

# **Appendix A**

## **Summary of 2014 Landowner Survey**

### **Perceived Status of Big Game Populations and Suggested Hunting Season Strategies**

#### **Sheridan Biologist District**

**Pronghorn Antelope Areas 10, 15, 16, 109**

**White-tailed and Mule Deer Areas 23, 24, 26**

**Elk Areas 37, 38, 129**

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It is imperative that the Wyoming Game & Fish Department (WGFD) works closely with private landowners to manage wildlife populations, specifically deer and pronghorn antelope, in areas that are predominately private lands. In order to gauge landowner perceptions and opinions in an effective manner, the WGFD conducted a survey of landowners who historically allow hunting following the 2007 hunting season. We solicited perceived population status of big game herds and suggestions for 2015 hunting season strategies. A total of 178 landowners within the Sheridan Biologist District were queried on their perceptions of pronghorn antelope, mule deer, white-tailed deer and elk populations on their properties, as well as what hunting season adjustments they would suggest for the 2015 seasons.

Landowners were given the opportunity to choose between three options based on their perception of big game populations (i.e. below, at, or above "desired" levels) for their property. "Desired population" is a measure of landowner acceptance or tolerance of wildlife, and not necessarily correlated to the post-season population management objective established by the WGFD. Landowners were given three options for suggested season strategies (i.e. more conservative, same, or more liberal). Landowners were given the opportunity to provide any additional comments. Attached is a copy of the survey sent to landowners.

Surveys were mailed to 179 landowners with self-addressed, stamped envelopes. Five surveys were returned as undeliverable. Seventy-three useable surveys were returned for a response rate of 42%. Results are provided below. Not all landowners responded to each question or for all species. Some landowners are credited with a response in more than one hunt area. Therefore, total responses may exceed the number of actual survey returns.

## Pronghorn Antelope

**Table 1.** Summary of survey results for pronghorn antelope grouped by hunt area and herd unit.

Hunt Area	Population			Season		
	Below Desired Level	At Desired Level	Above Desired Level	More Conserv Season	Same Season	More Liberal Season
10	0	6	1	1	5	1
15	0	16	10	0	13	11
16	0	6	4	0	5	4
<b>SubTot (n=43)</b>	0 (0%)	28 (67%)	15 (33%)	1 (2%)	23 (58%)	16 (40%)
<b>109 (n=25)</b>	2 (8%)	13 (52%)	10 (40%)	0 (0%)	14 (70%)	6 (30%)
<b>2014 (n=68)</b>	2 (3%)	41 (60%)	25 (37%)	1 (1%)	37 (62%)	22 (37%)
<b>2013 (n=71)</b>	5 (7%)	35 (49%)	31 (44%)	4 (6%)	40 (56%)	27 (38%)
<b>2012 (n=74)</b>	7 (9%)	46 (62%)	21 (28%)	1 (1%)	48 (69%)	20 (30%)
<b>2011 (n=41)</b>	5 (12%)	19 (46%)	17 (41%)	2 (5%)	25 (61%)	14 (34%)
<b>2010 (n=53)</b>	5 (9%)	26 (49%)	22 (42%)	1 (2%)	36 (68%)	16 (30%)
<b>2009 (n=58)</b>	10 (17%)	29 (50%)	19 (33%)	4 (7%)	40 (69%)	14 (24%)
<b>2008 (n=29)</b>	5 (17%)	11 (38%)	13 (45%)	2 (7%)	16 (55%)	11 (38%)
<b>2007 (n=53)</b>	5 (9%)	27 (51%)	21 (40%)	0 (0%)	35 (66%)	18 (34%)
<b>2006 (n=36)</b>	2 (6%)	18 (50%)	16 (44%)	1 (3%)	21 (60%)	13 (37%)
<b>2005 (n=39)</b>	6 (15%)	20 (51%)	13 (33%)	2 (5%)	22 (58%)	14 (37%)
<b>2004 (n=37)</b>	3 (8%)	26 (70%)	8 (22%)	1 (3%)	37 (73%)	9 (24%)
<b>2003 (n=54)</b>	9 (17%)	29 (54%)	16 (30%)	2 (4%)	38 (75%)	11 (21%)
<b>2002 (n=55)</b>	15 (27%)	31 (56%)	9 (16%)	7 (13%)	36 (69%)	9 (17%)
<b>2001 (n=57)</b>	19 (33%)	32 (58%)	5 (9%)	8 (15%)	40 (77%)	4 (8%)
<b>2000 (n=56)</b>	25 (45%)	28 (50%)	3 (5%)	13 (23%)	38 (68%)	5 (9%)

**Leiter Herd Unit** (hunt areas 10, 15, and 16): The Leiter Herd Unit was created in 2014 when the Ucross Herd Unit (hunt areas 10, 16) was combined with the Clearmont Herd Unit (hunt area 15). We received 43 responses from landowners in this herd unit. All responses (100%) indicated the pronghorn population is at or above desired levels. The majority (98%) suggests maintaining or liberalizing the current season strategy. The current population simulation estimates this population is significantly above the post-season population management objective as established by the WGFD. Most pronghorn within this herd unit occur on private lands, with limited opportunities for public land hunting. Some hunting opportunity is provided on a Walk-In Area and small scattered parcels of public lands.

**Beckton Herd Unit** (hunt area 109): We received 25 responses from landowners in this herd unit. All but two landowner indicated the population was at or above desired levels. Population estimates, based on winter counts, indicated this herd unit is substantially above the post-season population management objective as established by the WGFD. This population will likely never be reduced to the population objective due to limited access and urban development which hinders safe hunting opportunities. All landowners favored maintaining (70%) or liberalizing (30%) season strategies.

## Mule Deer

**Table 2.** Summary of survey results for mule deer grouped by hunt area and herd unit.

Hunt Area	Population			Season		
	Below Desired Level	At Desired Level	Above Desired Level	More Conserv Season	Same Season	More Liberal Season
23	9	17	2	5	18	4
26	6	6	1	6	5	2
<b>SubTot (n=41)</b>	15 (37%)	23 (56%)	3 (7%)	11 (27%)	23 (58%)	6 (15%)
<b>24 (n=33)</b>	15 (45%)	13 (39%)	5 (15%)	6 (19%)	23 (72%)	3 (9%)
<b>2014 (n=74)</b>	30 (40%)	36 (49%)	8 (11%)	17 (24%)	46 (64%)	9 (12%)
<b>2013 (n=74)</b>	35 (47%)	32 (43%)	7 (10%)	23 (31%)	38 (51%)	13 (18%)
<b>2012 (n=75)</b>	35 (47%)	29 (39%)	11 (15%)	23 (31%)	42 (57%)	9 (12%)
<b>2011 (n=62)</b>	28 (45%)	26 (42%)	8 (13%)	11 (17%)	43 (69%)	8 (13%)
<b>2010 (n=59)</b>	27(46%)	20 (34%)	12 (20%)	13(22%)	36(61%)	10(17%)
<b>2009 (n=59)</b>	27 (46%)	20 (34%)	12 (20%)	13 (22%)	36 (61%)	10 (17%)
<b>2008 (n=28)</b>	4 (14%)	19 (68%)	5 (18%)	1 (4%)	24 (86%)	3 (11%)
<b>2007 (n=59)</b>	20 (34%)	33 (56%)	6 (10%)	10 (17%)	39 (66%)	10 (17%)
<b>2006 (n=41)</b>	15 (37%)	15 (37%)	11 (27%)	5 (12%)	27 (65%)	9 (22%)
<b>2005 (n=46)</b>	7 (16%)	23 (51%)	15 (33%)	4 (9%)	27 (59%)	15 (33%)
<b>2004 (n=48)</b>	12 (25%)	21 (44%)	15 (31%)	7 (8%)	27 (56%)	14 (29%)
<b>2003 (n=65)</b>	15 (24%)	34 (55%)	13 (21%)	8 (12%)	42 (65%)	15 (23%)
<b>2002 (n=65)</b>	31(48%)	23 (35%)	11 (17%)	16 (25%)	37 (59%)	10 (16%)
<b>2001 (n=79)</b>	38 (48%)	34 (43%)	7 (9%)	19 (25%)	47 (62%)	10 (13%)
<b>2000 (n=67)</b>	22 (32%)	38 (57%)	7 (11%)	15 (24%)	45 (71%)	3 (5%)

**North Bighorn Herd Unit** (hunt area 24): We received 33 responses from landowners in this herd area. Thirteen respondents (39%) thought the population was at desired levels while five (15%) respondents thought the population was above desired levels and 15 (45%) thought the population was below desired levels. This is a change from recent years where most landowners felt the population was at or above desired levels. This likely reflects localized decreased in the mule deer numbers due to environmental conditions, increased doe/fawn harvest, and EHD. Current population simulations estimate the population is below the post-season population management objective as established by the WGFD. The most of landowners (72%) suggested maintaining current season strategies (i.e. 30 September archery season, 15 day general deer season in October and doe/fawn permits) while the other respondents were split between more conservative (19%) and more liberal (9%) season structure.

**Powder River Herd Unit** (hunt areas 23, 26): We received 41 responses from landowners within these hunt areas. Most respondents (63%) thought the population was at or above desired levels, while 37% thought the population was below desired levels. This is similar to the past year or two.. Current population simulations estimate the population is below the post-season population management objective as established by the WGFD. Most landowners (58%) favored maintaining the current season structure (i.e. 30 day September archery season, 15 day general deer season in October and an extended doe/fawn season).

## White-tailed Deer

**Table 3.** Summary of survey results for white-tailed deer grouped by hunt area and herd unit.

Hunt Area	Population			Season		
	Below Desired Level	At Desired Level	Above Desired Level	More Conserv Season	Same Season	More Liberal Season
23	1	9	10	1	13	6
24	2	8	22	3	15	13
26	0	5	4	0	4	3
<b>2014 (n=61)</b>	3 (5%)	22 (36%)	36 (59%)	4 (7%)	32 (55%)	22 (38%)
<b>2013 (n=47)</b>	6 (9%)	19 (29%)	41 (62%)	5 (8%)	28 (42%)	33 (50%)
<b>2012 (n=72)</b>	3 (4%)	18 (25%)	51 (71%)	0	30 (41%)	42 (59%)
<b>2011(n=63)</b>	2(3%)	19(30%)	42(67%)	0	26(41%)	37(59%)
<b>2010 (n=55)</b>	2(4%)	16(29%)	37(67%)	0	23(42%)	32(58%)
<b>2009 (n=53)</b>	4 (7%)	19 (36%)	30 (57%)	1(2%)	29 (55%)	23 (43%)
<b>2008 (n=26)</b>	5 (19%)	8 (31%)	13 (50%)	2 (8%)	12 (46%)	12 (46%)
<b>2007 (n=48)</b>	8 (17%)	14 (29%)	26 (54%)	3 (6%)	22 (46%)	23 (48%)
<b>2006 (n=36)</b>	4 (11%)	11 (31%)	21 (58%)	1 (3%)	19 (53%)	16 (44%)
<b>2005 (n=40)</b>	3 (8%)	11 (28%)	26 (65%)	2 (5%)	20 (51%)	17 (44%)
<b>2004 (n=37)</b>	2 (5%)	11 (30%)	24 (65%)	0	14 (38%)	23 (62%)
<b>2003 (n=57)</b>	6 (10%)	14 (25%)	37 (65%)	4 (7%)	25 (45%)	27 (48%)
<b>2002 (n=58)</b>	11 (19%)	19 (33%)	28 (48%)	7 (13%)	28 (50%)	21 (37%)
<b>2001 (n=68)</b>	13 (19%)	30 (44%)	25 (37%)	6 (9%)	45 (66%)	17 (25%)
<b>2000 (n=58)</b>	11 (19%)	21 (36%)	26 (45%)	6 (10%)	31 (53%)	21 (37%)

**Powder River Herd Unit** (hunt areas 23, 24, 26): We received 61 responses from landowners in these hunts areas. The majority (95%) thought the white-tailed deer population was at or above desired levels, while three landowners (5%) felt the population was below desired levels. Current population simulations estimate this population is significantly above the post-season population management objective as established by the WGF. Most (93%) landowners suggested maintaining or liberalizing current season strategies. During the 2014 season, hunters could harvest any white-tailed deer for up to 91 days, including the 30-day September archery season, with additional time allowed for doe/fawn harvest, depending on hunt area. .

Numerous landowners have expressed concern and frustration with the number of white-tailed deer, especially in the Bighorn area. It is common to see several hundred deer in one field. Landowners in these areas have committed to increasing access for hunters to harvest antlerless deer. The number of deer – vehicle collisions has also increased, most notably along the Big Goose Road and Highway 87/335 from Sheridan to Bighorn.

## Elk

Table 4. Summary of survey results for elk.

Hunt Area	Population			Season		
	Below Desired Level	At Desired Level	Above Desired Level	More Conserv Season	Same Season	More Liberal Season
37	2	6	4	1	7	3
38	0	7	0	1	6	0
<b>Sub Tot (n=19)</b>	2 (11%)	13 (68%)	4 (21%)	2 (11%)	13 (72%)	3 (17%)
<b>129 (n=12)</b>	6 (50%)	4 (33%)	2 (17%)	2 (15%)	10 (77%)	1 (8%)
<b>2014 (n=31)</b>	8 (26%)	17 (55%)	6 (19%)	4 (13%)	23 (74%)	4 (13%)
<b>2013 (n=35)</b>	12 (34%)	15 (43%)	8 (23%)	4 (12%)	18 (55%)	11 (33%)
<b>2012 (n=27)</b>	10 (37%)	10 (37%)	7 (26%)	2 (8%)	13 (50%)	11 (42%)
<b>2011 (n=20)</b>	7 (35%)	8 (40%)	5 (25%)	4 (20%)	11 (55%)	5 (25%)
<b>2010 (n=19)</b>	10(53%)	5(26%)	4(21%)	7(37%)	7(37%)	5(26%)
<b>2009 (n=19)</b>	10 (53%)	5 (26%)	4 (21%)	7 (37%)	7 (37%)	5 (26%)
<b>2008 (n=12)</b>	6 (50%)	3 (25%)	3 (25%)	1 (8%)	10 (83%)	1 (18%)
<b>2007 (n=16)</b>	5 (31%)	6 (38%)	5 (31%)	2 (13%)	8 (50%)	5 (31%)
<b>2006 (n=20)</b>	8 (40%)	7 (35%)	5 (25%)	5 (25%)	8 (40%)	7 (35%)
<b>2005 (n=18)</b>	4 (22%)	10 (56%)	4 (22%)	4 (22%)	9 (50%)	5 (28%)
<b>2004 (n=12)</b>	3 (25%)	9 (75%)	0	0	10 (83%)	2 (17%)
<b>2003 (n=17)</b>	5 (31%)	9 (56%)	2 (13%)	3 (21%)	9 (64%)	2 (14%)
<b>2002 (n=20)</b>	4 (20%)	12 (60%)	4 (20%)	1 (5%)	16 (80%)	3 (15%)
<b>2001 (n=23)</b>	6 (26%)	12 (52%)	5 (22%)	4 (17%)	14 (61%)	5 (22%)
<b>2000 (n=10)</b>	3 (30%)	4 (40%)	3 (30%)	1 (10%)	7 (70%)	2 (20%)

**North Bighorn Herd Unit** (hunt areas 37, 38): We received 19 responses from landowners in these hunt areas, most (63%) from landowners in hunt area 37. Well over half (83%) of the landowners thought the elk population was at or below desired levels, while the rest (17%) thought elk numbers were above desired levels. Most landowners (77%) supported similar or more liberal season strategies. Landowners in Area 38 were specifically asked about their desire for an extended antlerless season, with five options (Nov. 15; Nov. 30; Dec. 20; Dec. 31; Other). Seasons were extended in 2013 and 2014 to address damage concerns to stored hay crops. A specific license (Type 6) was created to address these problems. This should help reduce damage concerns without creating too many hunter phone calls.

**Hunt Area 129:** We received responses from 12 landowners in this hunt area. Area 129 encompasses all lands in Campbell, Johnson, and Sheridan counties outside an established elk hunt area. This area was established in 2001 to address expanding elk numbers outside established hunt areas and herd units. Responses were mixed, with some landowners desiring more elk while others want longer seasons so they can kill more elk and reduce their numbers. The WGFD does not wish to actively manage elk in these areas. Most (77%) landowners favored maintaining the current season structure.

**Appendix B**

**Summary of  
2014 Landowner Survey**

**Perceived Status of Deer and Pronghorn Populations  
And Suggested Hunting Season Strategies**

**Gillette Biologist District**

May 2015

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## Overview

Questionnaire surveys of landowners within the Gillette Biologist District were conducted following each hunting season from 1996 through 2014. Questionnaires were included with a mailing of the landowner coupon form. Approximately 400 surveys are mailed each year. Landowners completed the surveys and returned them with their coupon forms to their local game warden by March 1<sup>st</sup> of the following year.

The questions asked for each of the surveys were essentially the same with only slight variation between the first survey and the subsequent surveys. Landowners were asked if the pronghorn and deer herds on their ranches were below desired levels, at desired levels, or above desired levels. They were also asked if they thought that the next year's hunting season should be more conservative, about the same, or more liberal than the previous hunting season.

A brief summary of the 2014 responses relative to the 2015 hunting season is as follows.

