Dec. 15		General license; antlerless white-tailed deer
		Sep. 1	Sep. 30		Limited quota licenses; doe or fawn white-tailed deer valid on private land
		Oct. 15	Dec. 15		Unused Area 30 Type 8 licenses valid in the entire area
31		Oct. 1	Oct. 10		General license; antlered deer
32		Oct. 15	Oct. 31		General license; any deer
		Nov. 1	Nov. 15		General license; any white-tailed deer
32,163	8	Oct. 15	Nov. 15	50	Limited quota licenses; doe or fawn white-tailed deer

Hunt Area	Type	Dates of Seasons		Quota	Limitations
		Opens	Closes		
33		Oct. 15	Oct. 31		General license; any deer
		Nov. 1	Nov. 15		General license; any white-tailed deer
		Nov. 16	Dec. 15		General license; antlerless white-tailed deer
	6	Oct. 15	Dec. 15	50	Limited quota licenses; doe or fawn valid on private land
	8	Sep. 1	Sep. 30	500	Limited quota licenses; doe or fawn white-tailed deer valid on private land
		Oct. 15	Dec. 15		Unused Area 33 Type 8 licenses valid in the entire area
163		Oct. 15	Oct. 21		General license; antlered mule deer or any white-tailed deer
		Nov. 1	Nov. 15		General license; any white-tailed deer
169		Oct. 15	Oct. 21		General license; antlered mule deer or any white-tailed deer
		Nov. 1	Nov. 15		General license; any white-tailed deer
Archery		Sep. 1	Sep. 30		General license; any deer Limited quota licenses; Refer to Section 4 of this Chapter

Hunt Area	Type	Quota change from 2013
18	6	- 50
	8	+ 50
23,26	6	+ 200
24	3	- 150
24	6	- 200
30	8	- 200
<b>Herd Unit Total</b>	<b>3</b>	<b>- 150</b>
	<b>6</b>	<b>- 50</b>
	<b>8</b>	<b>- 150</b>
<b>Region C</b>		<b>- 100</b>
<b>Region Y</b>		<b>No Change</b>

## **Management Evaluation**

**Current Postseason Population Management Objective: 8,000**

**Management Strategy: Recreational**

**2013 Postseason Population Estimate: No working model**

**2014 Proposed Postseason Population Estimate: No working model**

The management objective for the Powder River White-tailed Deer Herd Unit is a post-season population objective of 8,000 white-tailed deer. The management strategy is recreational management. The objective and management strategy were last revised in 1996 and are scheduled for review this year.

We do not have a reliable population estimate at this time although we are confident it is higher than the management objective and generally above landowner's desires (Fig. 1). The spreadsheet simulation model developed for white-tailed deer populations with postseason classifications does not function with the available data from this herd unit.

Most white-tailed deer in this herd unit occur on private lands. There is substantial rural development in portions of this herd unit that act as refuges for white-tailed deer, allowing them to quickly repopulate surrounding areas that receive harvest. Our ability to control this deer population with hunting is very limited and localized. Mortalities due to deer-vehicle collisions and disease (i.e. viral hemorrhagic diseases) help keep this population from being even higher than it is.

## **Weather**

The spring and summer of 2013 was generally cool and wet, resulting in good conditions for forage production in the northwest portion of the region. Conditions generally became warmer and drier as you went south and east, which is consistent with normal weather patterns. This likely did not adversely affect white-tailed deer as they are closely associated with riparian habitats and irrigated croplands. The winter of 2013-14 was more severe than recent winters, with snow fall starting in late September and continuing through the winter. There were several bouts of extreme cold temperatures lasting up to a week in duration. Temperatures reached 30° F below zero, something not seen since the 1990s. Several thaw/freeze cycles during parts of the winter resulted in hard, crusted snow that was difficult for animals to paw through to access forage. White-tailed deer seem to be able to utilize stored hay crops better than mule deer. This fact likely increases their over-winter survival, especially during normal or above normal winter conditions.

## **Habitat**

We do not have an established habitat transect in this herd unit to monitor white-tailed deer use. Monitoring of other habitat programs, such as Conservation Reserve Program (CRP) riparian strips, indicate high white-tailed deer populations have done extensive damage to native deciduous woodlands and riparian areas. Irrigated croplands and refuge areas allow these populations to be maintained at levels higher than native habitats would normally support. Woody species such as native plum and serviceberry, as well as desirable forbs such as

sunflowers, are being eliminated in some woody draw communities along the Bighorn Mountains.

