2015 - JCR Evaluation Form

SPECIES: Elk
HERD: EL531 - IRON MOUNTAIN
HUNT AREAS: 6
PREPARED BY: LEE KNOX

<table>
<thead>
<tr>
<th></th>
<th>2010 - 2014 Average</th>
<th>2015</th>
<th>2016 Proposed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Population:</td>
<td>4,099</td>
<td>4,597</td>
<td>4,200</td>
</tr>
<tr>
<td>Harvest:</td>
<td>824</td>
<td>726</td>
<td>730</td>
</tr>
<tr>
<td>Hunters:</td>
<td>1,605</td>
<td>1,638</td>
<td>1,600</td>
</tr>
<tr>
<td>Hunter Success:</td>
<td>51%</td>
<td>44%</td>
<td>46 %</td>
</tr>
<tr>
<td>Active Licenses:</td>
<td>1,671</td>
<td>1,676</td>
<td>1,600</td>
</tr>
<tr>
<td>Active License Success:</td>
<td>49%</td>
<td>43%</td>
<td>46 %</td>
</tr>
<tr>
<td>Recreation Days:</td>
<td>10,398</td>
<td>8,639</td>
<td>8,500</td>
</tr>
<tr>
<td>Days Per Animal:</td>
<td>12.6</td>
<td>11.9</td>
<td>11.6</td>
</tr>
<tr>
<td>Males per 100 Females</td>
<td>23</td>
<td>48</td>
<td></td>
</tr>
<tr>
<td>Juveniles per 100 Females</td>
<td>49</td>
<td>58</td>
<td></td>
</tr>
</tbody>
</table>

Population Objective (± 20%) : 1800 (1440 - 2160)
Management Strategy: Recreational
Percent population is above (+) or below (-) objective: 155%
Number of years population has been + or - objective in recent trend: 20
Model Date: 02/18/2016

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

<table>
<thead>
<tr>
<th></th>
<th>JCR Year</th>
<th>Proposed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Females ≥ 1 year old:</td>
<td>20%</td>
<td>20%</td>
</tr>
<tr>
<td>Males ≥ 1 year old:</td>
<td>30%</td>
<td>30%</td>
</tr>
<tr>
<td>Juveniles (&lt; 1 year old):</td>
<td>4.5%</td>
<td>4.5%</td>
</tr>
<tr>
<td>Total:</td>
<td>25%</td>
<td>25%</td>
</tr>
</tbody>
</table>

Proposed change in post-season population: -15%
Active Licenses

Days per Animal Harvested

Postseason Animals per 100 Females
<table>
<thead>
<tr>
<th>Year</th>
<th>Post Pop</th>
<th>MALES</th>
<th>FEMALES</th>
<th>JUVENILES</th>
<th>Males to 100 Females</th>
<th>Young to 100 Adult</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Ylg</td>
<td>Adult</td>
<td>Total</td>
<td>Conf</td>
<td>Fem</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Int</td>
<td></td>
</tr>
<tr>
<td>2010</td>
<td>4,932</td>
<td>53</td>
<td>26</td>
<td>79</td>
<td>8%</td>
<td>9</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>604</td>
<td>4</td>
</tr>
<tr>
<td>2011</td>
<td>5,059</td>
<td>20</td>
<td>16</td>
<td>36</td>
<td>9%</td>
<td>9</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>235</td>
<td>4</td>
</tr>
<tr>
<td>2012</td>
<td>3,856</td>
<td>52</td>
<td>46</td>
<td>98</td>
<td>26%</td>
<td>27</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>196</td>
<td>23</td>
</tr>
<tr>
<td>2013</td>
<td>3,522</td>
<td>75</td>
<td>86</td>
<td>161</td>
<td>16%</td>
<td>13</td>
</tr>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>557</td>
<td>23</td>
</tr>
<tr>
<td>2014</td>
<td>3,125</td>
<td>44</td>
<td>67</td>
<td>111</td>
<td>13%</td>
<td>9</td>
</tr>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>499</td>
<td>23</td>
</tr>
<tr>
<td>2015</td>
<td>4,597</td>
<td>152</td>
<td>142</td>
<td>294</td>
<td>23%</td>
<td>25</td>
</tr>
<tr>
<td></td>
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<td></td>
<td></td>
<td>616</td>
<td>49</td>
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2016 HUNTING SEASONS
IRON MOUNTAIN ELK (EL531)

<table>
<thead>
<tr>
<th>Hunt Area</th>
<th>Type</th>
<th>Season Dates</th>
<th>Quota</th>
<th>License</th>
<th>Limitations</th>
</tr>
</thead>
<tbody>
<tr>
<td>6</td>
<td>Oct. 1</td>
<td>Oct. 31</td>
<td></td>
<td>General</td>
<td>Any elk valid off national forest</td>
</tr>
<tr>
<td>6</td>
<td>Nov. 1</td>
<td>Nov. 30</td>
<td></td>
<td>General</td>
<td>Antlerless elk valid off national forest</td>
</tr>
<tr>
<td>1</td>
<td>Oct. 15</td>
<td>Oct. 31</td>
<td>75</td>
<td>Limited quota</td>
<td>Any elk</td>
</tr>
<tr>
<td>1</td>
<td>Nov. 1</td>
<td>Jan. 31</td>
<td></td>
<td>Limited quota</td>
<td>Unused Area 6 Type 1 licenses valid for antlerless elk</td>
</tr>
<tr>
<td>4</td>
<td>Nov. 1</td>
<td>Jan. 31</td>
<td>100</td>
<td>Limited Quota</td>
<td>Antlerless elk</td>
</tr>
<tr>
<td>6</td>
<td>Aug. 15</td>
<td>Jan. 31</td>
<td>1100</td>
<td>Limited Quota</td>
<td>Cow or calf valid off national forest</td>
</tr>
</tbody>
</table>

Special Archery Season
Hunt Areas

<table>
<thead>
<tr>
<th>Type</th>
<th>Season Dates</th>
<th>Limitations</th>
</tr>
</thead>
<tbody>
<tr>
<td>6</td>
<td>Sep. 1</td>
<td>Sep. 30</td>
</tr>
<tr>
<td>1,4</td>
<td>Sep. 1</td>
<td>Sep. 30</td>
</tr>
<tr>
<td>6</td>
<td>Sep. 1</td>
<td>Sep. 30</td>
</tr>
</tbody>
</table>

MANAGEMENT EVALUATION

Current Postseason Population Management Objective: 1,800 (1,440-2,160)
Management Strategy: Recreational
2015 Postseason population Estimate: ~ 4,600
2016 Proposed Postseason Population Estimate: 4,200
2015 Hunter Satisfaction: 65% Satisfied, 18% Neutral, 17% Dissatisfied

The management objective for the Iron Mountain Elk herd unit is a post-season population objective of 1,800 elk. The management strategy is recreational management which requires maintaining a post hunt bull ratio of 15 to 29:100 cows. The objective and management strategy were last revised in 2013.

Herd Unit Issues
The Iron Mountain Elk herd unit includes hunt area 6 (combined hunt areas 5 and 6 for 2014 season) which is composed of mostly private lands except for the Pole Mountain National Forest
segment which is managed under a limited quota license to maintain hunt quality. Urban sprawl and nontraditional landowners are increasing in the herd unit, as well as growing stone quarries in parts of Rogers canyon as well as between I-80 and Wyoming Highway 287. This herd unit continues to be a concern with landowners due to large wintering herds of elk sometimes exceeding 800 elk. At the same time most all of the landowners in the herd unit outfit bull elk hunts to some degree on their property, and bull quality and quantity are a concern. The 2015 post-season population estimate was 4,600 with the population trending downward from a high of 6,200 in 2011.

Weather
Weather in this herd unit was relatively normal during the past bio-year. Precipitation amounts were above average at all elevations throughout southeast Wyoming. No significant prolonged periods of extreme heat or cold temperatures were observed, or extreme or prolonged periods of snow loading in lower elevation winter ranges. Timing of precipitation and amounts received during key growth periods for cool season grasses and preferred transitional range and winter range shrub species was excellent. While early season growing conditions were optimal, late summer and fall precipitation were lacking. Weather patterns most likely had a positive influence on all big game species. For specific meteorological information for the Iron Mountain herd unit the reviewer is referred to the following link: http://www.ncdc.noaa.gov/cag/.