### Pronghorn Questionnaire Responses

#### Area 1

- Respondents were equally split between below, at or above objective (33% each).
- Respondents were divided on the season for 2015.

#### Area 3

- 100% of respondents believe that numbers are at or below objective.
- 85% of landowners desire a more conservative or the same season for 2015.

#### Area 17

- 80% of landowners surveyed think that pronghorn are at desired levels.
- 80% of landowners favor the same season for 2015.

#### Area 18

- 50% of landowners think that pronghorn numbers on their property are at desired levels.
- 50% of landowners favor the same season for 2015.

#### Area 19

- 83% of landowners believe that pronghorn numbers on their property are below desired levels.
- 100% favor the same or more conservative season for 2015.

#### Area 23

- 71% of landowners surveyed believe that pronghorn numbers on their property are at desired levels.
- 90% of landowners favor the same or a more conservative season for 2015.

#### Area 24

- 64% of landowners surveyed believe that pronghorn numbers on their property are at desired levels.
- 83% wanted the same season for 2015.

#### Area 27

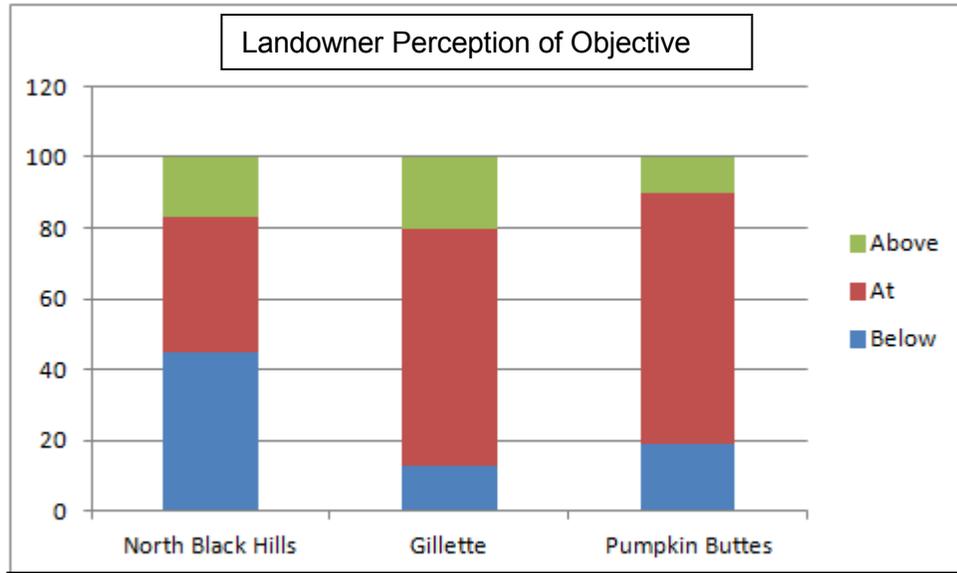
- The 2 respondents were split on wanted the same or a more liberal season for 2015.

## **Overall Pronghorn Survey Results**

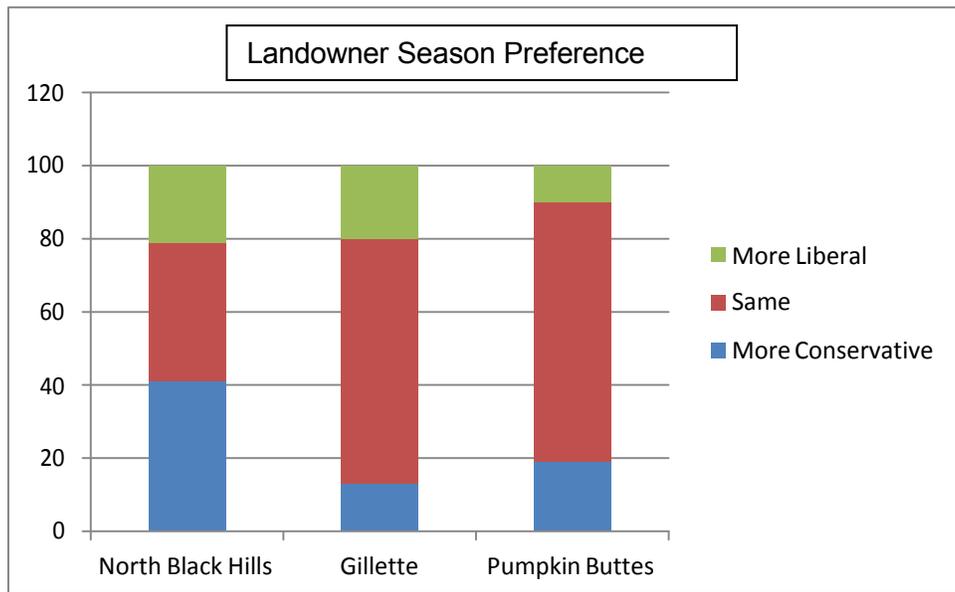
- Sample size of 84 landowners answered the portion on pronghorn (some incomplete, only answering either the portion regarding population or season and not both, some not indicating hunt area).
- 58% of total respondents think that pronghorn numbers on their property are at desired levels with 26% indicating that pronghorn numbers on their property are below desired levels and 16% indicating that pronghorn numbers on their property are above desired levels.
- Most (61%) favor the same season for 2015 with 16% favoring a more liberal and 23% favoring a more conservative season for 2015. Responses were slightly improved as compared to the 2014 season responses in that more people felt the numbers were closer to where they would like to see them as opposed to being below.

## **Relationship to 2014 Post-season Population Estimate, Its Objective and Landowner Desires for the 2015 Hunting Season**

- North Black Hills Herd Unit is estimated to be slightly below objective. Overall, landowners think pronghorn are at or below the desired level and want either the same or a more conservative season for 2015.
- Gillette Herd Unit is estimated to be slightly below objective. The majority of landowners believe the herd is at desired levels and most want the same season for 2015.
- Pumpkin Buttes Herd Unit is estimated to be above objective. 80% of all respondents want the same or a more liberal season for 2015.
- Winter conditions were moderate in the winter of 2014-2015 with periods of cold followed by periods of melting at times. The proposed 2015 seasons address lower pronghorn numbers in those areas that have been impacted by past severe winter conditions, while continuing with persistent harvest in areas where winter conditions were less severe. Thus, proposed seasons should still be reasonable in the Gillette District.



**Figure 1.** 2014 landowner survey results by herd unit regarding pronghorn herd size compared to herd objective



**Figure 2.** 2014 landowner survey results by herd unit regarding desired 2015 pronghorn hunting seasons.

**Table 1.** 2014 landowner survey results, and results by year 1997-2014

Hunt Area	Population			Season		
	Below Desired Level	At Desired Level	Above Desired Level	More Conserv Season	Same Season	More Liberal Season
1	4	4	4	3	5	4
3	3	4	0	3	3	1
17	2	10	3	2	10	3
18	1	2	1	1	2	1
19	5	1	0	5	1	0
23	4	15	2	4	14	2
24	3	9	2	1	10	1
27	0	1	1	0	1	1
<b>YEAR</b>						
<b>*2014</b>	22(26%)	49(58%)	13(16%)	19(23%)	49(61%)	13(16%)
<b>2013</b>	31(47%)	29(44%)	6(9%)	32(48%)	29(44%)	5(8%)
<b>2012</b>	72(44%)	82(50%)	11(6%)	47(29%)	103(64%)	11(7%)
<b>2011</b>	30 (37%)	47 (57%)	5 (6%)	25 (32%)	49 (62%)	5 (6%)
<b>2010</b>	30 (33%)	45 (49%)	16 (18%)	21 (23%)	52 (57%)	18 (20%)
<b>2009</b>	19 (18%)	60 (56%)	29 (27%)	15 (14%)	72 (66%)	22 (20%)
<b>2008</b>	7 (6%)	55 (50%)	48 (44%)	9 (8%)	60 (56%)	39 (36%)
<b>2007</b>	7 (6%)	58 (48%)	55 (46%)	4 (3%)	69 (57%)	46 (39%)
<b>2006</b>	14 (11%)	58 (44%)	61 (46%)	6 (5%)	74 (56%)	53 (40%)
<b>2005</b>	6 (10%)	22 (35%)	34 (55%)	4 (7%)	31 (53%)	23 (40%)
<b>2004</b>	28 (16%)	86 (50%)	59 (34%)	12 (7%)	98 (57%)	63 (36%)
<b>2003</b>	30 (17%)	105 (60%)	43 (24%)	11 (6%)	109 (62%)	56 (32%)
<b>2002</b>	24 (18%)	78 (58%)	33 (24%)	17 (13%)	80 (59%)	38 (28%)
<b>2001</b>	27 (21%)	74 (59%)	25 (20%)	23 (18%)	73 (58%)	30 (24%)
<b>2000</b>	50 (40%)	58 (46%)	17 (14%)	33 (27%)	65 (52%)	26 (21%)
<b>1999</b>	48 (46%)	37 (35%)	20 (19%)	30 (29%)	47 (46%)	25 (25%)
<b>1998</b>	49 (37%)	64 (48%)	21 (16%)	31 (23%)	73 (54%)	31 (23%)
<b>1997</b>	68 (49%)	60 (43%)	11 (8%)	56 (41%)	63 (46 %)	18 (13%)

\*Note-Totals of Hunt Area may not equal total for 2014. This is due to some landowners not reporting what area they are in or answering only portions of the survey. Their opinions were factored into the total, but not by Hunt Area.

## Deer Questionnaire Responses

### Area 1

- 73% believe deer numbers on their property are at desired levels.
- 60% favor the same or a more conservative season for 2015, with the remainder split evenly.

### Area 3

- 89% of landowners that responded believe deer numbers on their property are at or below desired levels.
- All favor the same or a more conservative season for 2015.

### Area 10

- There were only 2 respondents. They were split between below or at desired levels, and more conservative or the same season.

### Area 17

- 77% believe deer numbers on their property are below desired levels.
- 69% favor a more conservative season for 2015.

### Area 18

- 83% believe deer numbers on their property are at or below desired levels.
- 92% favor the same or a more conservative season for 2015.

### Area 19

- 100% believe deer numbers on their property are at or below desired levels.
- 100% favor the same season or more conservative season for 2015.

### Area 20

- All surveyed believe deer numbers on their property are at or below desired levels.
- 100% favor the same season for 2015.

### Area 21

- 91% believe deer numbers on their property are at or below desired levels.
- Responses are split for the 2015 season.

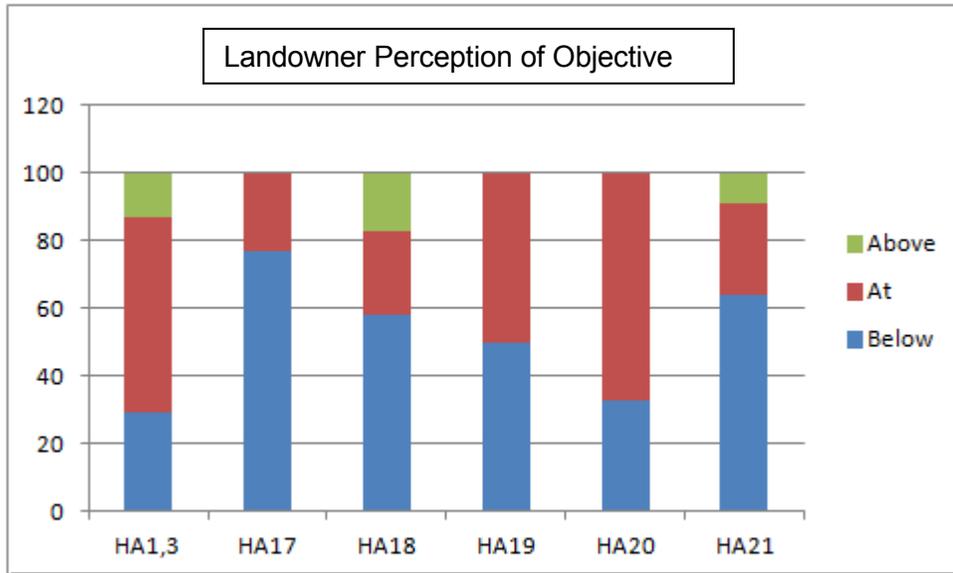
## Overall Deer Survey Results

- 79 landowners answered the deer portion of the survey (some incomplete, only answering either the portion regarding population or season and not both, some not indicating hunt area).
- Most (49%) think that deer numbers are below desired levels with 42% of the respondents indicating that the herds are at desired levels and 9% indicating that herds are above desired levels.
- Most (49%) favor the same season for 2015, with 43% desiring a more conservative season, and the remaining 8% indicating the need for a more liberal season.

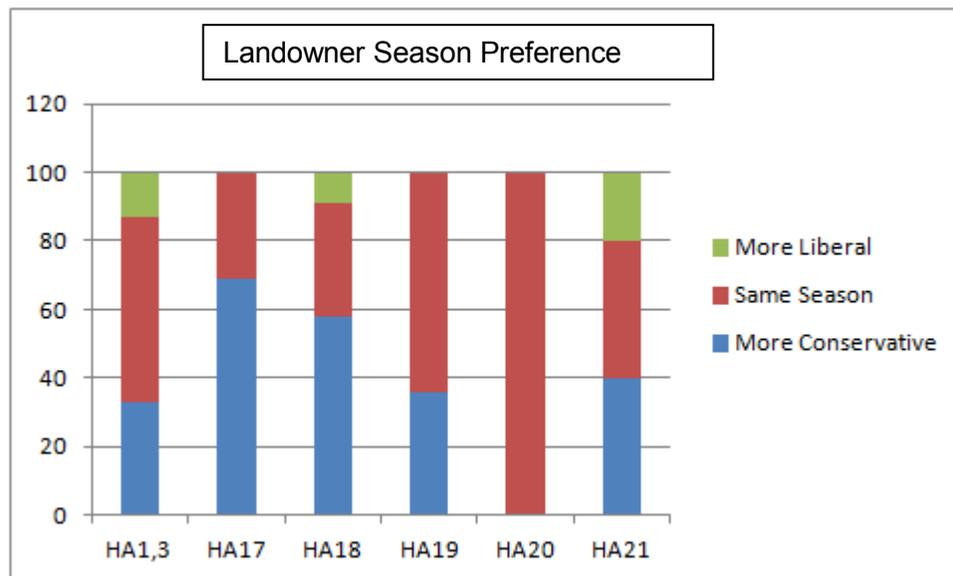
## Relationship to 2014 Post-season Population Estimate, Its Objective and Landowner Desires for the 2015 Hunting Season

- Powder River Herd Unit is far below objective. Landowners generally desire a higher population of deer in the herd unit and prefer the same or more conservative season in 2015.
- Pumpkin Buttes Herd Unit is slightly below objective. Landowners generally want the same or more conservative season for 2015.

- Black Hills Herd Unit is over objective. The Sheridan Region portion of the herd unit shows landowners indicating that the herd is at or below desired levels for mule deer. Most want to see the same or more conservative season in 2015.
- Cheyenne River Deer herd unit is below objective. The Sheridan Region portion of the herd unit shows landowners indicating that the herd is at or below desired levels and favor the same or more conservative seasons for 2015.



**Figure 3.** 2014 landowner survey results by herd unit regarding deer herd size compared to herd objective



**Figure 4.** 2014 landowner survey results by herd unit regarding desired 2015 deer hunting seasons.

**Table 2.** Summary of responses by landowners regarding deer population levels and opinions for deer hunting seasons 1997– 2014 and summary of 2014.

Hunt Area	Population			Season		
	Below Desired Level	At Desired Level	Above Desired Level	More Conserv Season	Same Season	More Liberal Season
1	2	11	2	3	9	3
3	5	3	1	5	4	0
10	1	1	0	1	1	0
17	10	3	0	9	4	0
18	7	3	2	7	4	1
19	6	6	0	4	7	0
20	1	2	0	0	3	0
21	7	3	1	4	4	2
<b>YEAR</b>						
<b>*2014</b>	39(49%)	33(42%)	7(9%)	33(43%)	37(49%)	6(8%)
<b>*2013</b>	43(65%)	23(35%)	0	37(57%)	23(35%)	5(8%)
<b>*2012</b>	106(66%)	46(29%)	8(5%)	80(52%)	65(42%)	8(5%)
<b>2011</b>	52 (71%)	20 (28%)	1 (1%)	41 (59%)	27 (39%)	1 (1%)
<b>2010</b>	56 (57%)	38 (39%)	4 (4%)	40 (51%)	49 (41%)	8 (8%)
<b>2009</b>	64 (57%)	43 (38%)	5 (4%)	50 (45%)	58 (52%)	6 (5%)
<b>2008</b>	28 (26%)	72 (67%)	7 (7%)	17 (16%)	78 (72%)	13 (12%)
<b>2007</b>	22 (18%)	83 (66%)	20 (16%)	13 (10%)	88 (70%)	24 (19%)
<b>2006</b>	24 (18%)	75 (57%)	32 (24%)	14 (11%)	77 (58%)	41 (31%)
<b>2005</b>	18 (19%)	54 (56%)	25 (26%)	14 (14%)	60 (61%)	25 (25%)
<b>2004</b>	52 (29%)	98 (55%)	29 (16%)	30 (17%)	117 (67%)	29 (16%)
<b>2003</b>	57 (30%)	110 (58%)	23 (12%)	34 (19%)	108 (61%)	35 (20%)
<b>2002</b>	43 (32%)	76 (56%)	17 (13%)	30 (22%)	84 (62%)	22 (16%)
<b>2001</b>	44 (35%)	65 (52%)	17 (13%)	34 (27%)	74 (59%)	18 (14%)
<b>2000</b>	38 (29%)	73 (57%)	18 (14%)	34 (26%)	66 (51%)	30 (23%)
<b>1999</b>	30 (29%)	56 (55%)	16 (16 %)	26 (25%)	56 (55%)	20 (20%)
<b>1998</b>	60 (47%)	63 (49%)	6 (5%)	51 (39%)	65 (50%)	15 (11%)
<b>1997</b>	64 (47%)	56 (41%)	16 (12%)	57 (42%)	61 (45%)	18 (13%)

\*Note-Totals of Hunt Area may not equal total for 2014. This is due to some landowners not reporting what area they are in or answering only portions of the survey. Their opinions were factored into the total, but not by Hunt Area.