### **Field Data**

Field personnel conducted post-season classification surveys during mid-November through mid-December using ground survey techniques. Personnel were assigned designated routes to survey. We classified a total of 2,797 white-tailed deer, the highest classification count in 4 years despite a reduced population. The higher count could have been influenced by increased snow cover, making deer generally more visible. Also, colder temperatures may have resulted in longer feeding periods where deer were more readily visible.

Fawn production was 63 fawns:100 does, a decrease from the previous year, and below the long-term (n=32 years) average of 77 fawns:100 does. Reduced fawn production could slow the growth of this herd, which has declined in response to increased harvest in recent years and mortalities due to viral hemorrhagic disease. We documented epizootic hemorrhagic disease (EHD) the past 3 years within this herd unit, with the 2013 outbreak the most widespread.

Field personnel observed 32 bucks:100 does, a decrease from recent years. Due to the secretive nature of male white-tailed deer, we likely under observe bucks compared to does and fawns. We are likely maintaining a high buck:doe ratio due to the increased harvest of females and restricted access for harvesting bucks. There are sufficient males in this population to meet recreational management criteria (i.e. 20-29 bucks:100 does).

During the 2013 season, 75% hunters (n=1,454) who completed a harvest survey indicated they were satisfied (43%) or very satisfied (32%) with their hunting experience in this herd unit. At the hunt area level, satisfaction levels varied from 40% (Hunt Area 163) to 87% (Hunt Area 20) although the sample size for several hunt areas was very low.

Nonresident hunters were more satisfied (76%) than resident hunters (68%). Access to private lands through trespass fees or outfitted hunts caters more to nonresident than resident hunters. There is limited buck hunting opportunity for resident hunters in this herd unit, which may lower satisfaction levels for some hunters. Hunter satisfaction in both groups declined in 2013 compared to 2012, likely in response to lower deer numbers due to a disease outbreak.

### **Harvest**

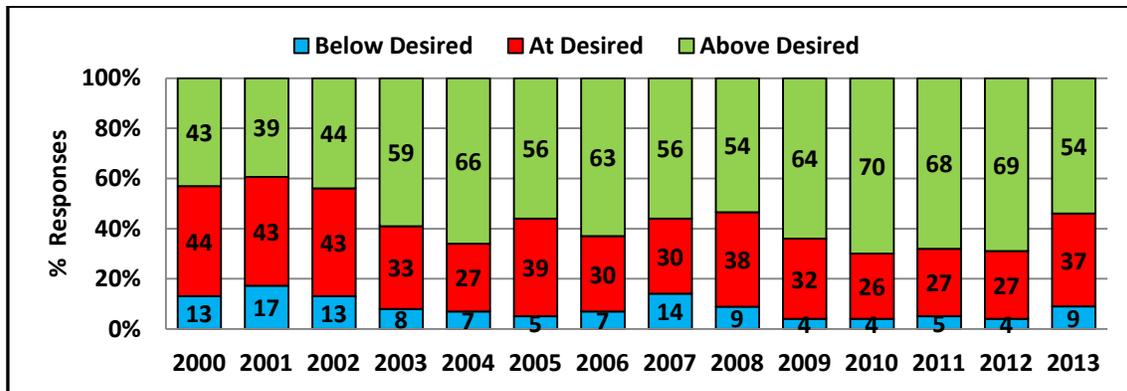
Hunters harvested an estimated 5,681 white-tailed deer in 2013, a decrease of 17% from 2012 and similar to the previous 5 year mean (2008-2012; n=5,648). The hunter success rate was 70%, the lowest success rate since 2008. Effort, as measured by days hunted per deer harvested, was 6.8 days/harvest, a slight decrease from 2012 but similar to the 10 year average (6.7 days/harvest). We experienced a viral hemorrhagic disease outbreak in 2013, starting prior to the hunting season. Mortality varied geographically, with reductions of up to an estimated 70% in some areas. As such, there were fewer deer available for harvest and some landowners restricted harvest in response to disease outbreak. Mature bucks seem to die at a proportionally higher rate than other sex and age classes due to hemorrhagic diseases. This results in fewer mature bucks available for harvest.

## Population

We know we have reduced this population through increased harvest over the past decade. We harvested an average of 5,139 white-tailed deer annually (averaged 2,136 bucks; 2,528 does; 474 fawns) during the 2004-2013 seasons, compared to an average of 2,332 white-tailed deer annually (averaged 1,275 bucks; 876 does; 180 fawns) during the 1994-2003 seasons.