Habitat
Forage availability continued to improve in 2015 with an increase in amounts of precipitation received and the timeliness of when it was received. Precipitation received in April, May, and early June resulted in excellent growth of cool season grasses and forbs, and above average leader growth on preferred key shrubs. While early season growing conditions were optimal, late summer and fall precipitation were lacking. A significant die-off of sagebrush and antelope bitterbrush did occur in portions of the Laramie Range due to a rapid freeze event that occurred in November 2014. The die-off was widespread, from the Front Range of Colorado to the Eastern Plains of Montana. The severity of the die-off is unknown at this time, and whether or not the shrubs will recover. Affected shrubs did not show any significant signs of re-sprouting in summer 2015.

One prescribed burn was completed on the Iron Mountain Ranch in late March 2015, impacting 2,500 acres of mixed mountain shrub habitats. Initial herbaceous and woody plant response following treatment was excellent, as expected with the above average precipitation that fell in spring 2015. Previous prescribed burns completed within the Iron Mountain herd unit continue to outperform untreated habitats, particularly in shrub annual leader production. Cheatgrass continues to be a major threat to native rangelands and big game ranges, particularly at all elevations below 6,500’. Its presence ties the hands of habitat managers limiting habitat enhancement options, and may result in reduced carrying capacities of rangelands if it is the predominant specie.

The limited number of habitat transects that have been established throughout the Laramie Region have not provided sufficient data to make reliable assumptions of habitat quantity or quality and consequently heavily influence population management for any particular big game species.
In summer 2015, population biologists and habitat managers began working together to modify habitat monitoring techniques utilized statewide and to improve overall consistency among the regions. Identification of key herd units per big game species, assessing habitats through landscape scale inventory methods versus monitoring a handful of permanent monitoring sites, assessing habitats in all seasonal ranges (summer, transition, winter), and development of correlations to amounts of and timing of precipitation will help improve the overall value of data collected and result in our abilities to more strongly correlate management decisions for populations based off habitat conditions.

Field Data
A total of 1,300 elk were classified, exceeding the estimated classification objective of 700. Classification flights occurred after extreme cold and heavy snows which caused elk to be heavily concentrated in the northeast corner of the herd unit. Bull ratios are high at 48:100 cows with half being yearlings. Considering the conditions during the flight we believe few bull or cow groups were missed and the total bull ratio well represents what is actually on the ground. This herd has been very productive and continues to be so with 58 calves: 100 cows. After changing the license issuance from limited quota to general, hunter numbers have been on a steady decline from a high of 2,480 hunters in 2012 to 1,600 in 2015. We may now be seeing hunter numbers stabilizing with 2015 seeing similar numbers to 2014 at 1,600 hunters.

Harvest Data
Elk harvest appears to be stabilizing after changing to a general season strategy in 2012. Elk harvest in 2015 is similar to the past two years at 700 elk. More landowners are taking advantage of the liberal cow elk season structure and harvest levels in the herd are being maintained at an appropriate level to decrease the population towards objective. General license hunters were most successful in September and October. Only 8% of the elk harvested on a general tag were harvested after November (Figure 1.).

![Figure 1. The Percent of harvest by general licenses per month in the Iron Mountain Herd Unit.](image)

Both the type 1 and type 4 licenses remain very popular with the public. For the type 1 license drawing odds are less than 10% for residents and nonresidents need 5 or more preference points.
Hunter success has been declining on the type 1 license from 65% in 2012 to 45% in 2015. The type 4 licenses have always been a more difficult hunt but success declined from 35% in 2014 to 13% in 2015. Harvest was poor with only 11 elk harvested on the type 4 licenses in 2015.

**Population**
This is the third year that we have collected adequate classification data for the model to not crash. The constant juvenile and adult survival model had an AIC score of 468 and a best FIT of 478. It did not have the lowest AIC score but considering the lack of data the more complicated models are not appropriate for this herd unit. This model predicts the population declining from a high of 6,800 in 2011 to the current population estimate of 4,600 in 2015. This model has a tendency to jump around each time an additional year of data is added and although the population trend may be accurate, the population estimate is most likely not. This Model is ranked Poor for a variety of reasons including: little data available; ratio data, if available, considered highly biased because of poor sample sizes or an inability to survey the entire area; herd unit closure issues apparent; results not biologically defensible.

**Management Summary**
The 2015 season structure went well and maintained the 2014 harvest of 700 elk. We will remain status quo for license issuance in the 2016 season. If we harvest a minimum of 650 elk, we will continue to reduce the population towards the objective. There are concerns from Department personnel and landowners of increased poaching and trespassing cases due to hunt area 6 being one of the last general seasons to close. After October, hunt area 6 attracts hunters from around the state that still have a general license to fill, and frankly we do not have any access or landowners to send them to. As shown in figure 1, very few elk are harvested on a general license after November. We hired a Hunt Management Coordinator (HMC) for Iron Mountain in 2015. Through no fault of his own, the HMC was only able to get a very limited amount of private access for hunters, and harvest was minimal. Considering the ample number of type 6 licenses that provide opportunity through January 31st, we will end the general license on November 30th.
**2015 - JCR Evaluation Form**

**SPECIES:** Elk  
**PERIOD:** 6/1/2015 - 5/31/2016  
**HERD:** EL533 - SNOWY RANGE  
**HUNT AREAS:** 8-12, 110, 114, 125  
**PREPARED BY:** WILL SCHULTZ

<table>
<thead>
<tr>
<th>2010 - 2014 Average</th>
<th>2015</th>
<th>2016 Proposed</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Population:</strong></td>
<td>8,462</td>
<td>7,402</td>
</tr>
<tr>
<td><strong>Harvest:</strong></td>
<td>1,892</td>
<td>1,888</td>
</tr>
<tr>
<td><strong>Hunters:</strong></td>
<td>5,800</td>
<td>6,056</td>
</tr>
<tr>
<td><strong>Hunter Success:</strong></td>
<td>33%</td>
<td>31%</td>
</tr>
<tr>
<td><strong>Active Licenses:</strong></td>
<td>6,017</td>
<td>6,328</td>
</tr>
<tr>
<td><strong>Active License Success:</strong></td>
<td>31%</td>
<td>30%</td>
</tr>
<tr>
<td><strong>Recreation Days:</strong></td>
<td>45,387</td>
<td>47,914</td>
</tr>
<tr>
<td><strong>Days Per Animal:</strong></td>
<td>24.0</td>
<td>25.4</td>
</tr>
<tr>
<td><strong>Males per 100 Females</strong></td>
<td>23</td>
<td>21</td>
</tr>
<tr>
<td><strong>Juveniles per 100 Females</strong></td>
<td>45</td>
<td>46</td>
</tr>
</tbody>
</table>

Population Objective (± 20%): 6000 (4800 - 7200)

Management Strategy: Recreational

Percent population is above (+) or below (-) objective: 23%

Number of years population has been + or - objective in recent trend: 23

Model Date: 02/20/2016

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

<table>
<thead>
<tr>
<th>JCR Year</th>
<th>Proposed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Females ≥ 1 year old</td>
<td>17%</td>
</tr>
<tr>
<td>Males ≥ 1 year old</td>
<td>51%</td>
</tr>
<tr>
<td>Juveniles (&lt; 1 year old)</td>
<td>5%</td>
</tr>
<tr>
<td>Total</td>
<td>21%</td>
</tr>
</tbody>
</table>

Proposed change in post-season population: -6% -9%

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**Population Size - Postseason**

![Graph showing population size from 2010 to 2015 with objective line](image)

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## 2010 - 2015 Postseason Classification Summary