## **APPENDIX C**

### **2014 Buffalo / Kaycee Landowner Survey**

**May 13, 2015**

Prepared by Dan Thiele  
Buffalo Wildlife Biologist  
Wyoming Game & Fish Department

The 16<sup>h</sup> Buffalo/Kaycee landowner postseason survey was conducted following the 2014 hunting season. About 165 landowners were queried on their perceptions of antelope, mule deer, white-tailed deer and elk populations as well as what hunting season adjustments they recommend for the 2015 hunting seasons. The survey was mailed along with a landowner coupon form and information on submitting landowner coupons for reimbursement. Landowners were asked the following questions for each species that occupies their ranches (antelope, mule deer, white-tailed deer, and elk):

Overall for your area, is the (*species*) population:

- Below or less than desired levels
- At or about right at desired levels
- Above or higher than desired levels

For next year, would you like to see the (*species*) hunting seasons:

- More conservative with fewer licenses
- About the same as this year
- More liberal with more licenses

Beginning in 2005, landowners were also asked if they were willing to provide free access for doe/fawn antelope and/or deer hunting. General comments were also requested.

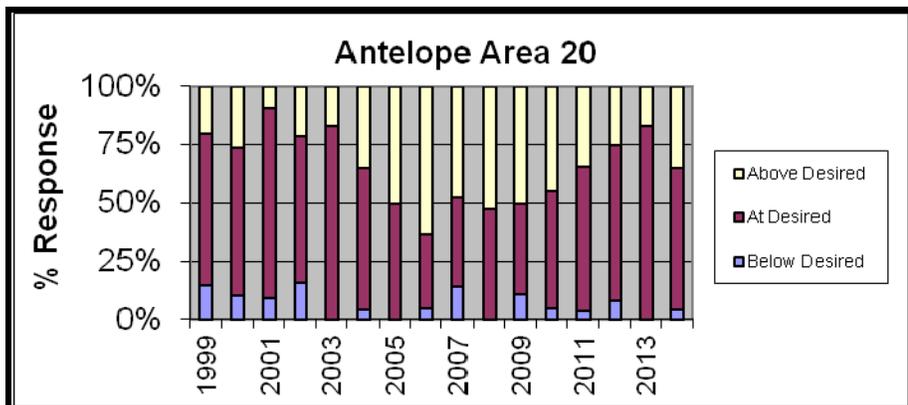
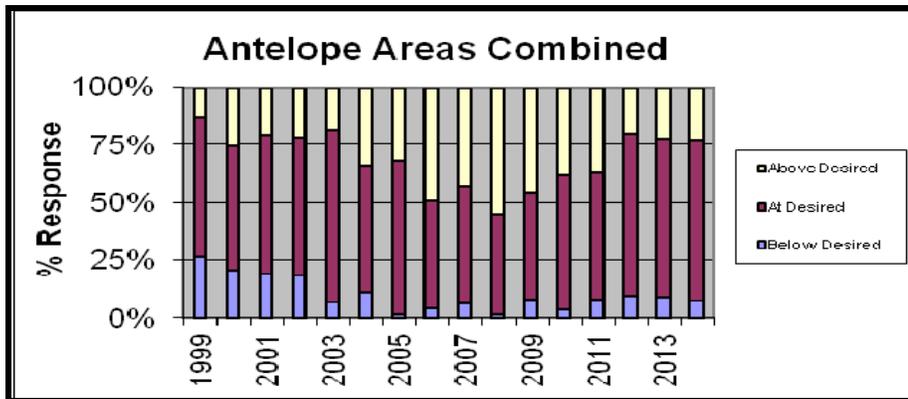
Seventy-five responses were received for a response rate of 45%. This compares to 34% in 2013, 40% in 2012, and 47% in 2011. Results of the 2014 survey and 16-year trends are provided below. Not all landowners responded to each question or for each species. Some landowners are credited with a response in more than one hunt area because of landownership patterns. Therefore, total responses may exceed the number of actual survey returns. The total (*n*) references the number of landowners who responded for the respective species followed by the totals for all hunt areas. Samples are generally low at the hunt area level limiting the confidence in the results.

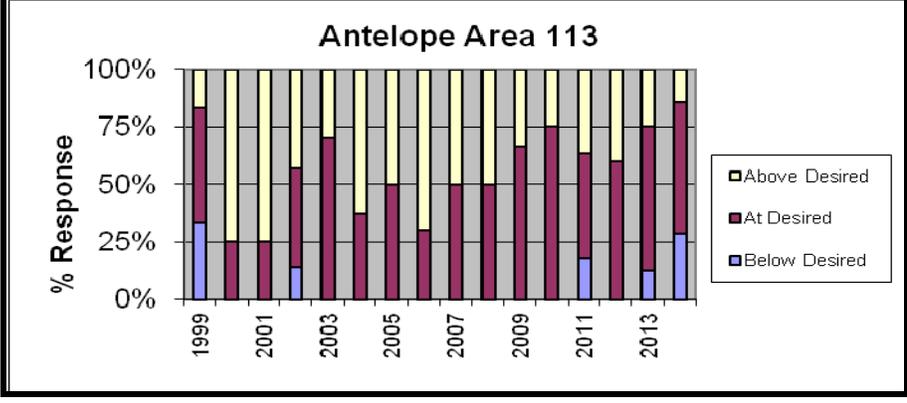
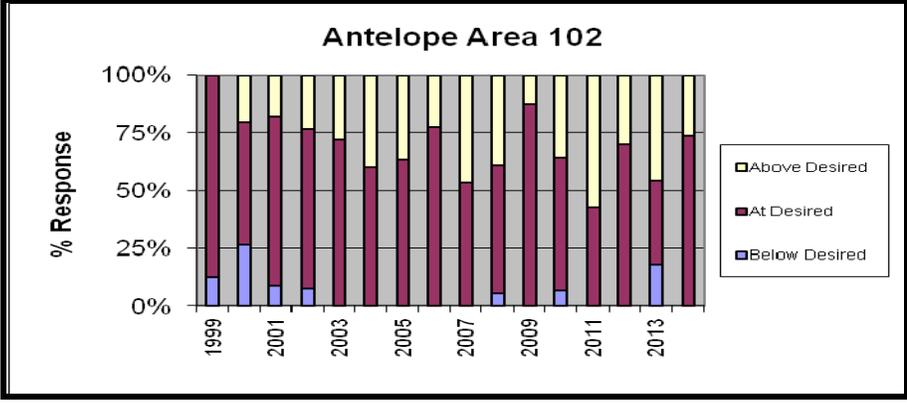
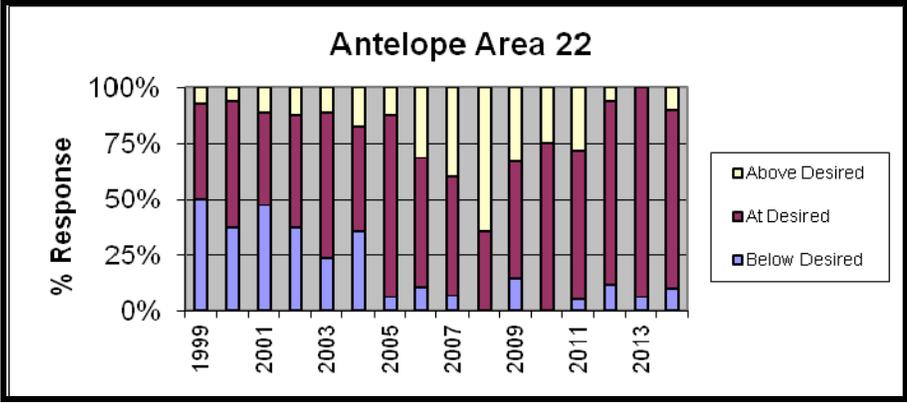
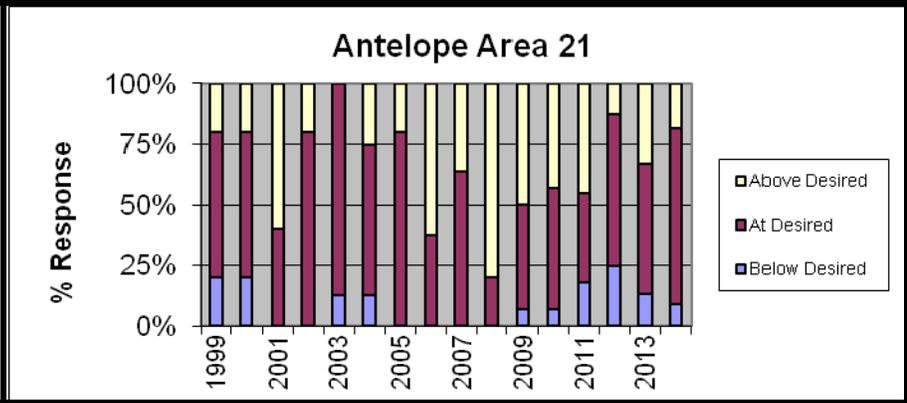
Some interpretation of survey responses was needed as some landowners responded for species they do not have, or, have limited numbers of. For example, a landowner who has low potential for antelope on a ranch and responded they are below desired numbers was not included in the final results.

Combining all hunt area responses by species indicates that landowners believe antelope numbers have decreased over the last five years. Responses for mule deer suggest the decline in deer numbers may have moderated the last four years with numbers remaining well below desired levels. From 2010 to 2014 the percentage of landowners responding that mule deer numbers were too low ranged from 65% to 70%. Responses for white-tailed deer indicate numbers are down noticeably in several hunter areas due to a 2013 EHD outbreak and liberal hunting seasons. Combined responses show the percentage of landowners responding that white-tail deer numbers are too high dropped from 65% in 2012 to 43% in 2013 and 49% in 2014. The combined hunt areas response for elk indicates that numbers have remained relatively stable the last five years. The 2014 survey suggests 41% of landowners are satisfied with current elk numbers. A number of factors can influence landowner responses including population size, annual precipitation and depredation problems.

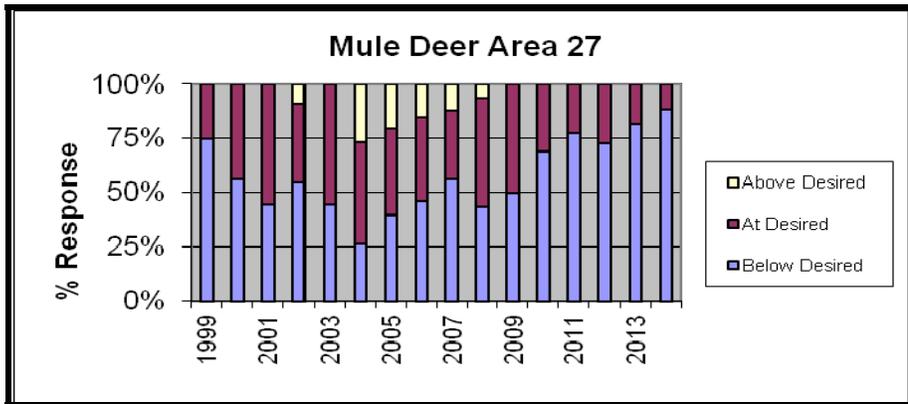
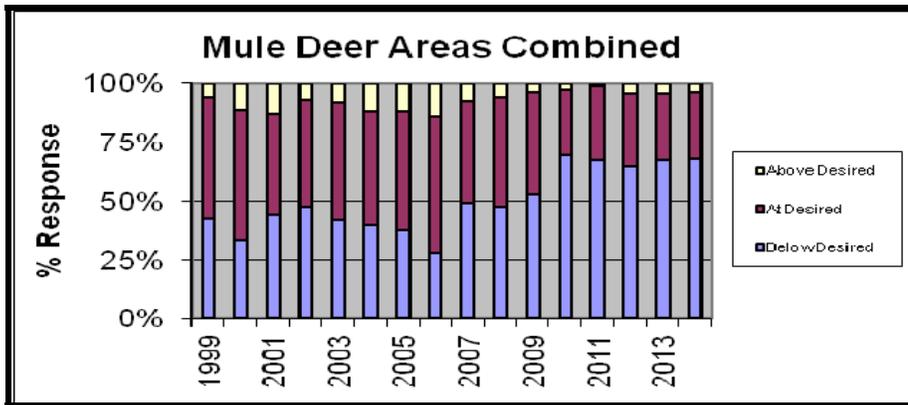
Eight landowners responded they would accept doe/fawn hunters free of charge for one or more species.

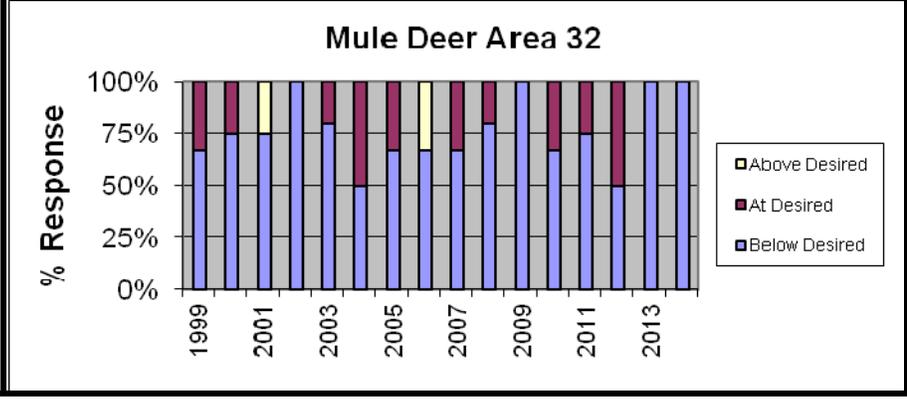
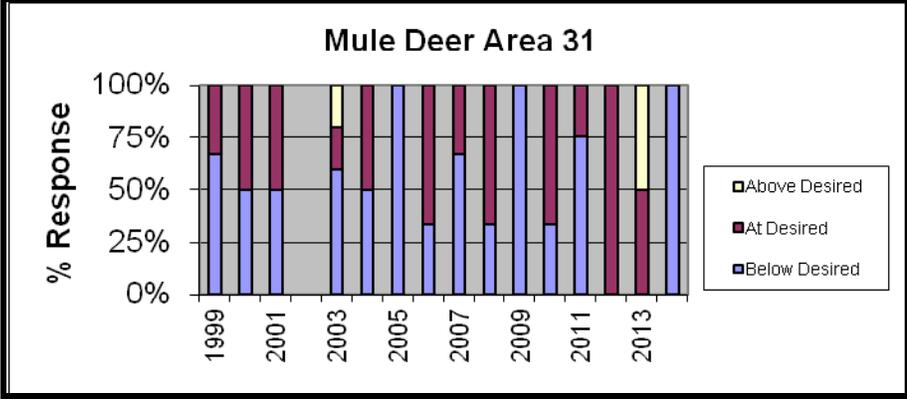
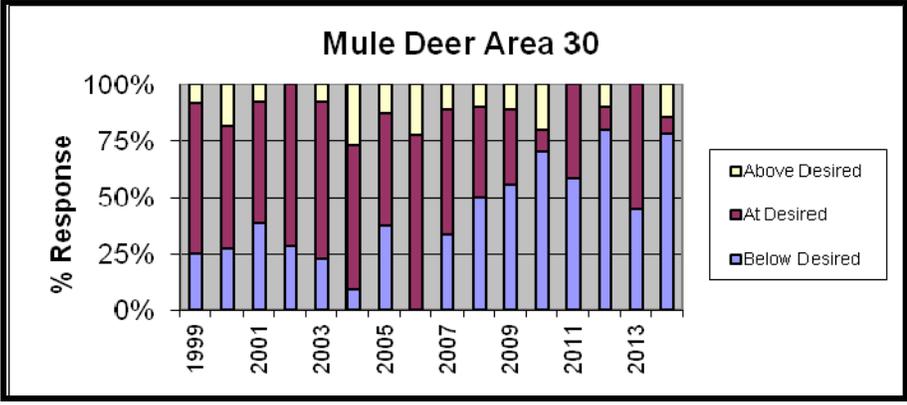
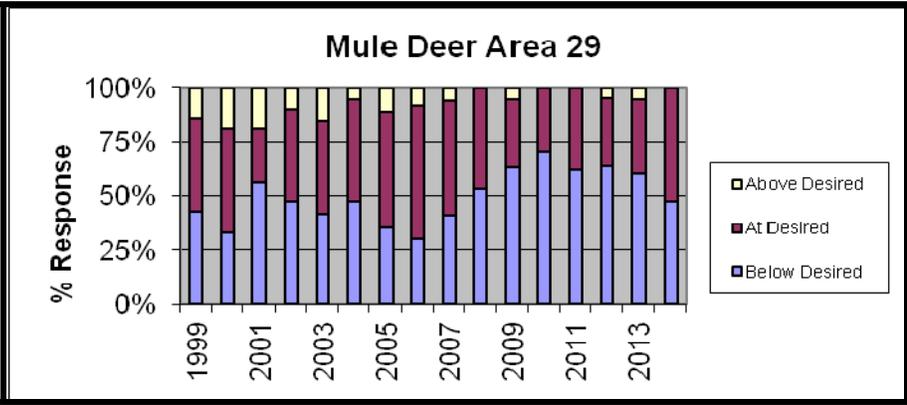
Antelope	Population			Seasons		
Hunt Area	Below Desired Levels	At Desired Levels	Above Desired Levels	More Conserv Seasons	Same Seasons	More Liberal Seasons
20	1	14	8	1	16	5
21	1	8	2	3	7	2
22	2	16	2	2	17	1
102	0	14	5	0	15	4
113	2	4	1	2	3	1
2014 (n=72)	6 (7%)	56 (70%)	18 (23%)	8 (10%)	58 (73%)	13 (17%)
2013 (n=61)	6 (9%)	47 (69%)	15 (22%)	6 (9%)	45 (69%)	14 (22%)
2012 (n=56)	6 (10%)	45 (71%)	12 (19%)	6 (10%)	45 (71%)	12 (19%)
2011 (n=65)	6 (8%)	42 (55%)	28 (37%)	5 (7%)	51 (67%)	20 (26%)
2010 (n=60)	3 (4%)	46 (61%)	27 (35%)	3 (4%)	55 (74%)	16 (22%)
2009 (n=66)	6 (8%)	35 (47%)	34 (45%)	4 (5%)	44 (59%)	27 (36%)
2008 (n=62)	1 (1%)	30 (44%)	38 (55%)	1 (2%)	39 (58%)	27 (40%)
2007 (n=61)	4 (6%)	33 (51%)	28 (43%)	4 (6%)	39 (60%)	22 (34%)
2006 (n=60)	3 (4%)	32 (47%)	34 (49%)	3 (4%)	39 (57%)	27 (39%)
2005 (n=52)	1 (2%)	38 (67%)	18 (32%)	0 (0%)	42 (75%)	14 (25%)
2004 (n=61)	8 (11%)	39 (55%)	24 (34%)	8 (11%)	39 (56%)	23 (33%)
2003 (n=65)	5 (7%)	53 (75%)	13 (18%)	7 (10%)	52 (74%)	11 (16%)
2002 (n=59)	11 (18%)	36 (60%)	13 (22%)	9 (15%)	40 (68%)	10 (17%)
2001 (n=52)	11 (19%)	35 (60%)	12 (21%)	9 (16%)	42 (75%)	5 (9%)
2000 (n=59)	13 (21%)	34 (54%)	16 (25%)	9 (14%)	39 (62%)	15 (24%)
1999 (n=46)	14 (27%)	32 (60%)	7 (13%)	13 (25%)	36 (69%)	3 (6%)