Periodic outbreaks of viral hemorrhagic diseases also contribute to reduced numbers. We had an outbreak of epizootic hemorrhagic disease (EHD) in 2013, resulting in white-tailed deer mortality across the herd unit. The level of mortality was localized, and likely varied from ~10% - 70% of the local population.

Of landowners that completed an annual survey (n=66) within the Sheridan Biologist District (Hunt Areas 23, 24, and 26), 62% (n=41) indicated white-tailed deer numbers were higher than desired and 29% (n=19) believed numbers were at or near desired levels. Most respondents suggested similar (42%) or more liberal (50%) season strategies for 2014. Results were similar when responses from the Buffalo Biologist District (Hunt Area 27, 29-33, 163, and 169) were included (Fig. 5).



**Figure 1.** Landowner's perceptions of white-tailed deer populations on their property in Hunt Areas 23, 24, 26, 27, 29, 30, 31, 32, 33, 163, and 169, by percentage. Desired level is a subjective expression of individual landowner tolerance and not necessarily correlated to the established management objective.

## **Management Summary**

The regular hunting season for white-tailed deer has generally been concurrent with mule deer seasons during October, as well as during November. An archery pre-season runs the month of September. Seasons for antlerless white-tailed deer have been extended as early as September 1 and as late as December 15 to provide additional opportunities to harvest deer as well as address damage concerns of landowners.

Most white-tailed deer hunting is on private land within this herd unit. Access for antlered harvest is generally through payment of a trespass fee or an outfitter. Access for antlerless harvest is generally easier, with several landowners on a list allowing free access. Some landowners removed their name from this list in 2013 due to decreased deer numbers resulting from a disease outbreak.

There were changes to legal firearm calibers for the 2013 season. Hunters are able use buck shot (00 or bigger) in shotguns and .22 or larger centerfire cartridges (60 grain minimum bullet weight) starting with the 2013 season. We are not aware of any problems with this change in allowable methods of take.

Landowners were able to bait white-tailed deer - with a permit - starting in 2013. This change was designed to increase harvest of white-tailed deer in areas with safety concerns such as rural developments. In 2013, the Department issued 9 permits to 3 individuals, all in Hunt Area 24 near the Big Horn area. Two permits were for individual landowners with 1 bait site on each property. The other 7 permits were issued to a local outfitter with 11 bait sites on 3 different landowners. All permits were for antlerless white-tailed deer only. An estimated 100 white-tailed deer were harvested at these bait sites in 2013. We are not aware of any problems with this program during the 2013 season. We plan to make these permits available as appropriate for the 2014 season.

We estimate a harvest of about 5,000 white-tailed deer in 2014, a decrease from recent years. The outbreak of EHD in 2013 likely reduced the number of mature males as well as deer numbers in general. As such, we anticipate a decrease in hunter harvest in 2014. We are likely lowering this population in some areas through harvest, but with the numerous refuges that do not allow hunting within this herd unit, it will be difficult to bring this population down to the established management objective. The management objective will be reviewed this year. We will consider an alternative management objective such as landowner/hunter satisfaction using private land strategies for this herd unit.

**Deer Control within the Cities of Buffalo and Sheridan**

Higher deer numbers with and adjacent to the Cities of Buffalo and Sheridan have resulted in numerous conflicts, including damage to landscaping, deer-vehicle collisions, and deer-dog interactions. As a result of these various conflicts, the Cities of Buffalo and Sheridan continued deer reduction programs in 2013. Below is a summary of these efforts. Complete reports in compliance with their respective Chapter 56 permit are on file at the Cheyenne Office.

**Buffalo**

This was the fifth year the City of Buffalo removed deer from within the city limits. Six deer (all white-tail deer) were removed over one day, all of which tested negative for chronic wasting disease. The deer were processed and donated to the food pantry. A summary of the Buffalo program is provided in Table 1.