for Elk Herd EL533 - SNOWY RANGE

<table>
<thead>
<tr>
<th>Year</th>
<th>Post Pop</th>
<th>Yng</th>
<th>Adult</th>
<th>Total</th>
<th>%</th>
<th>Total</th>
<th>%</th>
<th>Tot Cls Obj</th>
<th>Males to 100 Females</th>
<th>Conf Int</th>
<th>100 Fem</th>
<th>Conf Int</th>
<th>100 Adult</th>
</tr>
</thead>
<tbody>
<tr>
<td>2010</td>
<td>10,000</td>
<td>318</td>
<td>200</td>
<td>518</td>
<td>12%</td>
<td>2,633</td>
<td>60%</td>
<td>1,211</td>
<td>28%</td>
<td>4,362</td>
<td>650</td>
<td>12</td>
<td>8</td>
</tr>
<tr>
<td>2011</td>
<td>9,300</td>
<td>145</td>
<td>109</td>
<td>254</td>
<td>12%</td>
<td>1,308</td>
<td>61%</td>
<td>576</td>
<td>27%</td>
<td>2,138</td>
<td>639</td>
<td>11</td>
<td>8</td>
</tr>
<tr>
<td>2012</td>
<td>8,331</td>
<td>252</td>
<td>218</td>
<td>470</td>
<td>13%</td>
<td>2,181</td>
<td>60%</td>
<td>990</td>
<td>27%</td>
<td>3,641</td>
<td>664</td>
<td>12</td>
<td>10</td>
</tr>
<tr>
<td>2013</td>
<td>6,686</td>
<td>292</td>
<td>456</td>
<td>748</td>
<td>17%</td>
<td>2,539</td>
<td>59%</td>
<td>1,023</td>
<td>24%</td>
<td>4,310</td>
<td>646</td>
<td>12</td>
<td>18</td>
</tr>
<tr>
<td>2014</td>
<td>7,993</td>
<td>259</td>
<td>148</td>
<td>407</td>
<td>14%</td>
<td>1,609</td>
<td>57%</td>
<td>800</td>
<td>28%</td>
<td>2,816</td>
<td>640</td>
<td>16</td>
<td>9</td>
</tr>
<tr>
<td>2015</td>
<td>7,402</td>
<td>206</td>
<td>190</td>
<td>396</td>
<td>13%</td>
<td>1,885</td>
<td>60%</td>
<td>876</td>
<td>28%</td>
<td>3,157</td>
<td>657</td>
<td>11</td>
<td>10</td>
</tr>
</tbody>
</table>
## 2016 HUNTING SEASONS
### SNOWY RANGE ELK (EL533)

<table>
<thead>
<tr>
<th>Hunt Area</th>
<th>Type</th>
<th>Dates of Seasons Opens</th>
<th>Dates of Seasons Closes</th>
<th>Quota</th>
<th>License</th>
<th>Limitations</th>
</tr>
</thead>
<tbody>
<tr>
<td>8</td>
<td>1</td>
<td>Oct. 1</td>
<td>Oct. 31</td>
<td>150</td>
<td>Limited quota</td>
<td>Any elk Valid for any elk west of Sand Creek Road (Albany County Road 34) and antlerless elk east of Sand Creek Road (Albany County Road 34)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Nov. 1</td>
<td>Jan. 31</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td></td>
<td>Aug. 15</td>
<td>Jan. 31</td>
<td>100</td>
<td>Limited quota</td>
<td>Cow or calf</td>
</tr>
<tr>
<td>9</td>
<td></td>
<td>Oct. 15</td>
<td>Oct. 31</td>
<td></td>
<td>General</td>
<td>Any elk</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Aug. 15</td>
<td>Sep. 30</td>
<td>150</td>
<td>Limited quota</td>
<td>Cow or calf valid on private land</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Oct. 1</td>
<td>Dec. 31</td>
<td></td>
<td></td>
<td>Cow or calf</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Jan. 1</td>
<td>Jan. 31</td>
<td></td>
<td></td>
<td>Cow or calf valid off national forest</td>
</tr>
<tr>
<td>10</td>
<td></td>
<td>Oct. 15</td>
<td>Oct. 31</td>
<td></td>
<td>General</td>
<td>Any elk</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Aug. 15</td>
<td>Sep. 30</td>
<td>400</td>
<td>Limited quota</td>
<td>Cow or calf valid on private land</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Oct. 1</td>
<td>Nov. 30</td>
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<td></td>
<td>Cow or calf</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Dec. 1</td>
<td>Jan. 31</td>
<td></td>
<td></td>
<td>Cow or calf valid off national forest</td>
</tr>
<tr>
<td>11</td>
<td>1</td>
<td>Oct. 1</td>
<td>Oct. 31</td>
<td>150</td>
<td>Limited quota</td>
<td>Any elk</td>
</tr>
<tr>
<td></td>
<td>4</td>
<td>Oct. 1</td>
<td>Oct. 31</td>
<td>300</td>
<td>Limited quota</td>
<td>Antlerless elk</td>
</tr>
<tr>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>6</td>
<td>Aug. 15</td>
<td>Jan. 31</td>
<td>50</td>
<td>Limited quota</td>
<td>Cow or calf valid off national forest and off the Wyoming Game and Fish Commission’s Wick Wildlife Habitat Management Area</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Sep. 1</td>
<td>Sep. 30</td>
<td>50</td>
<td>Limited quota</td>
<td>Any elk, archery only</td>
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<tr>
<td>12</td>
<td></td>
<td>Oct. 15</td>
<td>Oct. 31</td>
<td></td>
<td>General</td>
<td>Any elk</td>
</tr>
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<td>Nov. 14</td>
<td>150</td>
<td>Limited quota</td>
<td>Cow or calf</td>
</tr>
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<tr>
<td>12, 13, 15, 110</td>
<td>7</td>
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### Hunt Area

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<td>Limited quota</td>
<td>Any elk</td>
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<td></td>
<td>6</td>
<td>Oct. 1</td>
<td>200</td>
<td>Limited quota</td>
<td>Cow or calf</td>
</tr>
</tbody>
</table>

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<th>License Type</th>
<th>Quota change from 2015</th>
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</thead>
<tbody>
<tr>
<td>Herd Unit Total</td>
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<td>None</td>
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### Management Evaluation

**Current Management Objective:** 6,000 (4,800 – 7,200)

**Management Strategy:** Recreational

**2015 Postseason Population Estimate:** 7,400

**2016 Proposed Postseason Population Estimate:** 6,800

**2015 Hunter Satisfaction:** 62% Satisfied, 20% Neutral, 18% Dissatisfied

Elk in The Snowy Range herd unit are managed toward a numeric objective of 6,000. The population was estimated using a spreadsheet models developed in 2012 and updated in 2014. The herd is managed for recreation opportunity. The objective was last reviewed in 2013.

### Herd Unit Issues

The Snowy Range herd unit covers a large portion of south central Wyoming. Issues here include development in the form of energy, agricultural, residential, invasive and noxious plants, forestry and range management, and travel management in important elk habitat.

### Weather

Weather in this herd unit was relatively normal during the past bio-year. Precipitation amounts were above average at all elevations throughout southeast Wyoming. No significant prolonged periods of extreme heat or cold temperatures were observed; or were extreme or prolonged periods of snow loading in lower elevation winter ranges. Timing of precipitation and amounts received during key growth periods for cool season grasses and preferred transitional range and winter range shrub species was excellent. While early season growing conditions were optimal, late summer and fall precipitation were lacking.
Weather patterns most likely had a positive influence on all big game species. For specific meteorological information for the Snowy Range herd unit the reviewer is referred to the following link: [http://www.ncdc.noaa.gov/cag/](http://www.ncdc.noaa.gov/cag/).

**Habitat**

Habitat conditions continued to improve in 2015 with increased amounts of timely precipitation being received. Precipitation received in April, May, and early June resulted in excellent growth of cool season grasses and forbs, and above average leader growth on preferred key shrubs. While early season growing conditions were optimal, late summer and fall precipitation were lacking. Cheatgrass continued to be a threat to native rangelands; particularly on south facing aspects and in areas of high fire severity associated with the 11,000 acre Squirrel Creek Wildfire of 2012. During habitat assessments conducted during the summer 2015, aspen regeneration in areas burned by wildfire was excellent, and showed little sign of browsing by wildlife or livestock. This may be due to the fact that the areas which recently burned have a high road density and are heavily utilized by motorized recreationists; resulting in displacement of elk from these preferred habitats. The limited number of habitat transects established throughout the Laramie Region have not provided sufficient data to make reliable inferences about habitat quantity or quality.

**Field Data**

In 2015, we classified elk from a helicopter in conjunction with local mule deer classifications. A postseason classification sample of 3,157 elk produced ratios of 21 bulls and 46 calves per 100 cows in this herd unit. Figure 1 illustrates the trend in bull and calf ratios during the past 10 years for the Snowy Range herd unit. High calf ratios continued to provide for an excellent recruitment rate in this herd unit.

**Figure 1. Bull and calf ratios per 100 cows in the Snowy Range elk herd unit, 2006-2015, Wyoming.**
Harvest Data
The 2015 harvest survey data indicated 6,055 active licensed hunters harvested 1,883 elk, which was an 8% decrease from 2014. The total harvest success rate of 31% was a 3% decrease from 2014. Branch antlered bulls accounted for 95% of the male harvest in 2015 and 49% of the overall harvest. The spikes excluded seasons in General season Hunt Areas 9, 10, 12 and 110 did result in lower spike harvest rates in those hunts when compared to previous year’s harvest rates. The proportion of spikes in the male harvest for the entire herd unit declined from 11% in 2014 to 5% in 2015. Antlerless elk accounted for 51% of the total 2015 elk harvest. Harvest rates, days per harvest, and harvest success rates under the current liberal hunting season structure continued to be considered acceptable. The addition of 50 Type 9 archery licenses in Hunt Area 11 in 2015 did not appear to significantly increase archery harvest rate in this area. In 2014, 11% of the overall elk harvest was attributed to archery; while in 2015, 15% of the overall elk harvest was attributed to archery.