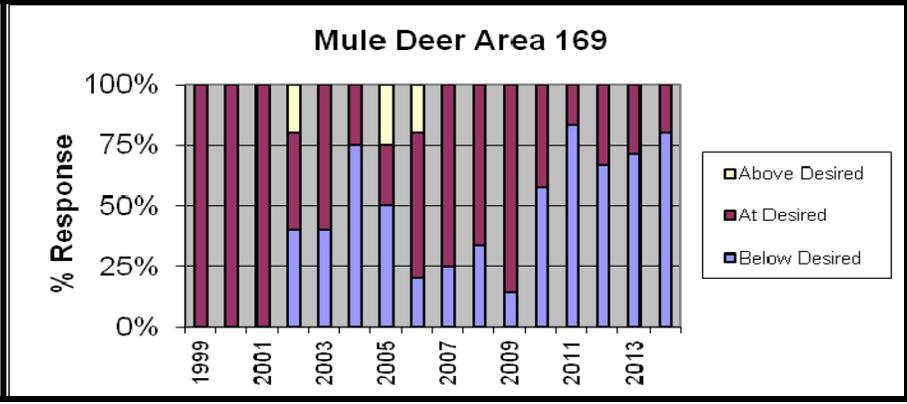
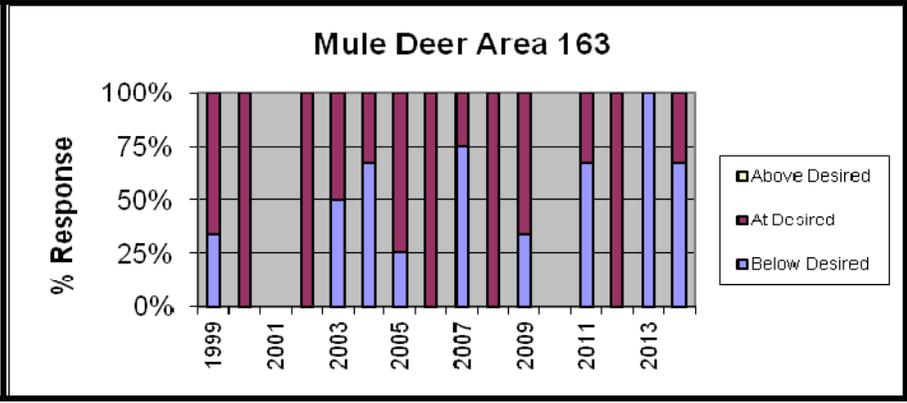
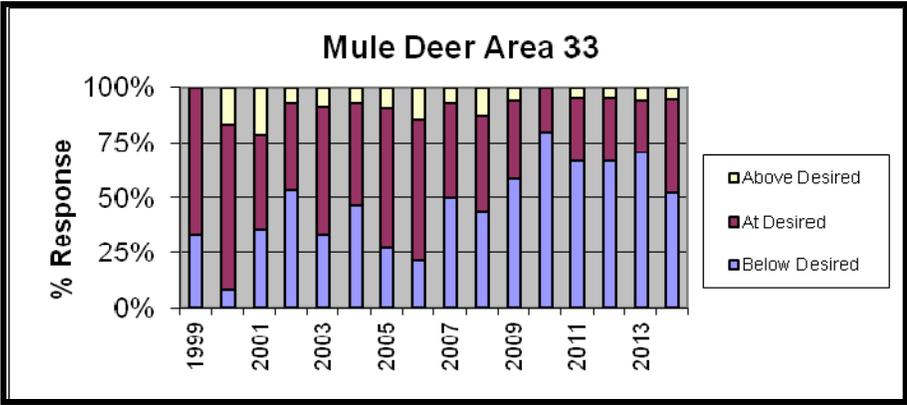




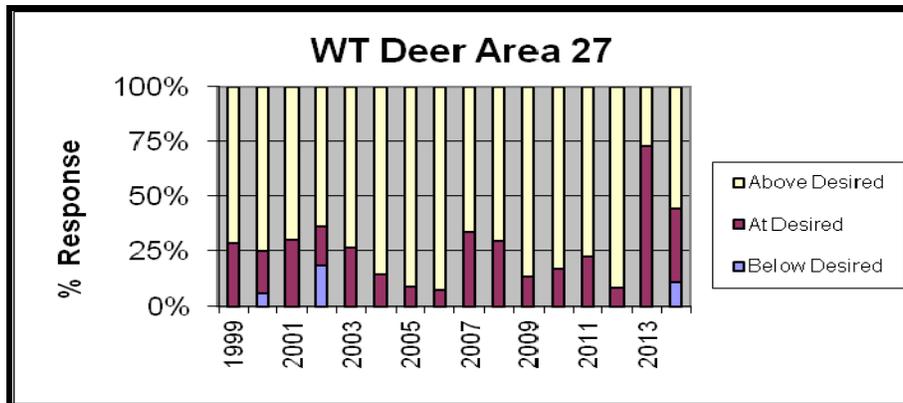
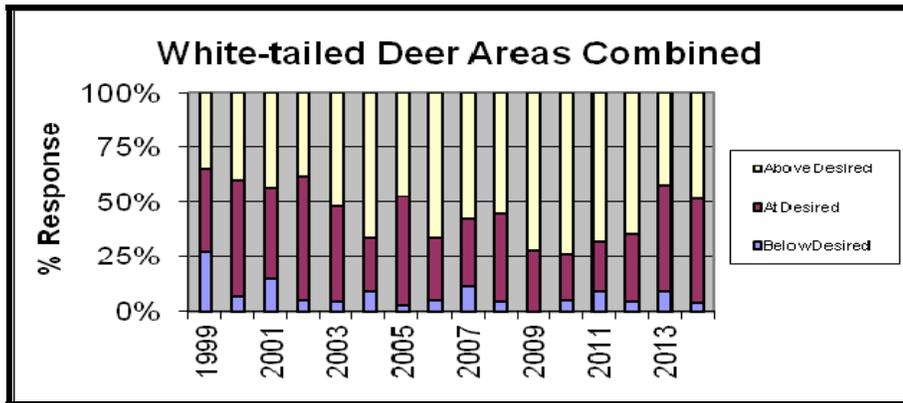
Mule Deer Hunt Area	Population			Seasons		
	Below Desired Levels	At Desired Levels	Above Desired Levels	More Conserv Seasons	Same Seasons	More Liberal Seasons
27	15	2	0	11	5	1
29	9	10	0	8	10	0
30	11	1	2	5	4	2
31	3	0	0	2	0	0
32	1	0	0	1	0	0
33	10	8	1	8	10	1
163	2	1	0	3	0	0
169	4	1	0	3	2	0
2014 (n=69)	55 (68%)	23 (28%)	3 (4%)	41 (54%)	31 (41%)	4 (5%)
2013 (n=61)	50 (68%)	21 (28%)	3 (4%)	46 (64%)	23 (32%)	3 (4%)
2012 (n=55)	48 (65%)	23 (31%)	3 (4%)	30 (45%)	33 (49%)	4 (6%)
2011 (n=66)	54 (68%)	25 (31%)	1 (1%)	48 (64%)	25 (33%)	2 (3%)
2010 (n=61)	51 (70%)	20 (27%)	2 (3%)	30 (44%)	37 (54%)	1 (2%)
2009 (n=64)	41 (53%)	33 (43%)	3 (4%)	21 (30%)	42 (61%)	6 (9%)
2008 (n=62)	33 (48%)	32 (46%)	4 (6%)	17 (25%)	47 (69%)	4 (6%)
2007 (n=62)	34 (49%)	30 (44%)	5 (7%)	26 (39%)	33 (50%)	7 (11%)
2006 (n=59)	20 (28%)	42 (58%)	10 (14%)	15 (22%)	45 (64%)	10 (14%)
2005 (n=50)	22 (38%)	29 (50%)	7 (12%)	16 (32%)	34 (68%)	5 (10%)
2004 (n=64)	30 (40%)	36 (48%)	9 (12%)	21 (31%)	36 (52%)	12 (17%)
2003 (n=66)	33 (42%)	40 (51%)	6 (7%)	23 (29%)	46 (59%)	9 (12%)
2002 (n=69)	34 (48%)	32 (45%)	5 (7%)	24 (34%)	45 (63%)	2 (3%)
2001 (n=52)	27 (44%)	26 (43%)	8 (13%)	17 (29%)	37 (63%)	5 (8%)
2000 (n=63)	24 (34%)	39 (55%)	8 (11%)	19 (27%)	40 (56%)	12 (17%)
1999 (n=47)	23 (43%)	28 (52%)	3 (5%)	18 (32%)	34 (61%)	4 (7%)

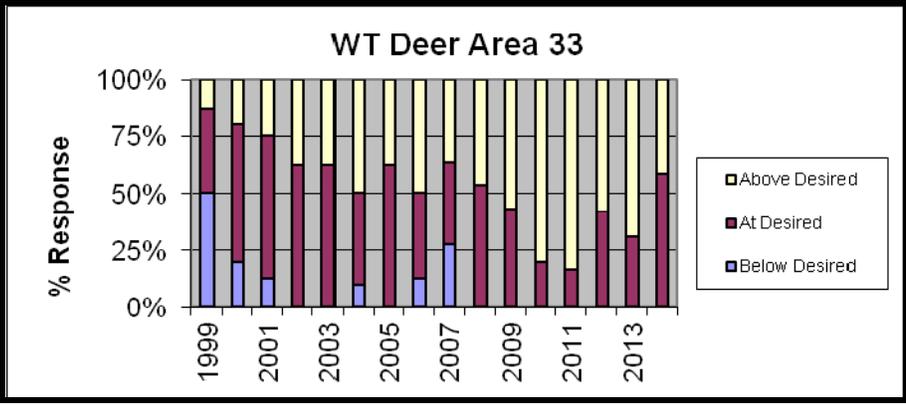
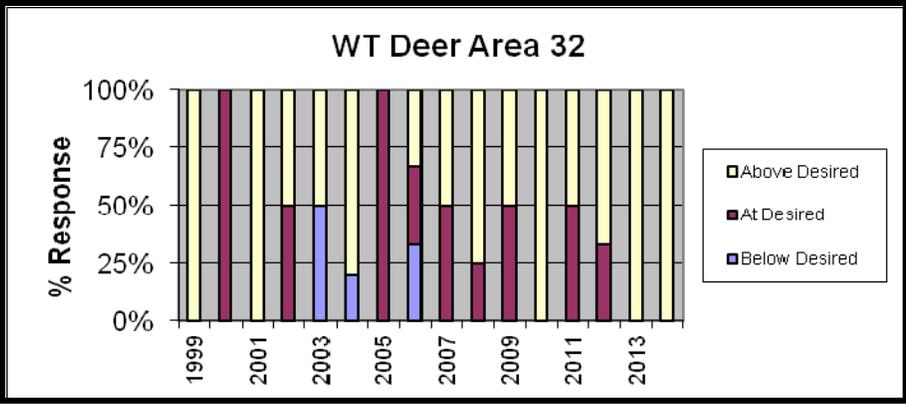
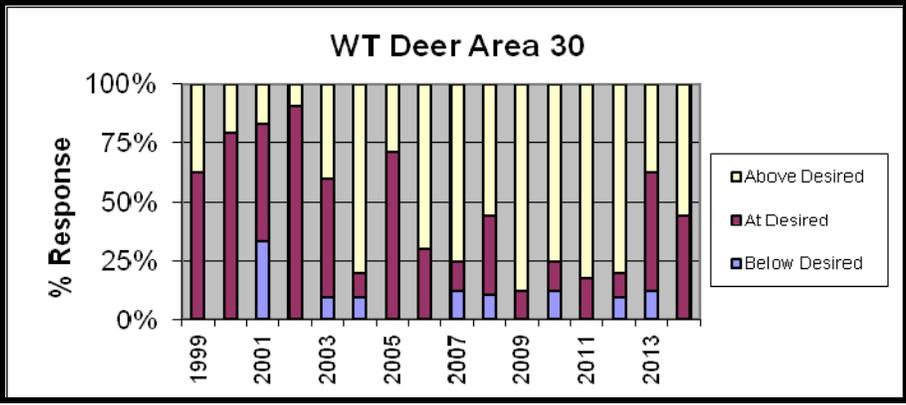
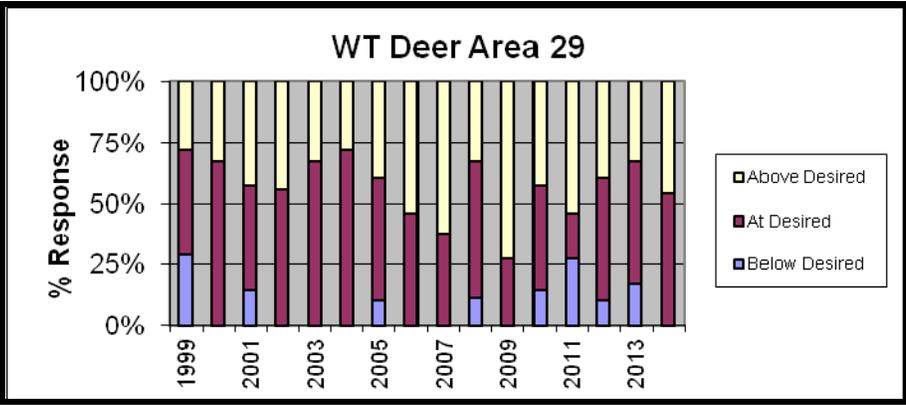