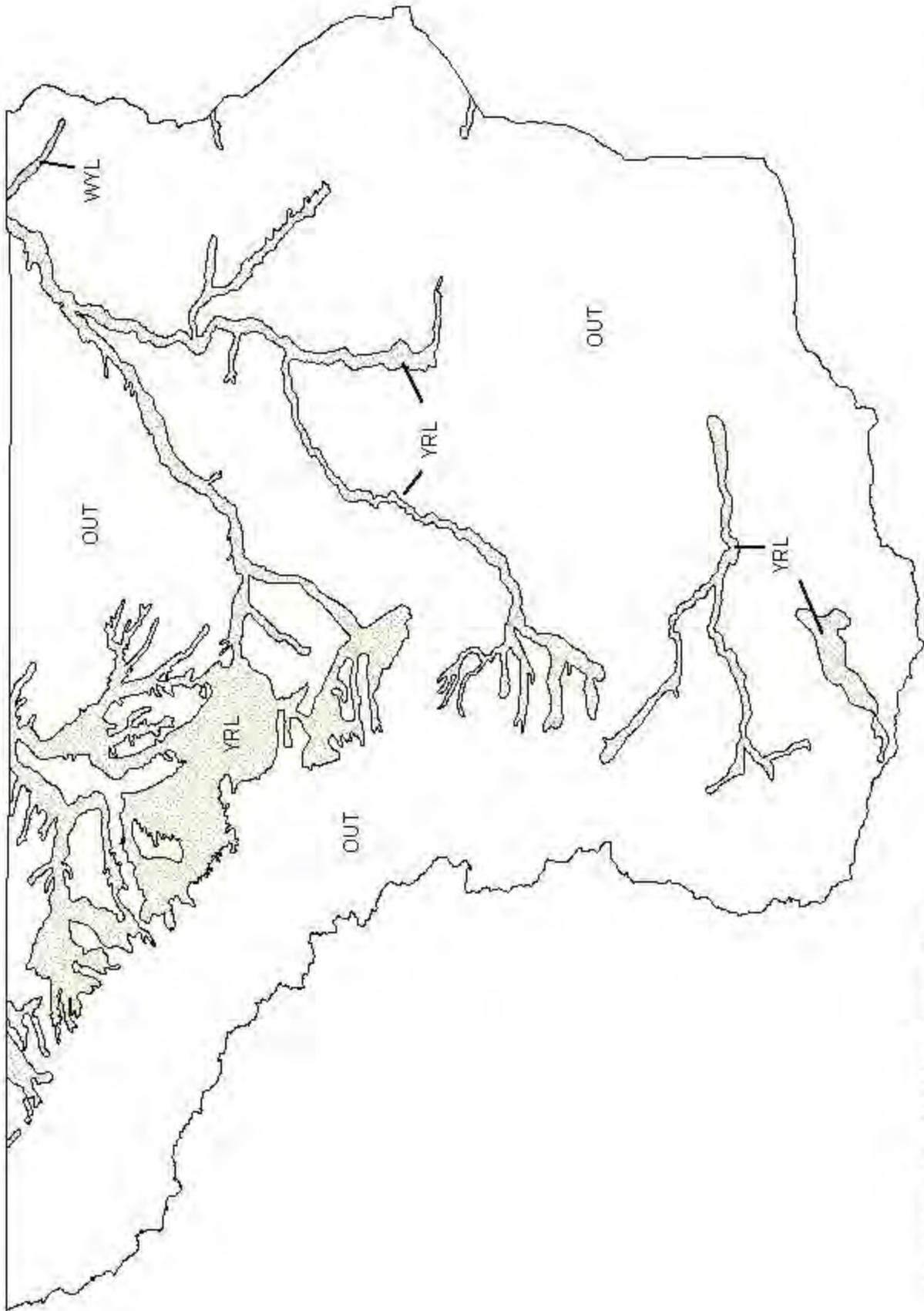
	<b>2009</b>	<b>2010</b>	<b>2011</b>	<b>2012</b>	<b>2013</b>
<b>No Deer Permitted</b>	50	75	100	75	75
<b>No. of Days</b>	2	5	4	5	1
<b>Mule Deer</b>	16	16	35	10	0
<b>White-tailed Deer</b>	34	59	26	51	6
<b>Total</b>	<b>50</b>	<b>75</b>	<b>61</b>	<b>61</b>	<b>6</b>
<b>CWD Positive</b>	0	3 WTD	0	0	0

**Sheridan**

This was the third year the City of Sheridan removed deer from within the city limits. All deer are tested for CWD and no deer have tested positive to date. All deer are either donated whole to individuals or processed and donated to area food banks. A summary of the Sheridan program is provided in Table 2.

**Table 2. City of Buffalo Deer Reduction Program Summary, 2011-2013.**

	<b>2011</b>	<b>2012</b>	<b>2013</b>
<b>No Deer Permitted</b>	100	100	100
<b>Mule Deer</b>	51	42	5
<b>White-tailed Deer</b>	49	39	28
<b>Total</b>	<b>100</b>	<b>81</b>	<b>33</b>
<b>CWD Positive</b>	0	0	0



White-tailed Deer (WT303) - Powder River  
 HA 17, 19, 23-33, 163, 169  
 Revised 4/67