Population
In 2015, we continued to use the CJ,CA spreadsheet model to simulate Snowy Range herd unit population dynamics. The other 2015 models in the spreadsheet model suite had either ceased to function due to predicting bull harvest exceeding the number estimated to be available; or were not biologically realistic (i.e. 50,000 elk in 1993). Without other information such as an independent abundance estimate or historical survival data to incorporate into the model, accuracy of estimates will continue to be unknown. We rated this model as poor, and biologically defensible in our evaluation. This rating was based on criteria identified in the user’s guide for the WGFD spreadsheet model (Morrison 2012).

The 2015 postseason population estimate for the Snowy Range herd unit was 7,400 elk. The change in model types in 2014, and the relatively high 2014 calf ratio, increased the postseason population estimates by approximately 2,000 elk over what we were predicting prior to 2014. A decreasing trend in the annual estimate continued with CJ,CA model and was considered to be consistent with the observations by field managers. We considered the 2015 postseason population estimate produced by the CJ,CA spreadsheet model to be plausible.

Management Summary
The hunting seasons in the Snowy Range Herd Unit continued to provide opportunities to reduce the overall elk population. Elk numbers appear to be declining towards the management objective and we may need to consider reducing antlerless harvest rates in the not so distant future. The spikes excluded limitations were removed from all General season limitations for the 2016 hunting season.
Literature Cited
Wyoming Cooperative Fish and Wildlife Research Unit, University of Wyoming,
Laramie. USA. 41 pp.

Bibliography of Herd Specific Studies
2001. Wyoming Cooperative Fish and Wildlife Research Unit, University of
### 2015 - JCR Evaluation Form

**SPECIES:** Elk  
**PERIOD:** 6/1/2015 - 5/31/2016  
**HERD:** EL534 - SHIRLEY MOUNTAIN  
**HUNT AREAS:** 16  
**PREPARED BY:** WILL SCHULTZ

<table>
<thead>
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<th>2010 - 2014 Average</th>
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<th>2016 Proposed</th>
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<td>348</td>
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<td>Hunter Success</td>
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<tr>
<td>Males per 100 Females</td>
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<td>Juveniles per 100 Females</td>
<td>42</td>
<td>40</td>
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**Trend Based Objective (± 20%)**  
Management Strategy: Special  
Percent population is above (+) or (-) objective: 120%  
Number of years population has been + or - objective in recent trend: 1

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

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<tr>
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<th>JCR Year</th>
<th>Proposed</th>
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<tr>
<td>Females ≥ 1 year old:</td>
<td>NA%</td>
<td>NA%</td>
</tr>
<tr>
<td>Males ≥ 1 year old:</td>
<td>NA%</td>
<td>NA%</td>
</tr>
<tr>
<td>Juveniles (&lt;1 year old):</td>
<td>NA%</td>
<td>NA%</td>
</tr>
</tbody>
</table>

**EL534 Trend Count**

![Graph showing trend count and objective from 2008-2015](image)

Three Year Trend Count Average: 586
## 2010 - 2015 Postseason Classification Summary

### for Elk Herd EL534 - SHIRLEY MOUNTAIN

<table>
<thead>
<tr>
<th>Year</th>
<th>Post Pop</th>
<th>MALES</th>
<th>FEMALES</th>
<th>JUVENILES</th>
<th>Tot Cls</th>
<th>Males to 100 Females</th>
<th>Young to Post Pop</th>
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<tr>
<td></td>
<td></td>
<td>Males</td>
<td>FEMALES</td>
<td>JUVENILES</td>
<td>Cls Obj</td>
<td>Males to 100 Females</td>
<td>Conf</td>
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<tr>
<td></td>
<td></td>
<td>Ylg</td>
<td>Adult</td>
<td>Total</td>
<td>%</td>
<td>Total</td>
<td>%</td>
</tr>
<tr>
<td>2010</td>
<td>1,400</td>
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<td>91</td>
<td>13%</td>
<td>49</td>
<td>151</td>
<td>22%</td>
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<td>2011</td>
<td>1,200</td>
<td>0</td>
<td>0</td>
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<td>0</td>
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<td>0%</td>
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<tr>
<td>2012</td>
<td>880</td>
<td>32</td>
<td>40</td>
<td>23%</td>
<td>36</td>
<td>53</td>
<td>30%</td>
</tr>
<tr>
<td>2013</td>
<td>1,462</td>
<td>90</td>
<td>142</td>
<td>21%</td>
<td>365</td>
<td>165</td>
<td>25%</td>
</tr>
<tr>
<td>2014</td>
<td>767</td>
<td>47</td>
<td>61</td>
<td>13%</td>
<td>294</td>
<td>127</td>
<td>26%</td>
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<tr>
<td>2015</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0%</td>
<td>0</td>
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2016 HUNTING SEASONS
SHIRLEY MOUNTAIN ELK (EL534)

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<td>Oct. 31</td>
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</tr>
<tr>
<td>1</td>
<td>Dec. 1</td>
<td>Jan. 31</td>
<td></td>
<td></td>
<td>Antlerless elk</td>
</tr>
<tr>
<td>2</td>
<td>Nov. 1</td>
<td>Nov. 30</td>
<td>50</td>
<td>Limited quota</td>
<td>Any elk</td>
</tr>
<tr>
<td>2</td>
<td>Dec. 1</td>
<td>Jan. 31</td>
<td></td>
<td>Antlerless elk</td>
<td></td>
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<tr>
<td>4</td>
<td>Oct. 1</td>
<td>Jan. 31</td>
<td>300</td>
<td>Limited quota</td>
<td>Antlerless elk</td>
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<tr>
<td>6</td>
<td>Aug. 15</td>
<td>Sep. 30</td>
<td>200</td>
<td>Limited quota</td>
<td>Cow or calf valid on private land</td>
</tr>
<tr>
<td>6</td>
<td>Oct. 1</td>
<td>Jan. 31</td>
<td></td>
<td>Cow or calf</td>
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</tr>
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<td>Archery</td>
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<td>Refer to license type and limitations in Section 3 of Chapter 7</td>
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<td>Herd Unit Total</td>
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Management Evaluation
Current Mid-Winter Trend Count Management Objective: 800 (640-960)
Management Strategy: Special
2015 Trend Count: 1,759
Most Recent 3-year Running Average Trend Count: Not available until 2017
2015 Hunter Satisfaction: 76% Satisfied, 11% Neutral, 13% Dissatisfied

Elk in the Shirley Mountain herd unit are managed toward a numeric objective of 800. The management strategy was changed in 2015 from recreational management to special management. The management objective was reviewed in 2015 and changed from a postseason population objective of 800 elk to a mid-winter trend count of 800 elk.

Herd Unit Issues
Wind energy developments are a relatively new land use in this herd unit. There are currently 2 wind farms in this herd unit and there is interest in developing more wind farms. Our ability to manage elk numbers through harvest is difficult because a large portion of the elk habitat in this herd unit is owned by one landowner who provides a very limited amount of access. Elk damage in this herd unit is minimal. Interchange of elk with adjacent herd units may compromise the closed population assumption for this herd unit. Annual population monitoring efforts and results have been highly variable.
Weather
Weather in this herd unit was relatively normal during the past bio-year. Precipitation amounts were average, to slightly above average at all elevations throughout the herd unit. No significant prolonged periods of extreme heat or cold temperatures were observed or. The timing of precipitation and amounts received during key growth periods for cool season grasses and preferred transitional range and winter range shrub species was excellent. Weather patterns most likely had a positive influence on elk. Mild fall temperatures and lack of persistent snow allowed elk to stay longer in spring, summer, and fall ranges providing additional relief for winter ranges that have historically been over utilized. Snow accumulation began mid December and persisted in lower elevation winter ranges through February. For specific meteorological information for the Shirley Mountain herd unit the reviewer is referred to: http://www.ncdc.noaa.gov/cag/

Habitat
Positive trends in habitat conditions were observed in bio-year 2015 due to timely and adequate amounts of precipitation received in this herd unit. The limited number of habitat transects that have been established within this herd unit do not provide sufficient data to make reliable inferences about habitat quantity or quality. The vast majority of shrub habitats in this herd unit are in need of treatments which would result in improved nutritive content and increased production for shrubs.