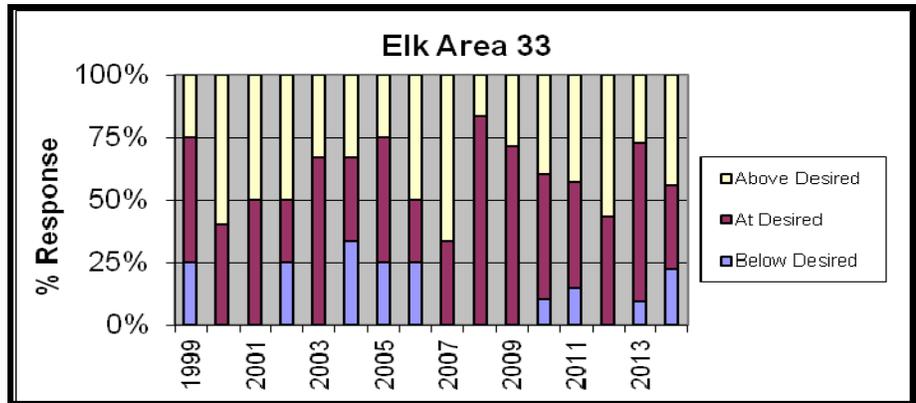
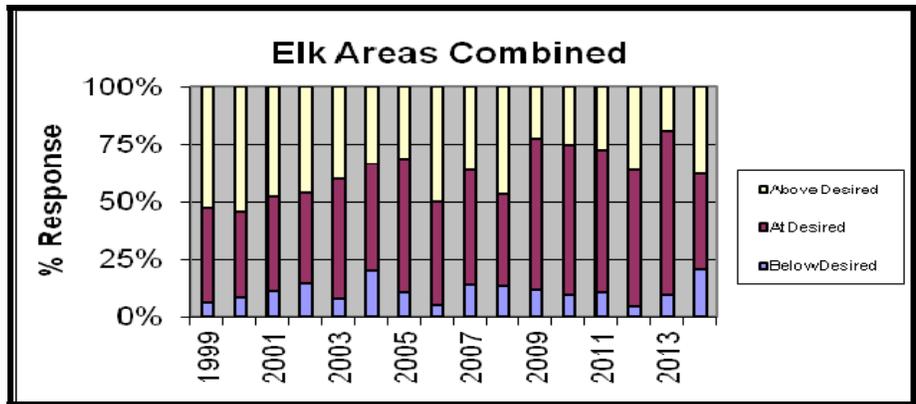


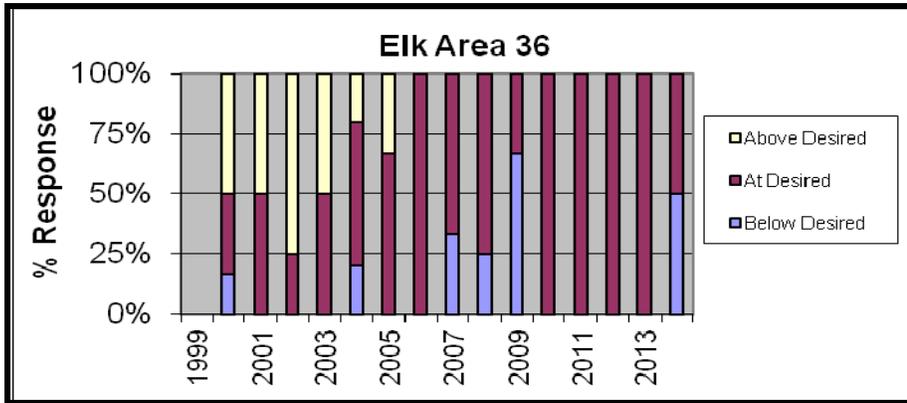
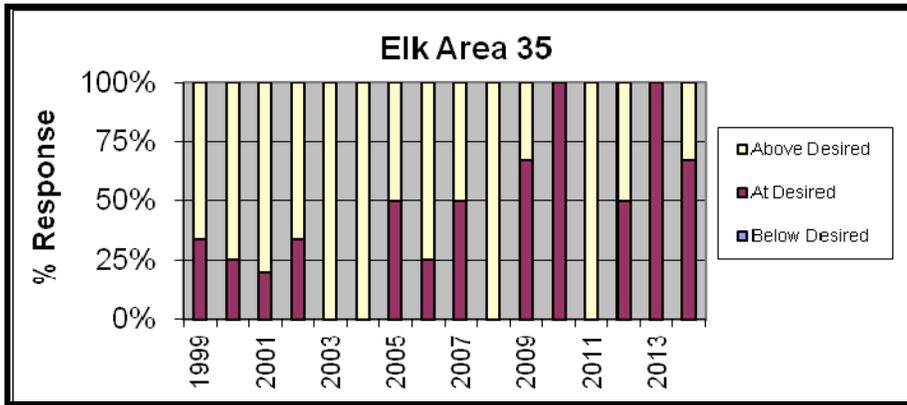
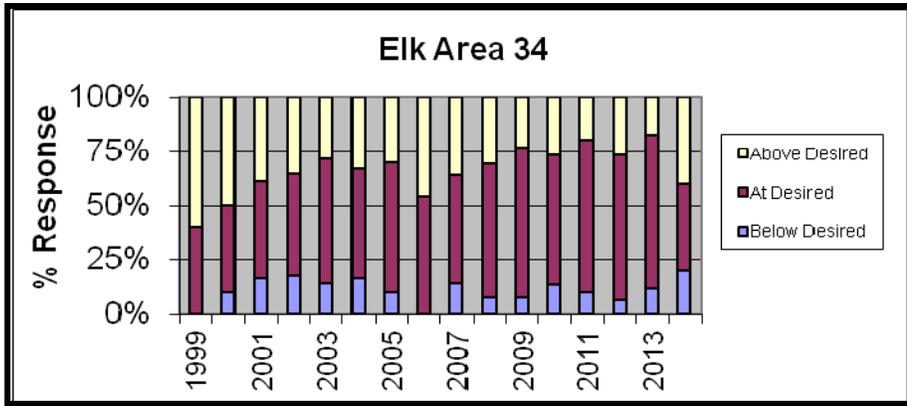
WT Deer Hunt Area	Population			Seasons		
	Below Desired Levels	At Desired Levels	Above Desired Levels	More Conserv Seasons	Same Seasons	More Liberal Seasons
27	2	6	10	2	6	8
29	0	7	6	1	9	2
30	0	4	5	0	7	4
31	0	0	0	0	0	0
32	0	0	1	0	1	0
33	0	7	5	0	7	5
163	0	1	0	0	1	0
169	0	1	0	0	0	1
2014 (n=51)	2 (4%)	26 (47%)	27 (49%)	3 (6%)	31 (57%)	20(37%)
2013 (n=43)	4 (8%)	23 (49%)	20 (43%)	5 (11%)	32 (68%)	10 (21%)
2012 (n=45)	2 (4%)	15 (31%)	32 (65%)	2 (4%)	26 (53%)	21 (43%)
2011 (n=47)	4 (8%)	11 (23%)	33 (69%)	4 (9%)	18 (39%)	24 (52%)
2010 (n=43)	2 (4%)	10 (22%)	34 (74%)	1 (2%)	20 (47%)	22 (51%)
2009 (n=49)	0 (0%)	14 (27%)	37 (73%)	0 (0%)	16 (33%)	32 (67%)
2008 (n=49)	2 (4%)	22 (41%)	30 (55%)	1 (2%)	27 (50%)	26 (48%)
2007 (n=50)	5 (11%)	14 (31%)	26 (58%)	2 (5%)	18 (44%)	21 (51%)
2006 (n=48)	2 (4%)	13 (29%)	30 (67%)	2 (4%)	17 (39%)	25 (57%)
2005 (n=37)	1 (2%)	20 (50%)	19 (48%)	1 (2%)	20 (50%)	19 (48%)
2004 (n=46)	4 (8%)	12 (25%)	32 (67%)	4 (9%)	13 (28%)	30 (64%)
2003 (n=47)	2 (4%)	21 (44%)	25 (52%)	3 (6%)	19 (40%)	26 (54%)
2002 (n=43)	2 (4%)	25 (57%)	17 (39%)	4 (9%)	26 (59%)	14 (32%)
2001 (n=41)	6 (15%)	17 (41%)	18 (44%)	5 (13%)	17 (43%)	18 (45%)
2000 (n=45)	3 (6%)	25 (53%)	19 (41%)	2 (4%)	28 (60%)	17 (36%)
1999 (n=41)	10 (27%)	14 (38%)	13 (35%)	4 (11%)	22 (59%)	11 (30%)





Elk Hunt Area	Population			Seasons		
	Below Desired Levels	At Desired Levels	Above Desired Levels	More Conserv Seasons	Same Seasons	More Liberal Seasons
33	2	3	4	1	4	4
34	3	6	6	2	9	4
35	0	2	1	0	3	0
36	1	1	0	1	1	0
2014 (n=27)	6 (21%)	12 (41%)	11 (38%)	4(14%)	17 (58%)	8 (28%)
2013 (n=34)	3 (10%)	22 (71%)	6 (19%)	3 (10%)	25 (80%)	3 (10%)
2012 (n=23)	1 (4%)	15 (60%)	9 (36%)	1 (4%)	18 (75%)	5 (21%)
2011 (n=31)	3 (10%)	18 (62%)	8 (28%)	2 (7%)	21 (72%)	6 (21%)
2010 (n=30)	3 (10%)	20 (64%)	8 (26%)	3 (10%)	22 (73%)	5 (17%)
2009 (n=30)	3 (12%)	17 (65%)	6 (23%)	1 (4%)	19 (73%)	6 (23%)
2008 (n=25)	2 (8%)	16 (64%)	7 (28%)	0 (0%)	19 (76%)	6 (24%)
2007 (n=22)	3 (14%)	11 (50%)	8 (36%)	5 (24%)	8 (38%)	8 (38%)
2006 (n=22)	1 (5%)	10 (45%)	11 (50%)	2 (9%)	13 (59%)	7 (32%)
2005 (n=19)	2 (10%)	11 (58%)	6 (32%)	1 (5%)	15 (79%)	3 (16%)
2004 (n=30)	6 (20%)	14 (47%)	10 (33%)	3 (10%)	20 (69%)	6 (21%)
2003 (n=25)	2 (8%)	13 (52%)	10 (40%)	0 (0%)	14 (58%)	10 (42%)
2002 (n=28)	4 (14%)	11 (39%)	13 (47%)	6 (21%)	16 (57%)	6 (21%)
2001 (n=25)	3 (11%)	11 (41%)	13 (48%)	3 (11%)	16 (59%)	8 (30%)
2000 (n=33)	3 (9%)	13 (37%)	19 (54%)	3 (8%)	22 (61%)	11 (31%)
1999 (n=17)	1 (6%)	7 (41%)	9 (53%)	3 (18%)	11 (65%)	3 (18%)







## APPENDIX D

### Shrub Monitoring Results for the Sheridan Region

Shrub monitoring was again conducted during fall 2014 and spring 2015 in the Sheridan Region to provide baseline habitat trend data to increase the awareness of habitat condition/trend among wildlife biologists and game wardens as they manage wildlife populations. These surveys were designed to:

- Monitor “key” or “indicator” areas that appear to reflect what is occurring within the larger area and where the vegetation community may show reactions or changes to population management.
- Use vegetation and habitat trend data to assist with justification of season recommendations and population objectives.
- Increase awareness of wildlife biologists, game wardens and the public of annual vegetation condition and long-term trends.
- Keep the process relatively simple for annual monitoring and assessment and include a minimum of one transect for each warden district and two transects for each wildlife biologist district. Each transect should be visited twice each year with data collected in the fall and in the spring. Historical transect locations and coordination with other land management agencies should be considered.
- Vegetation monitoring priority is in sagebrush and sagebrush steppe communities, however, other shrub communities and other vegetation type communities will be monitored as identified by Regional personnel.

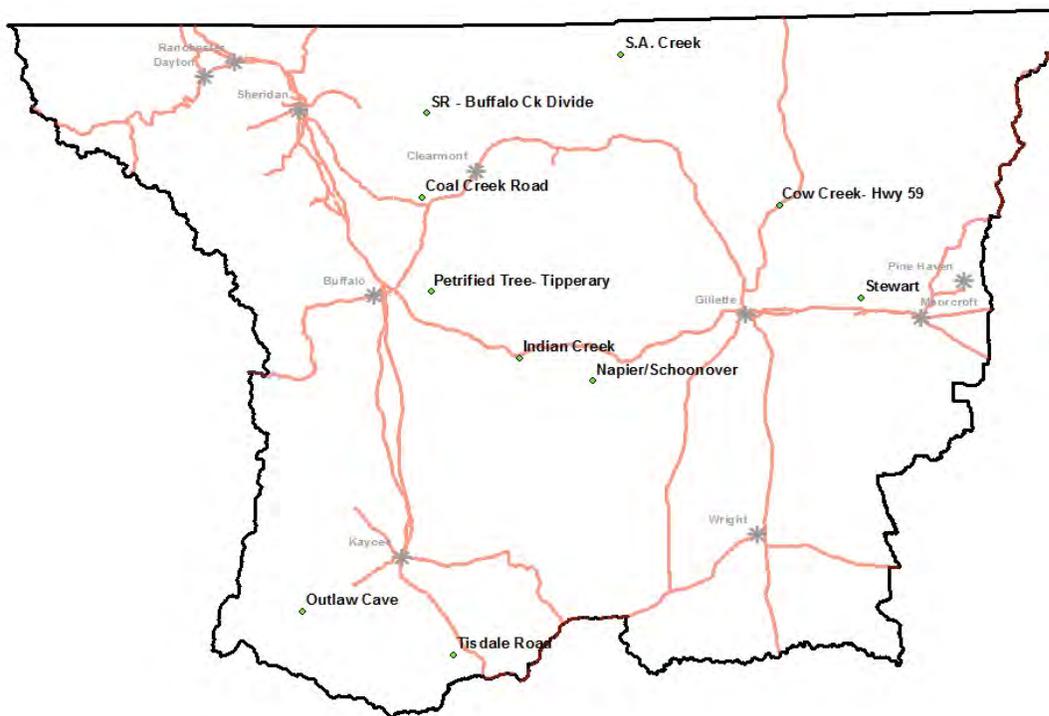
Basic data collection techniques are referenced in Appendix XII of the Handbook of Biological Techniques, WGFD 2007, pages 7-17. Minimum data collection requirements for the monitoring stations established regardless of vegetation community type or specific plant species include:

1. Measure annual production on a minimum of 5 leaders from at least 50 plants at paced intervals in late summer/fall after plant growth and prior to leaf drop or loss.
2. Measure annual utilization as number of leaders browsed from a minimum of 10 leaders from each of 50 plants at paced intervals collected in late winter or early spring prior to plant growth and after most animals have left the area.
3. Determine spring pellet group density from at least 10 circular 1/100 Ac plots.
4. Repeat photos (3 photos) collected in the spring and fall.
5. Nearby weather station summaries or on-site data if collected.
6. Permanent 4'x4' hog wire cage to show large ungulate non-use as compared to use areas.
7. Shrub/tree age class categories for a minimum of 50 plants collected in the fall. Categories for describing shrub classes range from 1-4, with 1=young, 2=mature, 3=decadent, and 4=dead.

8. Shrub/tree hedging class categories for a minimum of 50 plants collected in the fall. Categories for describing shrub hedging range from 1-3, with 1=light, 2=moderate, and 3=severe.

Nine sagebrush transects and one curlleaf mountain mahogany transect were established at locations presented in Figure 1. Precipitation data is taken from four NOAA/NWS cooperative observer precipitation sites located at Leiter, Buffalo, Kaycee, and Gillette.

**Figure 1.** Locations of Sheridan Region Shrub Transects.



## Leader Production

### *Sheridan Area*

In the Sheridan area, leader production estimates were taken on one Wyoming big sagebrush transect, SA Creek. Average leader production measured during the fall 2014 at SA Creek was 6.4 cm. There were no leader growth measurements taken on the Coal Creek or SR Buffalo Creek transects in 2014. Leader production was slightly higher than the ten year average at the SA Creek site. Precipitation in the Sheridan area for 2014 was 13.27 inches, which was slightly lower than the ten year average. See graphs in Fig. 2.

### *Buffalo Area*

In the Buffalo area, leader production estimates were taken on two Wyoming big sagebrush transects, Indian Creek and Napier/Schoonover. Average leader production measured during fall 2014 for Indian Creek and Napier/Schoonover was 2.2 and 2.1 cm, respectively. There were no leader production estimates taken on the Petrified Tree-Tipperary transect in 2014. Indian Creek and Napier/Schoonover leader production was lower than the ten year average for those respected sites. Precipitation in the Buffalo area for 2014 was 15.09 inches, which was higher than the ten year average. See graphs in Fig. 2.

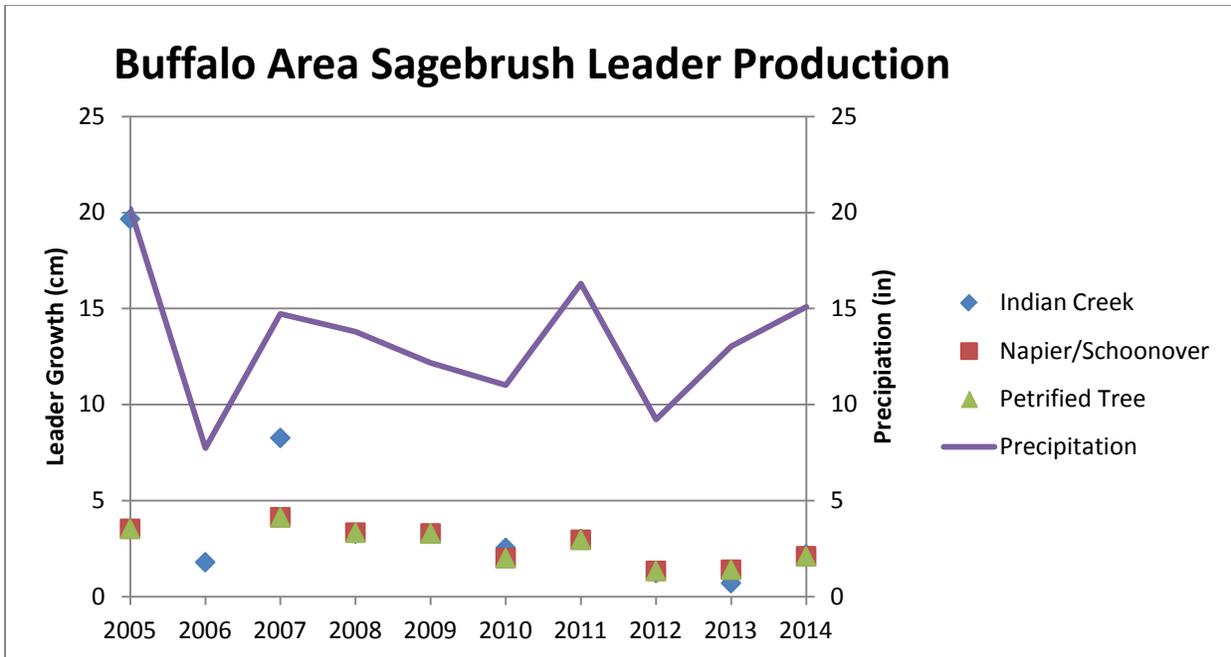
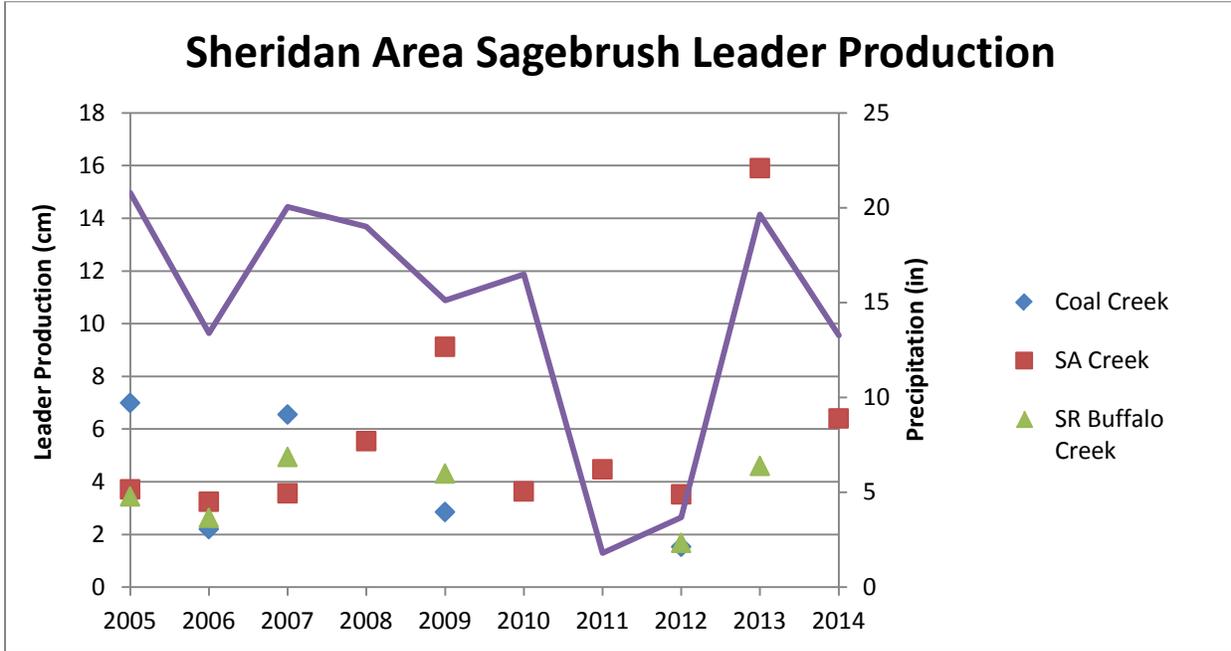
### *Kaycee Area*

In the Kaycee area, leader production estimates were taken on one Wyoming big sagebrush transect, Tisdale Road, and a curl-leaf mountain mahogany transect, Outlaw Cave. Average leader production measured during fall 2014 was 3.6 and 2.9 cm, respectively. Tisdale Road leader production was slightly higher than the ten year average, while Outlaw Cave leader production was considerably lower than the ten year average for those respective sites. Precipitation in the Kaycee area for 2014 was 11.82 inches, which was noticeably higher than the ten year average. See graphs in Fig. 2.

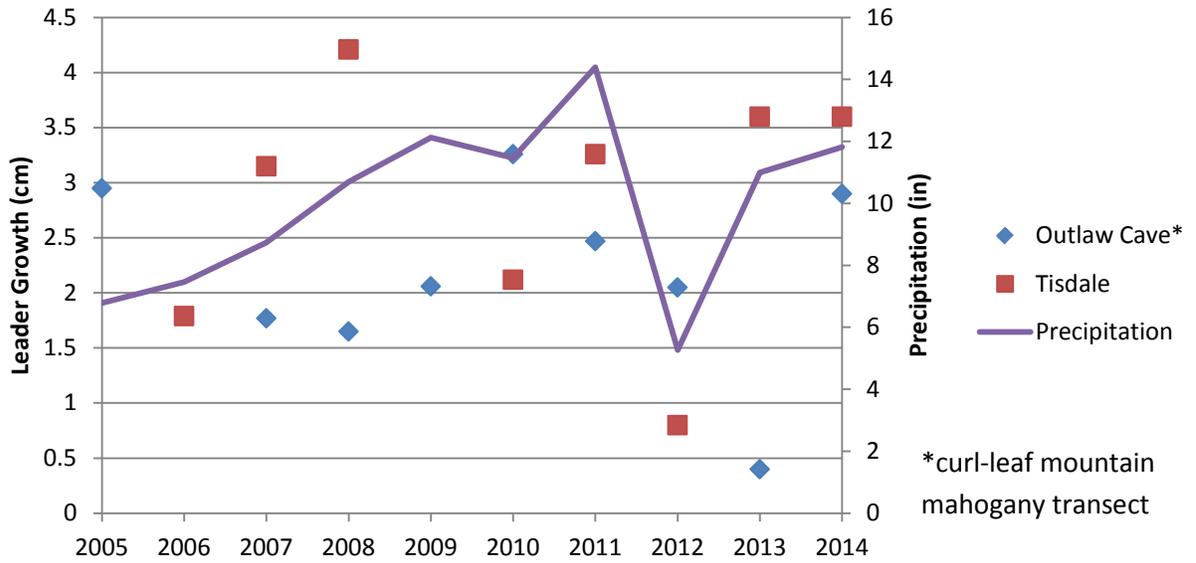
### *Gillette Area*

In the Gillette area, leader production estimates were taken on two Wyoming big sagebrush transects, Cow Creek and Stewart. Average leader production measured during fall 2014 was 3.5 and 4.1 cm, respectively. Cow Creek and Stewart leader production was lower than the ten year average for those respective sites. Precipitation in the Gillette area was 20.7 inches, which was considerably higher than the ten year average. See graphs in Fig. 2.

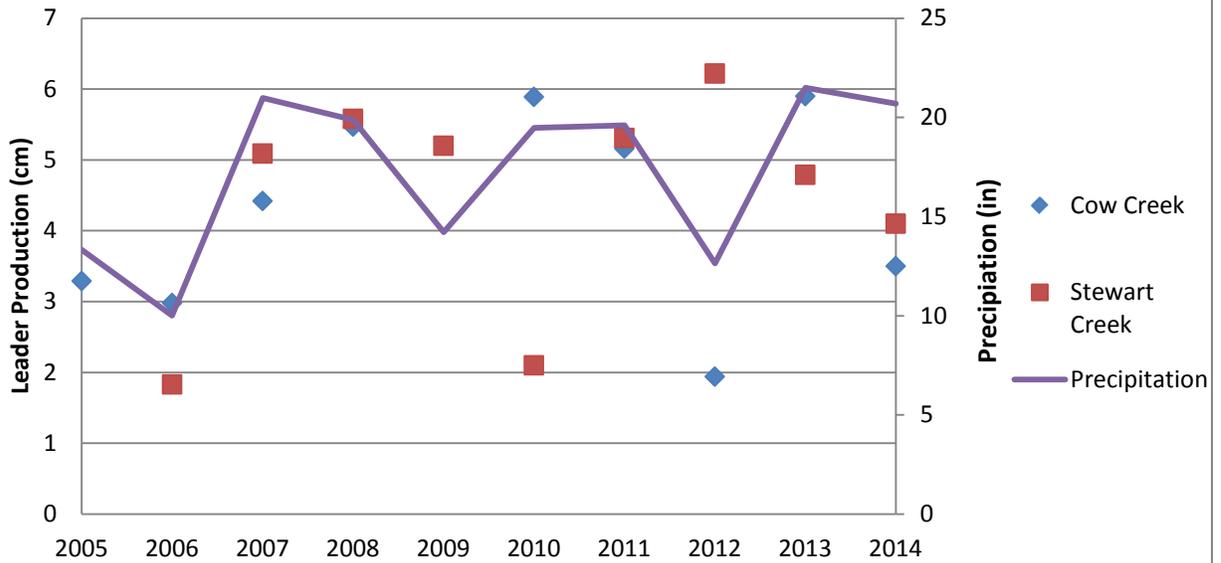
**Figure 2.** Sheridan Region Browse Leader Production.



### Kaycee Area Browse Leader Production



### Gillette Area Sagebrush Leader Production



## **Age Class**

### *Sheridan Area*

In the Sheridan area, age class estimates were taken on one Wyoming big sagebrush transect, SA Creek. The age class estimate for the SA Creek transect was 2.12. There were no age class estimates taken on Coal Creek or SR Buffalo Creek transects in 2014. Age class estimates were slightly lower than the ten year average for SA Creek. See table in Fig. 3.

### *Buffalo Area*

In the Buffalo area, age class estimates were taken on two Wyoming big sagebrush transects, Indian Creek and Napier/Schoonover. Age class estimates were 2.16 and 1.98, respectively. There were no age class estimates taken on the Petrified Tree-Tipperary transect in 2014. Indian Creek age class estimates were slightly higher than the ten year average for that site, while Napier/Schoonover age class estimates were slightly lower than the ten year estimates for that site. See table in Fig. 3.

### *Kaycee Area*

In the Kaycee area, age class estimates were taken on one Wyoming big sagebrush transect, Tisdale Road, and a curl-leaf mountain mahogany transect, Outlaw Cave. Age class estimates were 2.06 and 1.96, respectively. Tisdale Road and Outlaw Cave age class estimates were slightly lower than the ten year average for those respective sites. See table in Fig. 3.

### *Gillette Area*

In the Gillette area, age class estimates were taken on two Wyoming big sagebrush transects, Cow Creek and Stewart. The age class estimate for Cow Creek and Stewart was 1.96 and 2.20, respectively. Cow Creek age class estimates were slightly lower than the ten year average for that site. Stewart age class estimates were slightly higher than the ten year average for that site. See table in Fig. 3.

**Figure 3. Sheridan Region Shrub Age Class**

<b>Year</b>	<b>2005</b>	<b>2005</b>	<b>2006</b>	<b>2007</b>	<b>2008</b>	<b>2009</b>	<b>2010</b>	<b>2011</b>	<b>2012</b>	<b>2014</b>	<b>10 Year Average</b>
<b>Sheridan Area</b>											
Coal Creek	-	2.48	2.41	-	2.54	-	-	2.52	-	-	<b>2.49</b>
SA Creek	-	2.42	2.44	2.4	2.28	2.26	2.25	2.06	2.14	2.12	<b>2.26</b>
SR Buffalo Creek	1.94	2.42	2.27	-	2.37	-	-	2.34	2.29	-	<b>2.27</b>
<b>Buffalo Area</b>											
Indian Creek	-	2.26	1.92	2.16	-	2.00	2.16	2.02	2.12	2.16	<b>2.10</b>
Napier/Schoonover	2.15	-	2.31	2.18	2.07	2.04	2.11	2.00	2.08	1.98	<b>2.10</b>
Petrified Tree	-	-	2.56	-	2.15	-	-	2.34	-	-	<b>2.35</b>
<b>Kaycee Area</b>											
Outlaw Cave*	-	2.25	2.34	2.28	2.12	2.12	2.00	2.2	2.2	1.96	<b>2.16</b>
Tisdale	-	2.62	2.26	2.22	-	2.12	2.22	2.32	2.18	2.06	<b>2.25</b>
<b>Gillette Area</b>											
Cow Creek		2.04	2.1	2.6	-	2.42	2.33	2.02	-	1.96	<b>2.21</b>
Stewart Creek		2.18	2.04	2.12	1.94	2.1	2.14	2.14	2.14	2.20	<b>2.11</b>

- No data

\* Curl-leaf mountain mahogany transect

## **Hedging Class**

### *Sheridan Area*

In the Sheridan area, a hedging score was taken on one Wyoming big sagebrush transect, SA Creek. The hedging score was 2.06 at SA Creek. There were no hedging scores taken on Coal Creek or SR Buffalo Creek transects in 2014. The hedging score for SA Creek was considerably higher than the ten year average of that respective site. See table in Fig. 4.

### *Buffalo Area*

In the Buffalo area, hedging scores were taken on two Wyoming big sagebrush transects, Indian Creek and Napier/Schoonover. Hedging scores were 1.4 and 1.98, respectively. No hedging scores were taken on the Petrified Tree-Tipperary transect in 2014. Indian Creek had a slightly lower hedging score than the ten year average for that respective site, while the hedging score for the Napier/Schoonover transect was slightly higher than the ten year average for that site. See table in Fig. 4.

### *Kaycee Area*

In the Kaycee area, hedging scores were taken on one Wyoming big sagebrush transect, Tisdale Road, and a curl-leaf mountain mahogany transect, Outlaw Cave. Hedging scores were 1.34 and 1.98, respectively. Hedging on Tisdale Road was slightly lower than the ten year average for that site, while the hedging score for the Outlaw Cave transect was slightly higher than the ten year average for that site. See table in Fig. 4.

### *Gillette Area*

In the Gillette area, hedging scores were taken on two Wyoming big sagebrush transects, Cow Creek and Stewart. Hedging scores were 1.22 and 1.34, respectively. Cow Creek and Stewart hedging scores were both lower than the ten year average for those respective sites. See table in Fig. 4.

**Figure 4. Sheridan Region Hedging Scores**

<b>Year</b>	<b>2005</b>	<b>2005</b>	<b>2006</b>	<b>2007</b>	<b>2008</b>	<b>2009</b>	<b>2010</b>	<b>2011</b>	<b>2012</b>	<b>2014</b>	<b>10 Year Average</b>
<b>Sheridan Area</b>											
Coal Creek	1.76	1.92	1.6	-	1.24	-	-	1.2	-	-	<b>1.54</b>
SA Creek	1.62	-	1.18	2.04	1.23	1.02	1.32	1.52	2.14	2.06	<b>1.57</b>
SR Buffalo Creek	1.59	1.74	1.56	-	1.52	-	-	1.62	1.9	-	<b>1.65</b>
<b>Buffalo Area</b>											
Indian Creek	-	1.76	1.12	1.85	-	1.22	1.71	1.22	1.8	1.4	<b>1.51</b>
Napier/Schoonover	1.76	-	2.34	1.82	1.95	2.00	1.08	2.00	1.26	1.98	<b>1.80</b>
Petrified Tree	-	-	1.52	-	2.09	-	-	1.3	-	-	<b>1.64</b>
<b>Kaycee Area</b>											
Outlaw Cave*	1.64	2.04	1.96	2.26	1.94	1.99	1.62	1.68	1.18	1.98	<b>1.83</b>
Tisdale	-	2.14	2.17	1.9	-	1.83	1.84	1.9	1.26	1.34	<b>1.80</b>
<b>Gillette Area</b>											
Cow Creek	1.51	1.24	1.82	1.76	-	1.36	1.47	1.44	1.04	1.22	<b>1.43</b>
Stewart Creek	-	-	2.27	1.96	2.41	1.04	1.63	1.24	1.08	1.34	<b>1.62</b>

- No data

\* Curl-leaf mountain mahogany transect

## **Shrub Utilization**

### *Sheridan Area*

In the Sheridan area, shrub utilization estimates was taken on one Wyoming big sagebrush transect, SA Creek. There was no shrub utilization estimates taken on the Coal Creek or SR Buffalo Creek transects during 2015. Average percent shrub utilization during the spring of 2015 at SA Creek was 5%. Shrub utilization was equal to the ten year average at SA Creek. See graphs in Fig. 5.