Field Data
Postseason sex and age classifications were conducted in conjunction with a mid-winter trend survey in March of 2016. The results were a total of 45 bull and 40 calves per 100 cows, from a sample of 1,759 elk. Figure 1 illustrates how the 2015 postseason ratios compared to previous classification results during the past 10-years. In previous years, the collection of classification data varied annually in methodology, primarily due to no dedicated survey flight budget for this herd. With the change in management objective type from a postseason population objective, to a mid-winter trend count objective, a dedicated budget for helicopter surveys has been established. This should result in more consistent sampling for sex and age data collection.
Harvest Data
Preliminary elk harvest survey data indicated 620 active licensed hunters harvested 348 elk in 2015, with an overall success rate of 56%. 2015 had the fifth greatest number of elk harvested and the second greatest number of active licensed hunters ever recorded. The 2015 harvest success decreased 2% from 2014 harvest. 2014 bull harvest (n=133) was a 1% decrease from 2014. Antlerless harvest (n=217) decreased 13% in 2015.

Population
In 2015, we reviewed the management objective and converted from a population management objective of 800 elk postseason, to a mid-winter trend count objective of 800 elk postseason (Appendix I). The spreadsheet model which was previously used to develop the annual population estimate for elk in this herd unit did not function adequately enough to provide managers with a reliable estimate. This was the primary reason for changing from a population based management objective to a mid-winter trend count objective. Maintaining sustainable numbers of elk in the Shirley Mountain herd unit, while also maintaining bulls ratios within the special management parameters, is the ultimate management objective. Improving our monitoring techniques is keystone to insuring we are meeting these management objectives. Replacing the spreadsheet model derived population estimate with the mid-winter trend count as our management benchmark will provide for a more accurate assessment of annual elk numbers in the is herd unit.
A mid-winter trend count survey was completed in March of 2016 (Figure 2). A total of 1,759 elk were observed in the herd unit. This is a significant increase in the survey sample size when compared to previous helicopter surveys, covering relatively the same area in the herd unit. In 2010 we observed 691 elk and in 2013 we observed 672 elk during helicopter classification surveys. Two (2) large groups of elk (n=255 and n=535) were observed in the northeast portion of the herd unit. These 2 groups were suspected to have migrated into the Shirley Mountain herd unit from the adjacent Laramie Peak herd unit.

Figure 2. 2015 Mid-winter trend count and helicopter coverage and observations in the Shirley Mountain elk herd unit, Wyoming.
**Management Summary**
The 2016 hunting season recommendations were prescribed with the continued objectives of maintaining bull ratios within the special management parameters and maintaining approximately 800 elk postseason. The December and January seasons for the Beer Mug Mountain Hunter Management Area were discontinued at the request of the landowners. We retained the same number of licenses for the 2016 hunting season as were allocated in the previous 2 hunting seasons. Allowing Type 1 and Type 2 hunters to hunt for antlerless elk in December and January will assist in maintaining a sustainable population level.

**Literature Cited**
None

**Bibliography of Herd Specific Studies**
None
The Shirley Mountain elk herd unit consists of elk Hunt Area 16, and generally lies north of U. S. Highway 30, west of Wyoming Highway 487 and the Little Medicine Bow River, and south and east of the North Platte River, in south-central Wyoming (Figure 1). The herd unit contains the Shirley, Chalk, Bennett (Seminoe), Freezeout, and Pedro Mountains. Elevation ranges from approximately 1,798 meters to over 2,438 meters above sea level. Habitats include montane forests (primarily lodgepole pine), aspen, mountain shrub, sagebrush-grasslands, grasslands, riparian, agricultural lands, and reclaimed coal mines. Topographic relief can be dramatic and can offer quality hiding or escape terrain for elk.

Figure 1. Map of the Shirley Mountain elk herd unit, Hunt Area 16, located in south-central Wyoming.
The Shirley Mountain Herd Unit encompasses 4,548 km$^2$ of occupied elk habitat. Land ownership consists of 55% mixed federal lands, primarily Bureau of Land Management, 35% private ownership, and 10% Wyoming Office of State Land and Investments land. The southern half of the herd unit is mostly a checkerboard of private, state, and BLM lands as a result of land grants to railroads in the 19th century. The northern half contains more single owner blocks of land with large areas of accessible public land. In recent years, one ranch has acquired a substantial amount of private land in and around the Shirley Mountains, and it controls access to a substantial amount of private and public elk habitat.

**CURRENT POPULATION OBJECTIVE REVIEW**

Wyoming Game and Fish Department (WGFD) traditionally has used postseason population objectives as a guide for elk management at the herd unit level. The postseason population objective is the desired number of elk remaining in the herd unit after the annual hunting season has been completed. Generally, if the population estimate is above the population objective, WGFD will propose changes to the herd unit’s next hunting seasons which will increase harvest and reduce the number of elk toward the population objective. Conversely, if the population estimate is below the population objective, WGFD will propose changes to the herd unit’s next hunting seasons which will decrease harvest and increase the number of elk toward the population objective.

In 1978, WGFD adopted the first postseason population objective of 800 (±20%) elk for the Shirley Mountain herd unit. Subsequently, the objective was reviewed in 1997 and retained at 800 (±20%) elk. The Shirley Mountain herd unit population objective of 800 (±20%) elk has not been reviewed since 1997.

Computer based population models have been used by WGFD to simulate elk population dynamics since the mid 1980s. These models use annual harvest and postseason age/sex classification survey data in conjunction with standardized parameters for population indices such as reproduction, survival, etc. to simulate the dynamics for the population. Annual population estimates from the model are then compared to the population objective to determine the appropriate management direction and harvest prescription. Shirley Mountain herd unit hunter-harvest survey sample sizes have been adequate (80% confidence interval) for use in the population model. However, postseason elk sex and age classification survey sample sizes have been less than adequate and may be a source of bias in the herd unit’s population estimates. This has been an issue when the surveys were completed from the ground. Elk can be difficult to locate and accurately survey postseason from the ground in this herd unit due to inaccessibility caused by winter weather and topography. Helicopters have been employed sporadically in recent years to conduct the postseason classification surveys unit due to flight budget prioritization but these surveys produced adequate sample sizes. Annual population estimates for the Shirley Mountain herd unit are currently produced using a computer-based, spreadsheet population model adopted by WGFD in 2012 (Morrison 2012). This spreadsheet model currently used WGFD may not accurately simulate elk population dynamics, particularly with relatively smaller populations (Andrew Holland, Colorado Division of Parks & Wildlife, personal communication).
The 2014 postseason population estimate from the spreadsheet model was 703 elk (Figure 2). The 2014 estimate was considered to be biologically plausible, despite the limitations of the current spreadsheet model described earlier in this section. However, the historic population levels calculated by the model, along with the current precipitously decreasing trajectory do not appear to be a reasonable representation of the elk population dynamics for this herd unit.

Figure 2. 1993-2014 Shirley Mountain herd unit postseason elk population estimates, Wyoming.

Another factor which has made modeling this elk population difficult has been interchange of elk with adjacent herd units. Although the exact rate of interchange is unknown, interchange has been documented anecdotally by radio-collared elk. By WGFD definition, a big game herd unit assumes the interchange rate to be less than 10% of the estimated population. Although the rate of actual interchange for the Shirley Mountain herd unit is unknown, it is speculated it may violate the 10% threshold.

**CURRENT MANAGEMENT STRATEGY**

Shirley Mountain herd unit is entirely contained in elk Hunt Area 16 and is managed under the recreational management strategy. This strategy directs managers to optimize recreational opportunity, while managing harvest rates to maintain 15-29 bulls/100 cows postseason in the herd unit. However, since 2006, bull ratios in this herd unit have exceeded the parameters for recreational management (Figure 3). This is due to a lack of consistent public hunting access in areas inhabited by bulls during the hunting season. Currently, elk hunting in this herd unit is
permitted by a limited quota elk license. In recent years, WGFD has recommended liberal seasons for this herd unit with extended season lengths and additional cow or calf licenses in an attempt to maintain or decrease the numbers of elk in this herd unit.

Figure 3. 1990-2013 Shirley Mountain elk herd unit postseason bulls/100 cows ratio, Wyoming.

**RECOMMENDED HERD UNIT OBJECTIVE AND MANAGEMENT STRATEGY**

WGFD recommends the postseason population objective of 800 (±20%) elk, derived from the spreadsheet model be converted to a mid-winter trend count objective of 800 (±20%) elk. This type of management objective would provide a quantifiable population goal yet eliminate issues associated with developing annual spreadsheet model estimates for this herd unit. This management objective is considered both biologically achievable, and sustainable.