### *Buffalo Area*

In the Buffalo area, shrub utilization estimates were taken on three Wyoming big sagebrush transects, Indian Creek, Napier/Schoonover, and Petrified Tree-Tipperary. Shrub utilization estimates were 18.6%, 4.2, and 8.8%, respectively. Indian Creek and Petrified Tree-Tipperary shrub utilization estimates were both higher than the ten year average for those respective sites, while shrub utilization appeared to be considerably lower than the ten year average at the Napier/Schoonover site. See graphs in Fig. 5.

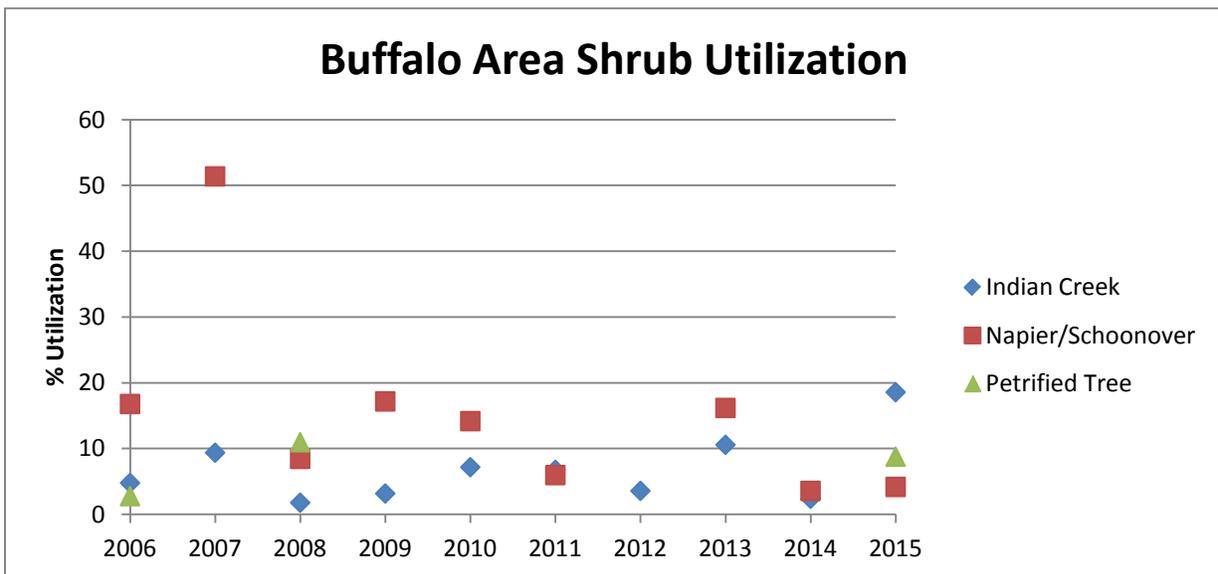
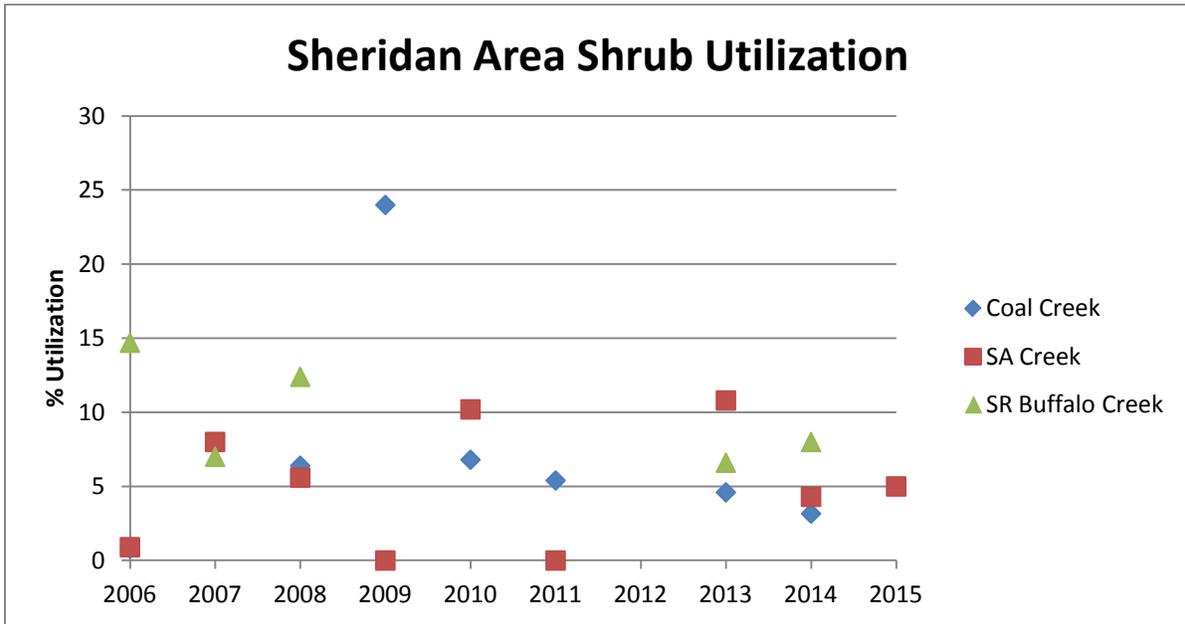
### *Kaycee Area*

In the Kaycee area, shrub utilization estimates were taken on one Wyoming big sagebrush transect, Tisdale Road, and a curl-leaf mountain mahogany transect, Outlaw Cave. Shrub utilization estimates were 18.4% and 2%, respectively. Tisdale Road shrub utilization was only considerably higher than the ten year average for that site, while Outlaw Cave shrub utilization was slightly lower than the ten year average for that site. See graphs in Fig. 5.

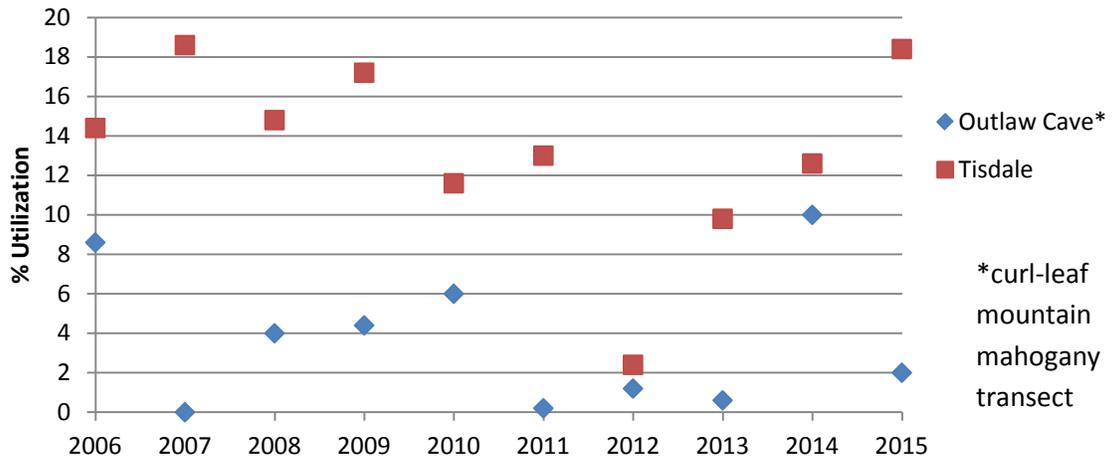
### *Gillette Area*

In the Gillette area, shrub utilization estimates were taken for two Wyoming big sagebrush transects, Cow Creek and Stewart. Shrub utilization estimates were 0.6% and 3.6%, respectively. Both Cow Creek and Stewart utilization were considerably lower than the ten year average for those respected sites. See graphs in Fig. 5

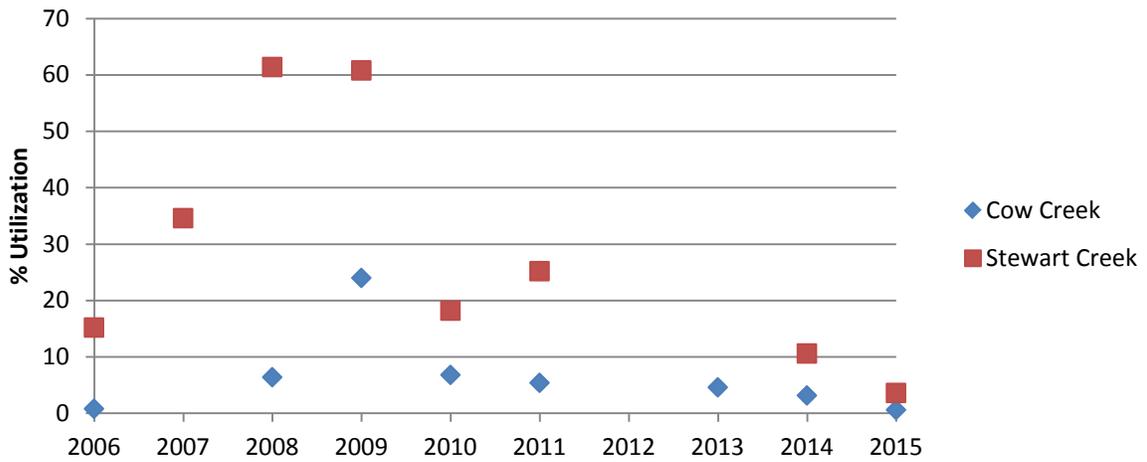
**Figure 5. Sheridan Region Shrub Utilization**



### Kaycee Area Shrub Utilization



### Gillette Area Shrub Utilization



## Conclusions

### *Leader Production*

Leader production in the Sheridan Region was higher than normal for the western part of the region, but the leader production estimates for the eastern side of the region was below the ten year average. This result was unexpected, due to the higher than average precipitation that occurred throughout the region during 2014. Leader production appeared to be above average in the Sheridan and Kaycee area, but below normal in the Buffalo and Gillette area. Throughout the eastern portion of the region, the Terrestrial Habitat Biologist and Gillette Biologist have documented numerous stands in 2014 that appeared to be in extremely poor condition. There are many different factors that could explain this, including increased age and decadence of sagebrush stands in the area or abnormally higher than normal precipitation for two years in a row. There could also disease attacking the sagebrush or some sort of parasite. Any of these factors could have contributed to the decrease in leader production observed in the eastern portion of the Sheridan Region. The documented sagebrush stands in poor condition will continually be monitored and the Terrestrial Habitat Biologist will continue to look for other stands that appear to be rapidly declining in condition. Overall trends suggest though, that leader production is on a downward trend. This could be explained by the increasing age of the majority of the sagebrush stands occurring in the Sheridan region since these transects have been established.

### *Age Class*

Age class estimates in the Sheridan region appear to be fairly stable, to slightly decreasing, which reflects that the majority of our browse species are mature plants, with the possibility of increased frequency of younger plants. Although age class estimates indicate that more younger plants are being recruited in the Sheridan Region sagebrush stands, they likely are not a large contributing factor to leader production yet, which is indicated in the overall downward trend in leader production observed.

### *Hedging Scores*

Hedging scores taken in 2014 in the Sheridan Region appear to reflect a decrease in use by ungulates compared to the ten year average. This appears to reflect the overall trend of decreased hedging seen in most shrub transects in the Sheridan Region. Deer and pronghorn populations have been low in the Sheridan Region for a couple of years, and this is most likely the explanation for the decrease in shrub hedging. It is noted though, that the trend in hedging scores in the Sheridan area, specifically SR Buffalo Creek and SA Creek in the Sheridan Area, are showing a positive trend towards increasing hedging. Overall, hedging appears to be minimal across the region.

### *Shrub Utilization*

Shrub utilization estimates taken in 2015 in the Sheridan Region was highly variable across the region. Overall percent shrub utilization for 2015 was not much above or below the ten year

average in the Sheridan Region. The Indian Creek transect showed a large increase in percent utilization compared to the long term average, but browse levels were still within acceptable parameters. Utilization was markedly decreased at the Stewart Road transect compared to the 10 year average as well, which may be explained by decreased pronghorn populations in that herd. Overall, browse does not appear to be over utilized in the region.

## **APPENDIX E**

### **CAMPBELL COUNTY HUNTER ASSISTANCE SERVICE 2014 SUMMARY OF ACTIVITIES**

#### **Operations**

2014 was the 31st year for the Campbell County Hunter Assistance Service (here after “the Service”). The program was started in 1983 as an effort to better coordinate private land availability with prospective hunters. The Service has since evolved to include both private land hunting coordination as well as public land hunting information.

In 2014, the Hunter Assistance Service was operated from the Campbell County Visitor’s Center (here after “The Visitor’s Center”), located at Highway 59 and Interstate 90. Prior to 2000, the Service was conducted at both the Visitor’s Center and the Campbell County Chamber of Commerce in downtown Gillette. With a consolidated operation at one location, the Service is better able to maximize limited resources as well as provide better service to the hunting community, as all the information is located at one readily accessible and centrally located site.

During the past 15 years, the Service has also provided information for the Department’s Walk-in Access areas. In 2000, a temporary position was funded by the Department to work at the Visitor’s Center from late September through early November. A Game and Fish Department Access Yes grant was used from 2003-2009 to fund the position. The focus of this position was to promote Walk-in Access areas within Campbell County, distribute Walk-in Access guides, to contact landowners in the Gillette District to find those ranches seeking additional hunters, and to keep an active list of those ranches available at the Visitor’s Center for hunters seeking hunting opportunities. In previous years, the temporary employee had spent considerable time contacting landowners to inquire about big game hunting opportunities on private land. Those with open dates to take additional hunters were kept on a calling list to be distributed to hunters seeking such opportunity. The hired employee also worked at the Visitor’s Center during peak visitation periods, answering hunter questions and recommending appropriate departmental publications.

For the 2014 hunting season, coverage was provided by the Gillette Wildlife Biologist and Game Wardens, the Sheridan Information and Education Specialist, and by employees of the Visitor’s Center. It is hoped that this position will be refilled in future seasons when funding is available, as it is a valuable addition to the Hunter Assistance Service and provides the hunting public with additional information.

The Service has greatly expanded during the past few years to become more than just an opportunity to provide hunter assistance during the peak fall season. The Campbell County Visitor’s Center now fields hunter inquiries year-round. The permanent staff at the Visitor’s Center has become well-versed in hunting and fishing opportunities within the region and are able to provide this information to nonresident tourists and residents throughout the year. If unable to directly assist the public with hunting and fishing information, The Visitor’s Center forwards requests to either local Department personnel or the Regional Office in Sheridan. The Department has benefited greatly from this added service. The number of Department customers the Visitor’s Center has assisted points to the need for a permanent Game and Fish public office in Gillette, should funding become available.

Various Department publications were made available for free distribution during service operations, including hunting regulations, fishing guides, and various specialty publications of the Department.

The Bureau of Land Management (BLM) land status maps (1:100,000) have been available at the Visitor's Center for the past eight years for resale to the hunting public. Sportsmen were assisted with understanding these maps by using a map display of Northeast Wyoming, which included marked public access roads. The display maps were updated to show changes in land ownership due to sales of state lands and exchanges of USFS and BLM lands. Display maps were located outside the building. Specific information on public lands hunting, map reading, and hunter ethics was also posted to the outside wall. The availability of critical hunting information along the outside wall of the Visitor's Center provided full-time support to the hunting community, even when the Visitor's Center was closed. The "big map" has become a popular stop for non-resident hunters. Hunters can update their own field maps and ask questions of WGFD and Visitor's Center staff before going into the field, and have mentioned that they appreciate and enjoy the service. Hunters also mention that they are very pleased with the "one-stop shopping" opportunity they have to purchase maps, reference the large map, and pick up regulations, and have their questions addressed at the Visitor's Center.

## Results and Discussion

Personnel focused on fielding questions from the multitude of hunters that stopped in at the Visitor's Center and educating sportspersons about available public land and Walk-in hunting opportunities.

Visitor's Center personnel were very good in documenting hunter participation with the Hunter Assistance Service. During peak visitation periods when there were typically 10 to 20 hunters at the Visitor's Center at one time, it could be challenging to document detailed visitation information. Hunter information posted outside of the building meant that many hunters were never directly contacted by the Visitor's Center staff inside. Self-service information was very good for the customers, but the approach does not lend itself well to documenting actual total visitation and assistance provided. Additionally, some hunters were seen using the outside map and services during times when the Visitor's Center was closed. Overall, the Visitor's Center personnel did a commendable job in sampling the visiting hunter population; however the total numbers reported are recognized as being less than the actual total number of hunters using the Service in past years, due to the staffing limitations.

The recorded visitation in 2014 totaled approximately 540 hunters (Table 1). This total is likely lower than the actual total of visiting hunters, as some individuals that visited during September were not tallied by Visitor's Center staff and for reasons mentioned in the previous paragraph. It is conservatively estimated that at least 1,000 hunters actually used the Hunter Assistance Service in some fashion during the 2014 season.

**Table 1.** Gillette Hunter Assistance Service summary from 1984 to 2014.

Year	Landowners	Total Hunters
1984	45	741
1985	36	554

1986	24	923
1987	24	1,131
1988	22	737
1989	28	501
1990	28	236
1991	43	442
1992	46	695
1993	31	727
1994	24	681
1995	33	701
1996	28	651
1997	19	626
1998	27	573
1999	19	620
2000	29	1,776
2001	22	1,316
2002	17	1,346
2003	29	1,237
2004	35	1,711
2005	18	845
2006	12	481
2007	17	1,034
2008	12	922
2009	10	600
2010	0	1,007
2011	0	903
2012	0	853
2013	0	593
2014	0	540

Peak visitation tends to occur just prior to the start of the rifle season and remains high following the October 1<sup>st</sup> season opener for about 3 to 7 days. Many nonresident hunters feel that they must hunt the opening days of a season despite efforts to inform them that such a strategy is not necessary for a successful Wyoming hunt. The Gillette Wildlife Biologist and Gillette Wardens were present at the Visitor’s Center for two days prior to opening day and fielded the majority of hunting questions. The Sheridan Information and Education Specialist was also present on one day to assist. During the later parts of the season, the Gillette Wildlife Biologist would stop in as time permitted to help field questions. If staff members were unable to answer a question for a visiting hunter, they would either contact the Wildlife Biologist via cell phone or would contact the Sheridan Regional Office for assistance. The employees of the Visitor’s Center did a commendable job in answering hunting questions this past year.

Sales of BLM Surface Management Maps were extremely popular. Many non-residents read about the Service via the Campbell County Hunting Guide – a mini magazine distributed by The Gillette News-Record in collaboration with Wyoming Game and Fish. The magazine is mailed annually to non-residents who draw an antelope license in Campbell County. It offers several news articles regarding the area’s hunting program and encourages use of the Hunter Assistance

Service. Signs directing hunters to the Visitor's Center were placed along Interstate 90 to help hunters find the Service.

### **Recommendations for the 2015 Hunter Assistance Service**

Overall, the 2014 Hunter Assistance Service accomplished the goals set in 2013. Operations ran efficiently and effectively as many sportsmen were greatly benefited by the Service. However, without a temporary employee to assist with contacting landowners, hunters were at a disadvantage this year when trying to find last-minute private land hunting opportunities. The following recommendations are offered to further refine and improve operations:

1. Reinstate the Access Yes grant to allow funding of a temporary position to assist with the Service. Time should be spent by this employee prior to the season contacting landowners to generate the initial hunting lists and re-doing maps as needed. Following the opening of local hunting seasons, time should also be dedicated to data summaries and report preparation. Clearly this project has proven to be of great benefit to the Department since there is no Game and Fish public office in Campbell County. The Visitor's Center may request some form of compensation from the Department in future years now that it is under new management, considering the time spent by permanent staff, use of the facilities, and the savings provided to Department personnel time.
2. Department staffing by local permanent personnel is still needed early in the season to help train temporary and Visitor's Center personnel. The presence of personnel helps greatly with answering hunter questions, as the beginning of the hunting seasons is the most congested time for the Visitor's Center. The addition of a Sheridan WGF D staff member the weekend prior to opening day and over the first week of October is a great benefit and provides faster service to hunters with questions that Visitor's Center staff may not be capable of answering.
3. Continue the sale of BLM and USFS maps at the Visitor's Center. The availability of maps is well-received by hunters, and they consistently comment that they appreciate it each year. Providing maps for sale at the Visitor's Center should be a top priority, so that hunters do not need to leave and return again with their questions.
4. It is recommended that the Point-of-Sale (IPOS) license technology be included as a resource for hunters at the Visitor's Center. Sale of leftover licenses was very popular when it was offered in 2005 at the Visitor's Center, and hunters who used this opportunity in 2005 mentioned that they appreciated the service and would like to see it offered again. Other hunters who were visiting the Service for the first time in 2014 inquired about whether they could purchase leftover licenses at the Visitor's Center, along with their maps and other WGF D hunting documents. Offering improved "one stop shopping" rather than having to redirect hunters to a local license agent would greatly improve the efficiency of Hunter Assistance Service as a whole and would likely be very popular with visiting hunters.
5. The Department should continue to assist the Gillette News-Record with publishing the hunter information newsletter in 2015. These efforts greatly contribute to the effectiveness of the program and give hunters a head start by answering many common questions within the publication.

6. Update the display maps with new BLM maps as the maps become available. New BLM maps for the Campbell County area are in the process of being published and new sets should be available. The new maps will include land ownership changes that are currently marked by hand on display maps. A new display map should be made at least every other year, as older maps become weathered and faded, and land exchanges need to be updated.
7. Disseminate information about the Hunter Assistance Center to landowners as much as possible prior to the 2015 hunting season. It has been noted that many local ranchers were unaware of the service, and it is not possible for the temporary staff of the Visitor's Center to contact all of the 500+ landowners in the region. Using direct letters or newsletters distributed to ranchers by the USDA and NRCS will facilitate communication and information between ranchers and the Department. The result will hopefully be an increase in participation by landowners in the Hunter Assistance Service program.
8. Expand the availability of similar services to the towns of Sundance and Buffalo. Work with PLPW staff to set up large maps and public displays at accessible points in both Sundance and Buffalo. Staffing may not be immediately possible at these locations, but many questions can be answered with public displays that hunters can visit on their own. Consider working with USFS - Thunder Basin National Grasslands personnel to revamp the kiosk at Weston. The kiosk could be redone prior to hunting seasons to provide additional hunting information to those that hunt public lands in the Weston/Spring Creek area.



# **APPENDIX F**

## **HERD UNIT AND HUNT AREA MAPS**

**Pronghorn Herd Units and Hunt Areas**

**Mule Deer Herd Units and Hunt Areas**

**White-tailed Deer Herd Units and Hunt Areas**

**Elk Herd Units and Hunt Areas**

**Moose Herd Units and Hunt Areas**

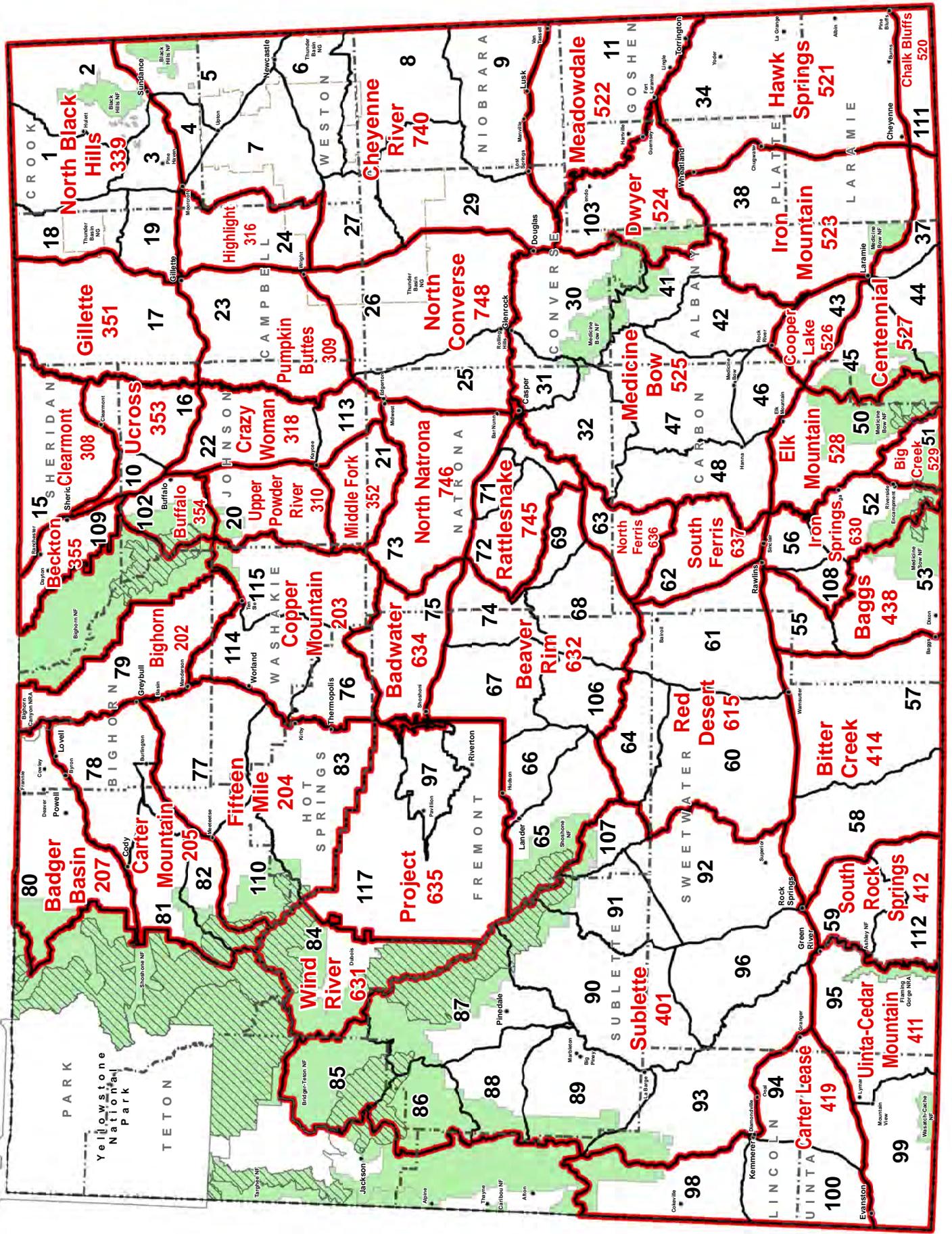
**2014**

**Job Completion Report**

**Sheridan Region**

**Wyoming Game & Fish Department**

# Antelope Hunt Areas and Herd Units - 2014



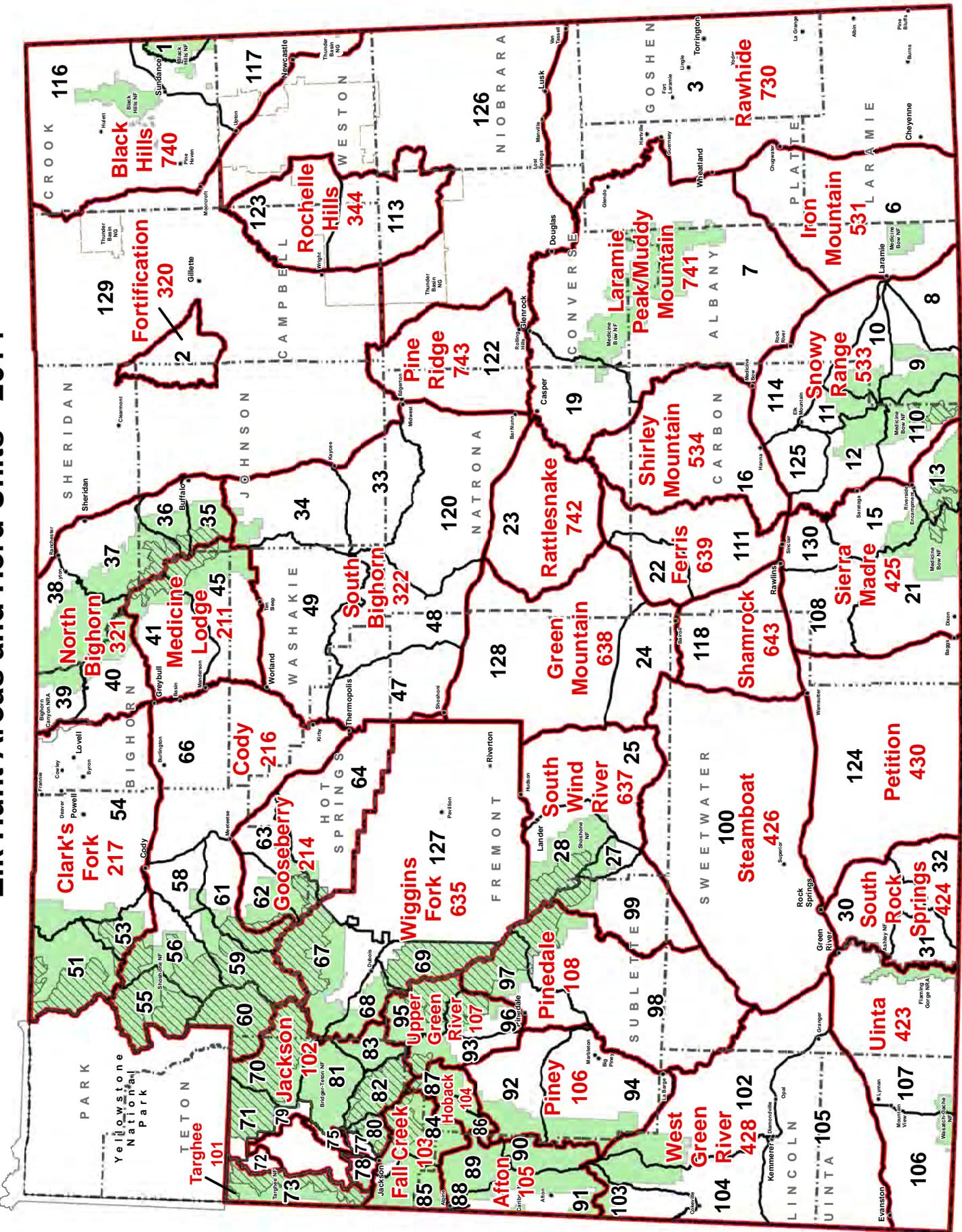
Note: Herd Units are represented by a thick red line and red font

4/29/2014





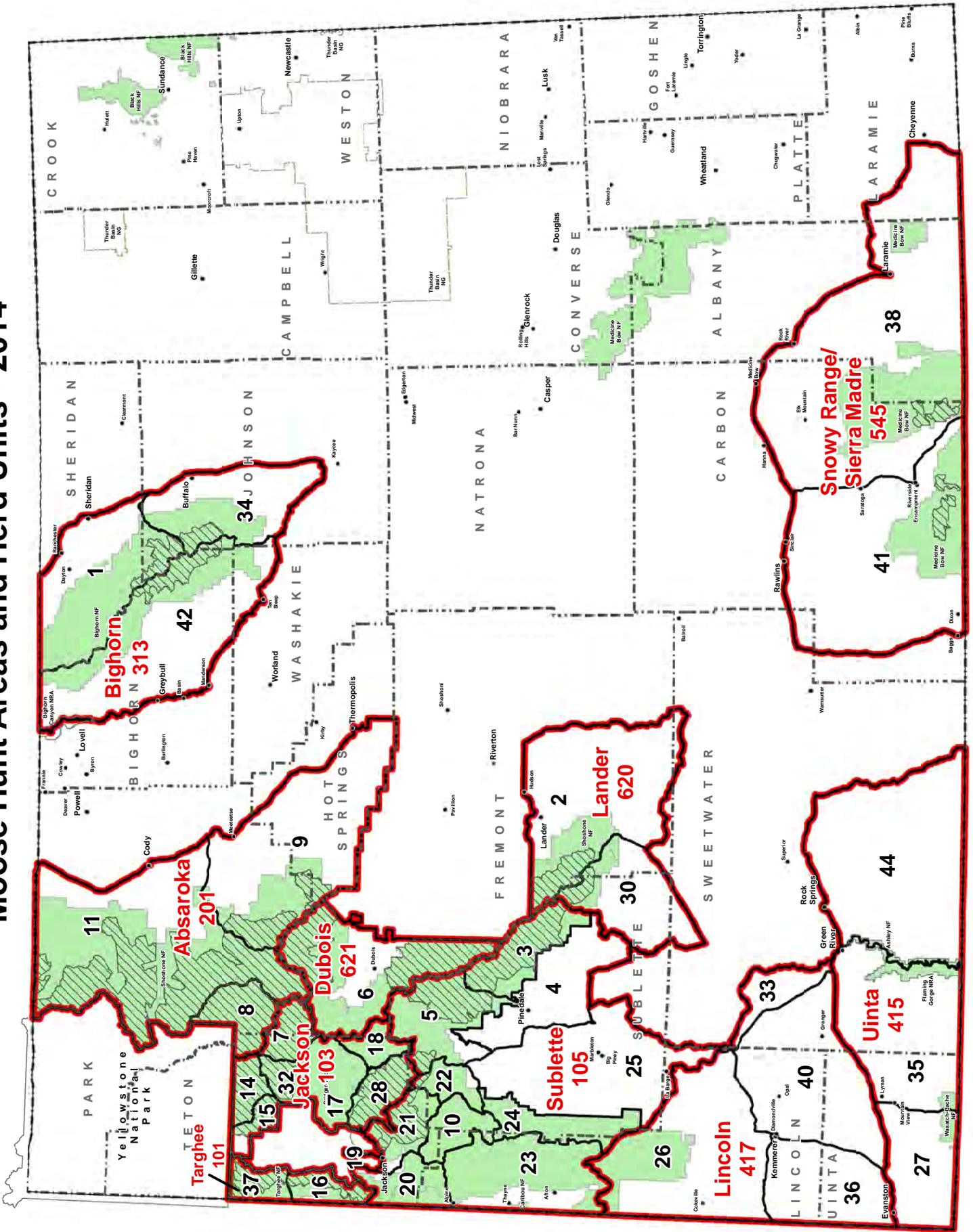
# Elk Hunt Areas and Herd Units - 2014



Note: Herd Units are represented by a thick red line and red font

4/29/2014

# Moose Hunt Areas and Herd Units - 2014



Note: Herd Units are represented by a thick red line and red font

4/29/2014