WGFD also recommend converting from a recreational management strategy to the special management strategy in the Shirley Mountain elk herd unit. Adopting the special management strategy will align our ability to effectively manage bull ratios through harvest with hunter access to bull elk in this herd unit. WGFD believes the mid-winter trend count and a special management strategy to be realistic objectives to manage elk in this herd unit towards.

**LANDOWNER AND PUBLIC INVOLVEMENT**

WGFD made a concerted effort to provide stakeholders with an opportunity to be involved in the review of the Shirley Mountain elk herd unit population objective, and to provide comment on
the recommendations. Elk are a species of great concern for many of the stakeholders who participated in the review process.

**Landowner Involvement**
In February of 2015, a letter describing the objective review process and a survey were sent to all landowners (n=67) who owned at least 160 acres in the Shirley Mountain herd unit (ATTACHMENT A). WGFD received 25 survey responses from landowners for a return rate of 37%. Of the 21 landowners who responded to Question 1 about how satisfied they were with current elk numbers, 62% indicated they were somewhat satisfied or very satisfied with the current elk population, and 38% were somewhat dissatisfied or very dissatisfied with the current elk population (ATTACHMENT B). Most landowners who were dissatisfied were so because they thought there were too many elk in the herd unit. When asked what landowners thought about the current objective of 800 (±20%) elk in Question 3, 10% of the 21 landowners who responded indicated the objective needed to be increased, 14% thought it should be decreased, and 76% percent thought the current objective was acceptable. The herd unit objective was also reviewed at the Leo area landowner meeting. Comments from this meeting were similar to the landowner survey responses received by WGFD.

**Public Involvement**
In January of 2015, population objective review meetings were held in conjunction with post-season public information gathering meetings (PIGM) in Cheyenne, Hanna, and Laramie. We received only one (1) written comment on the Shirley Mountain elk objective review (ATTACHMENT C).

In March of 2015, population objective recommendations were presented in conjunction with season-setting public information gathering meetings in Casper, Cheyenne, Laramie, Saratoga, and Wheatland. These meetings were attended by a total of 75 people. We received 7 written comments on the Shirley Mountain elk objective recommendation (ATTACHMENT D). All 7 (100%) written comments supported the recommendation.

In summary, most landowners and sportsmen would like to see about the same or less elk than what is currently in the herd unit. All of the written comments WGFD received at the March PIGMs were in support of the recommendation to convert the management objective from a postseason management objective of 800 (±20%) elk to a mid-winter trend count objective of 800 (±20%) elk. These written comments also supported the recommendation to change from a recreational management strategy (15-29 bulls/100 cows postseason) to a special management strategy (30-40 bulls/100 cows postseason) in the Shirley Mountain elk herd unit.

**LITERATURE CITED**
20 February 2015

Dear Landowner,

The Wyoming Game and Fish Department (Department) is seeking your assistance in the future management of big game wildlife in your area. During the spring of 2015, the Department will review the herd unit management objectives for several big game herd units including the Shirley Mountain mule deer and Shirley Mountain elk herd units. Enclosed in this letter you will find a short survey for the herd unit your property is located within and postage-paid return envelope. Please complete the survey questions, provide additional comments if you desire, and mail the survey in the enclosed return envelope.

The herd unit management objective is the “goal” which the Department manages big game wildlife towards. For most big game herd units in Wyoming, the Department manages big game wildlife towards a numeric management objective, usually identified as a postseason population estimate.

Many of Wyoming’s big game wildlife rely on habitat located on private lands. Therefore, landowner opinions on herd unit management objectives are important to Department. The comments we receive from your completed surveys will be used in part to formulate Department recommendations for the future herd unit management objectives. Changes in the herd unit management objective could result in increasing harvest opportunities to decrease the number of big game animals, or conversely, changes could result in reducing harvest opportunities in order to increase the number of big game animals. For planning purposes, the Department would like to identify management objectives which are considered biologically achievable within the next five years.

Thank you for taking the time to share your thoughts and opinions with us. If you have any questions please contact Will Schultz at 307-326-3020. We look forward to receiving your survey and working with you on the future management of Wyoming’s Wildlife.

Sincerely,

Will Schultz
Saratoga Wildlife Biologist

WS/ws
1. How satisfied are you with the current Shirley Mountain elk population:
   - [ ] Very Satisfied
   - [ ] Somewhat Satisfied
   - [ ] Somewhat Dissatisfied
   - [ ] Very Dissatisfied

2. Please indicate why you selected the response you did for question 1.
   - [ ] There are too many elk in the population
   - [ ] There is the right amount of elk in the population
   - [ ] There are too few elk in the population
   - [ ] Other ________________________________

3. What do you think about the current post-season population objective of 800 (640-960) elk?
   - [ ] Current population objective needs to increase
   - [ ] Current population objective needs to decrease
   - [ ] Current population objective is acceptable

4. If you have additional comments, please share them in the space below:
   ________________________________________________________________
   ________________________________________________________________
   ________________________________________________________________
   ________________________________________________________________
   ________________________________________________________________
   ________________________________________________________________
   ________________________________________________________________
   ________________________________________________________________
   ________________________________________________________________

If, in the future, you would like to be contacted through email please provide your email address below._________________________________________________________

**Please Mail To:** WGFD, 528 South Adams, Laramie, WY 82070 **By March 15th**.
Elk Hunt Area 16 contains the entire Shirley Mountain Elk Herd Unit.
Shirley Mountain Elk
Landowner Survey
67 surveyed / 25 responses

Summary

1. How satisfied are you with the current Shirley Mountain elk population?

- Very satisfied: 5 (24%)
- Somewhat satisfied: 8 (38%)
- Somewhat dissatisfied: 5 (24%)
- Very dissatisfied: 3 (14%)

2. Please indicate why you selected the response you did for Question 1.:  

- There are too many elk in the population: 7 (28%)
- There is the right amount of elk in the population: 9 (38%)
- There are too few elk in the population: 4 (17%)
- Other: 4 (17%)
3. What do you think about the current post-season population objective of 800 (640-960) elk?

| Current population objective needs increased | 2 | 10% |
| Current population objective needs decreased | 3 | 14% |
| Current population objective is acceptable   | 16| 76% |

Additional comments

Hi Will- As I said no data from me. Red Desert elk come up to our Windy Hill I80-Reiner exit 196. Frank 530-219-4477

On the one section of pasture I own I haven't seen an elk on the place. I have seen a few antelope.

The herd needs to decrease to more traditional numbers, pre 1995 or so. The Game and Fish hands are tied because a large part of the area is not available for a proper harvest increasing animal use days on access available land during non-hunting dates. I was told a few years back we did not have a food source for wolves so we should not be concerned about them. With the elk population increasing and access being denied for hunting i think we are creating a food source the Game and Fish can not manage and most hunters and landowners don't want.

Elk in outfitting areas have become scarce. They end up concentrated on private land in or near the Shirley Mtms.

I think you are doing a great job. Thank you. -Ken Hunt

We seldom see many elk.

Despite popular belief the elk population woes are not entirely the fault of the Q Creek Ranch. The hunters are generally pathetic, as they have little idea of what it takes to stalk and kill an elk. The G&F needs to open up more types of tags. Perhaps they could work with the Q to open a late cow season on THE ENTIRE area.
Garrett Ranch is on the northern boundary of area 16. So the elk really don't get on us to much. What there is we can live with. Our main concern is all the antelope that come out of area 47 and 48 to winter down here. We winter between 1,500 and 4,000 head. They don't migrate any farther down. That is a rise in number in area 322, to damn many to winter.

We have state and federal leases with small amount of private land on the very eastern boundary by county road 2 and Little Med River. This pasture is used summer grazing only. Have never encountered elk on property. There is possibility of some winter use, but not witnessed. I feel unqualified to answer questions.

The elk herds have a good population in the area. But access to private land seems like it is getting harder in the area especially when the bow hunters have the elk run off to the private land prior to rifle season. Maybe if there was a week of non-hunting in between this might help some of the public land hunting.

Shut season off end of November- October-November only

I don't know enough about this herd to comment- Marvin Cronberg

Your Casper crew has done a nice job in responding to landowner concerns here on the Platte River. Without knowing what your population objective was 10 years ago, it is somewhat difficult to answer question 3. I can only use population numbers on our ranch to answer question 2.

I have property in the Pedro mountains. There was a small herd that stayed in the area at one time. Now they usually move through to join the larger herds. Better vegetation last year. have seen more activity over the winter. Larry Rubis- 307-259-2204
Shirley Mountain Elk Herd Unit Objective Review

1. How satisfied are you with the current Shirley Mountain elk population:
   □ Very Satisfied   ☒ Somewhat Satisfied   □ Somewhat Dissatisfied   □ Very Dissatisfied

2. Please indicate why you selected the response you did for question 1.
   ☒ There are too many animals in the population
   □ There is the right amount of animals in the population
   □ There are too few animals in the population
   □ Other

3. What do you think about the current post-season population objective of 800 (640-960) elk?
   □ Current Herd Objective Needs to Increase
   □ Current Herd Objective Needs to Decrease
   ☒ Current Herd Objective is Acceptable

4. If you have additional comments, please share them in the space below:

   I think there is too many. I think the hunter management areas help and would really like to see more.

If, in the future, you would like to be contacted through email please provide your email address below. uglyturkey-101@yahoo.com

Please Mail To: WGFD, 528 South Adams, Laramie, WY 82070

THANK YOU for your participation!
Herd Unit Management Objective Proposal Meeting Saratoga
Town Hall – 6:00 PM, 23 March 2014

Shirley Mountain Mule Deer
Current population estimate = 4,909 (±20%) mule deer
Management Strategy: Recreational
Propose to decrease the management objective from 10,000 to 7,500 (±20%) mule deer and maintain recreational management for the next 5-years.
☐ I support this proposal
☐ I do not support this proposal

Shirley Mountain Elk
Current population estimate = 800 elk
Management Strategy: Recreational
Propose to change the management objective from a postseason population estimate of 800 to a mid-winter trend count objective of 800 (±20%) elk, and to change from a Recreational management strategy (15-29 bulls:100 cows) to a Special management strategy (30-34 bulls:100 cows) for the next 5-years.
☐ I support this proposal
☐ I do not support this proposal

Comments:

If, in the future, you would like to be contacted through email please provide your email address below.

THANK YOU for your participation!
Herd Unit Management Objective Proposal Meeting Saratoga
Town Hall – 6:00 PM, 23 March 2014

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[X] I support this proposal
[ ] I do not support this proposal

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[X] I support this proposal
[ ] I do not support this proposal

Comments:

________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
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________________________________________________________________________

If, in the future, you would like to be contacted through email please provide your email address below.

THANK YOU for your participation!

Randy Morrison
Herd Unit Management Objective Proposal Meeting Saratoga
Town Hall – 6:00 PM, 23 March 2014

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☐ I support this proposal
☐ I do not support this proposal

Comments:

I definitely support quality, maturity and this strategy.

If, in the future, you would like to be contacted through email please provide your email address below.

THANK YOU for your participation!
Herd Unit Management Objective Proposal Meeting Saratoga
Town Hall – 6:00 PM, 23 March 2014

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☑ I support this proposal
☐ I do not support this proposal

Comments:
Herd Unit Management Objective Proposal Meeting Saratoga
Town Hall – 6:00 PM, 23 March 2014

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    I support this proposal
    I do not support this proposal

Comments:
Herd Unit Management Objective Proposal Meeting Saratoga

Town Hall – 6:00 PM, 23 March 2014

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☐ I support this proposal
☐ I do not support this proposal

Comments:

___________________________________________________________________________
                                                                                      
___________________________________________________________________________
                                                                                      
___________________________________________________________________________
                                                                                      
___________________________________________________________________________
                                                                                      
___________________________________________________________________________
                                                                                      
___________________________________________________________________________
                                                                                      
___________________________________________________________________________
                                                                                      
___________________________________________________________________________
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X I support this proposal
____ I do not support this proposal

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X I support this proposal
____ I do not support this proposal

Comments:
Elk - maintain the quality

Owl - back in was much better for deer years ago when it was a limited quota area

3/15/13
**2015 - JCR Evaluation Form**

**SPECIES:** Elk  
**PERIOD:** 6/1/2015 - 5/31/2016  
**HERD:** EL730 - RAWHIDE  
**HUNT AREAS:** 3  
**PREPARED BY:** MARTIN HICKS

<table>
<thead>
<tr>
<th></th>
<th>2010 - 2014 Average</th>
<th>2015</th>
<th>2016 Proposed</th>
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<tr>
<td>Hunter Satisfaction Percent</td>
<td>62%</td>
<td>59%</td>
<td>60%</td>
</tr>
<tr>
<td>Landowner Satisfaction Percent</td>
<td>38%</td>
<td>35%</td>
<td>60%</td>
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<td>Harvest:</td>
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<td>Hunters:</td>
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<td>Hunter Success:</td>
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<td>33%</td>
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<td>Active Licenses:</td>
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<td>360</td>
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<tr>
<td>Active License Success:</td>
<td>39%</td>
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<tr>
<td>Recreation Days:</td>
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<td>20.9</td>
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<td>Males per 100 Females:</td>
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<tr>
<td>Juveniles per 100 Females</td>
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</table>

**Satisfaction Based Objective:** 60%

**Management Strategy:** Special

Percent population is above (+) or (-) objective: -13%

Number of years population has been + or - objective in recent trend: 2

---

**EL730 Satisfaction Survey Percentages**

<table>
<thead>
<tr>
<th>JCR Year</th>
<th>Hunter Percent</th>
<th>Landowner Percent</th>
<th>Objective - %</th>
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</thead>
<tbody>
<tr>
<td>2010</td>
<td>74</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>2011</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>2012</td>
<td>58</td>
<td>46</td>
<td>30</td>
</tr>
<tr>
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<td>59</td>
</tr>
<tr>
<td>2015</td>
<td>59</td>
<td>35</td>
<td></td>
</tr>
</tbody>
</table>

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163
Active Licenses

Days per Animal Harvested

Postseason Animals per 100 Females
RAWHIDE ELK HERD (730)
2016 HUNTING SEASONS

<table>
<thead>
<tr>
<th>Hunt Area</th>
<th>Type</th>
<th>Season Dates</th>
<th>Quota</th>
<th>License</th>
<th>Limitations</th>
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<tr>
<td></td>
<td></td>
<td>Opens</td>
<td>Closes</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Gen</td>
<td>Sept. 15</td>
<td>Oct. 14</td>
<td>General</td>
<td>Any elk</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Oct. 15</td>
<td>Jan. 31</td>
<td></td>
<td>Any elk south of U.S. Highway 26</td>
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<tr>
<td>3</td>
<td>6</td>
<td>Aug. 15</td>
<td>Nov. 30</td>
<td>200</td>
<td>Limited quota Cow or calf</td>
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<tr>
<td>3</td>
<td>6</td>
<td>Dec. 1</td>
<td>Jan. 31</td>
<td></td>
<td>Cow or calf elk south of U.S. Highway 26</td>
</tr>
</tbody>
</table>

Special Archery Season Hunt Areas

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<th>Hunt Area</th>
<th>Opening Date</th>
<th>Closing Date</th>
<th>Limitations</th>
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<tbody>
<tr>
<td>3</td>
<td>Sept. 1</td>
<td>Sept. 14</td>
<td>Refer to Section 2 of this Chapter</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Hunt Area</th>
<th>Type</th>
<th>Quota change from 2015</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>6</td>
<td>0</td>
</tr>
</tbody>
</table>

Management Evaluation
Current Hunter/Landowner Satisfaction Management Objective: 60% landowner/hunter satisfaction: bull quality; Target goal: ≥ 61% branch antlered bulls in harvest survey
Management Strategy: Special
2015 Hunter Satisfaction: 60% Satisfied, 23% Neutral, 17% Dissatisfied
2015 Landowner Satisfaction Estimate: 35%
Most Recent 3-year Running Average Hunter Satisfaction Estimate: 59%
Most Recent 3-year Running Average Landowner Satisfaction Estimate: 31%
2015 Bull Quality: 82% branch antlered bulls in harvest survey
Most Recent 3-year Running Average Bull Quality: 92% branch antlered bulls in harvest survey

Management Issues
The management objective for this herd was changed in 2012 from a post-season population objective of 40 elk to a nonnumeric population objective based on landowner and hunter satisfaction and the percentage of branch antlered bulls in the harvest. The management strategy was changed from recreational to special. We will follow trends over time to make management decisions based on constituent satisfaction and bull harvest parameters. There is not a working model for this herd unit due to our inability to collect adequate population data.
This herd unit has been difficult to manage based on our inability to collect adequate herd composition data along with field harvest data. Based on field personnel and landowner observations we estimate there are over 400 elk in the Rawhide Elk Herd, with the population expanding south of the North Platte River into Goshen, Platte and Laramie Counties. There have been several public meetings to address the increasing population, and as a result the herd boundary was expanded south to the Colorado border for the 2012 season. Additionally the portion of Area 3 north of U.S. Highway 26 was changed to a general season for the 2014 season (the southern portion was changed to a general in 2011).

Weather
Weather in this herd unit was relatively normal during the past bio-year. Precipitation amounts were above average at all elevations throughout southeast Wyoming. No significant prolonged periods of extreme heat or cold temperatures were observed, or extreme or prolonged periods of snow loading in lower elevation winter ranges. Timing of precipitation and amounts received during key growth periods for cool season grasses and preferred transitional range and winter range shrub species was excellent. While early season growing conditions were optimal, late summer and fall precipitation were lacking. Weather patterns most likely had a positive influence on all big game species. For specific meteorological information for the Rawhide herd unit the reviewer is referred to the following link: [http://www.ncdc.noaa.gov/cag/](http://www.ncdc.noaa.gov/cag/).

Habitat
Forage availability continued to improve in 2015 with an increase in amounts of precipitation received and the timeliness of when it was received. Precipitation received in April, May, and early June resulted in excellent growth of cool season grasses and forbs, and above average leader growth on preferred key shrubs. While early season growing conditions were optimal, late summer and fall precipitation were lacking.

Areas burned by wildfires within the last 10 years have responded mostly favorably due to reduction in conifers and enhancement of herbaceous plant communities. Cheatgrass continues to be a major threat to native rangelands and big game ranges in this herd unit. Some portions of burned areas are predominantly cheatgrass, and will likely remain in that state unless treated with herbicides.

The limited number of habitat transects that have been established throughout the Laramie Region have not provided sufficient data to make reliable assumptions of habitat quantity or quality and consequently heavily influence population management for any particular big game species.

In Summer 2015, population biologists and habitat managers began working together to modify habitat monitoring techniques utilized statewide and to improve overall consistency among the regions. Identification of key herd units per big game species, assessing habitats through landscape scale inventory methods versus monitoring a handful of permanent monitoring sites, assessing habitats in all seasonal ranges (summer, transition, winter), and development of correlations to amounts of and timing of precipitation will help improve the overall value of data collected and result in our abilities to more strongly correlate management decisions for populations based off habitat conditions.
**Field/Harvest Data**

Harvest success and effort has fluctuated around 38% and 20 days per harvest. Harvest is driven by access and if hunters are limited to public land, success decreases and effort increases. Finding elk in this herd unit can be difficult due to landownership patterns. Access is restricted to the Broom Creek HMA north of US Hwy 26 and is dependent on crop damage south of US Hwy 26. A majority of landowners do not want elk south of the highway and are willing to allow access. In 2011 elk were plentiful and hunters were successful. In 2012 the severe drought displaced elk and they were not found in traditional places (i.e. alfalfa fields). In 2014 and 2015 above average spring and summer precipitation re-distributed elk which increased forage production and as a result elk were not dependent upon irrigated crops. Elk that were traditionally found within Whalen Canyon appear to have re-distributed to other areas of the herd unit. The percent of branched antlered bulls in the harvest survey was 82%, a decrease from 2014. Hunters and landowners have made the observations that there are fewer trophy quality bulls within the Rawhide Hills, Haystack Range, and Wildcat Hills. Our ability to manage this segment of the population is limited due to access and adult bulls within the harvest will likely remain high. The high percentage of branch antlered elk is indicative of the quality of bulls and the amount of private land that provides sanctuaries to allow bulls to reach maturity.

Licenses numbers have fluctuated from 50 to 200 over the years. Starting in 2011 that portion of Hunt Area 3 south of U.S. Highway 26 became a general season. After several public meetings over the past three years coupled with a landowner survey it was decided to convert that portion of Area 3 north of US Hwy 26 from a limited quota area to a general hunt area. However, in 2015 landowners north of U.S. Hwy 26 voiced their concern that elk were no longer in their traditional areas and therefore damage issues have decreased. Lack of elk and damage will prompt managers to propose to close the Type 6 season north of U.S. Hwy 26 on November 30.

Since this herd unit changed to a satisfaction management evaluation and the percent of branch antlered bulls in the harvest we no longer collect classification data.

**Landowner/Hunter Satisfaction Survey Results**

The landowner satisfaction survey results (Appendix A) showed that 35% of the landowners were satisfied elk were at or about at desired levels, 17% indicated elk were above desired levels and 47% indicated the elk population was below desired levels. There were 23 surveys returned for a 35% return rate, slightly higher than 2014, which had a return rate of 30%. Return rate exceeded the 25% threshold required for the satisfaction survey. Based on the past three years of surveys landowners are still not pleased with the number of elk. Based on input from the field, meeting and survey comments, about half of the landowners want to reduce elk and the other half want to manage for trophy bulls. Bringing their satisfaction up to 60% will be a challenge. The hunter satisfaction survey indicated that 57% were satisfied with their hunt. This is similar to 2014 and given there have not been any management changes to the elk population the percent of satisfied hunters appears reasonable.

There was also some concern voiced by some landowners that the general firearm season was too early. Since the opening date for the general firearm coincides with the breeding season
there was concern from some landowners in the northern portion of the hunt area that bull quality and quantity was decreasing since they were more susceptible to harvest. Survey results indicated that 57% of the landowners thought the opening date was just right. Based on the survey results a proposal to change the opening date will not be submitted.

**Management Summary**

In summary, the 2016 season is designed to reduce elk numbers particularly in the southern portion of the herd unit. The Type 6 license will decrease by 62 days north of U.S. Hwy 26. We hope to attain a harvest of 115 elk.
Appendix A

2015 Elk 730 Landowner Summary

Please indicate your satisfaction level with current elk population:

17.4%47.8%34.8%
1- Above Desired Levels 4
2- At or About at Desired Levels 8
3- Below Desired Levels 11
1- Above Desired Levels 4 17.4%
2- At or About at Desired Levels 8 34.8%
3- Below Desired Levels 11 47.8%
Do you think the general firearm season opening date (Sept 15) is:

57.1% 42.9%
1- Too Early 9
2- Just Right 12
3- Too Late 0
1- Too Early 9 42.9%
2- Just Right 12 57.1%
3- Too Late 0 0%

Additional Comments

The general license has created multiple problems for landowners. Poaching, trespassing, trash. Landowners get no benefit. Locals run all over you, but can't sell out of states hunts because they are still a draw.
Do not want the elk!
Where I live here south of the Rawhide Buttes we haven't seen any elk for 6 or more years. Guess there is elk on the Glen Southwise Ranch, but he won't let any of his neighbors hunt as he wants to get Big Football Stars something like that to pay him 5 to 10 thousand dollars to get one. That's my opinion about the elk. We use to have elk down toward Gurnsey haven't seen any there for quite some time.
We have not seen signs of any elk in our vicinity and have only heard of any sightings of a few odd elk in several years. So as far as we are concerned there is not a Rawhide herd anymore. Don't know the reasons, but the overall elk population in this area is down from previous years. It was tough to even see an elk after 5 days of hunting. Hunting the elk during the rut (Sept 15) adds to the ability to locate elk.
Would like to see the bull season moved back away from the rut. Oct 15 or Nov 1 start would be great.
I really don't like the general license-Thanks
1 elk east of I-25 is too many!!
I liked having the longer season. It would be nice to have a tag that would allow one to harvest a bull or a cow for the first month and then cows only until January.
I see no need for an archery season here. All that does is get the elk wound up before rifle season and we need elk shot and less worry about recreation. Also closing the area north of highway 26 is a slap in the face to those of us that raised this herd for you.
What elk? And what regulations have you been looking at? The season opens as early as August and goes through January the following year? This relates to nearly a 6 month long season, not to mention a general season?

As a landowner in Goshen County I fought the G&F for years to keep Elk Area #3 a limited quota elk area only, however the G&F were very persistent and eventually got their way in making area 3 a general season elk area. Our ranch (Dave Stenson) in Goshen County went from having hundreds of elk with numerous trophy bulls to absolutely NO elk! Over the years we experienced some of the most fantastic elk hunting I have ever known. It was not uncommon to
see a herd of 300 head of elk with at least 100 head being bulls and at least 10 of those bulls being in the 350+ BL scoring range. Needless to say, we didn't even consider harvesting a bull that wasn't at least a 350 class! Yes you, the G&F took a premier elk area with numerous trophy bulls, some even world class and destroyed it by making it a general elk area and extending the damn season to nearly 6 months! Do you really want my honest opinion about the elk hunting in general hunt area #3? There are none! Congratulations, you accomplished what you set out to do, get rid of the elk! David A Stenson

the elk population is non-existent in the area north of highway 26
I am not involved in this hunt area. I feel just the land owners in the area should be involved. I appreciate your concerns for managing different areas to get the best hunting for everyone involved.
No elk found after start of deer season.