



# Carbon County Related Hunting and Fishing Spending, 2015

For the Wyoming Wildlife Federation



# WYOMING WILDLIFE FEDERATION

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## **Introduction**

Expenditures by hunters and anglers make an important contribution to Wyoming's economy. This contribution is particularly important during times of economic downturn in the state's energy sectors. The U.S. Fish and Wildlife Service (USFWS), in its National Survey of Fishing, Hunting, and Wildlife-Associated Recreation report, estimates that 443,000 resident and nonresident hunters and anglers participated in 4.8 million days hunting and fishing in Wyoming during 2011 (Table 1). The report also estimates that during 2011 this recreational activity generated \$683.7 million of spending within the Wyoming economy.

Access to both public and private lands is important for hunting and fishing in Wyoming. For hunting, the USFWS report estimates that 49 percent of hunters in Wyoming hunt exclusively on public land, 35 percent hunt on both public and private land, and 16 percent hunt exclusively on private land. Overall, more than one-third of hunters in Wyoming hunt on both public and private lands.

Although the statewide information on hunting and fishing expenditures is important, residents and local officials are also interested in the local economic importance of hunting and fishing expenditures. In response to this interest, this analysis attempts to estimate the spending associated with hunting and fishing for Carbon County, Wyoming.

## **Methodology**

In order to estimate recreational spending, two types of information are needed. One is the amount of recreational use and the other is per unit expenditures associated with that recreational use. For this analysis recreational use for hunting was based on the hunter-day estimates from the Wyoming Game and Fish Department's 2015 Annual Harvest Reports by Hunt Area. Harvest reports were available for the following species: Antelope, Bighorn Sheep, Bison, Black Bear, Deer, Elk, Moose, and Mountain Goat.

Because Hunt Area boundaries are based on habitat rather than county boundaries, not all the Hunt Areas found in Carbon County are located entirely within the borders of the county. To account for this, a GIS analysis was conducted by the Wyoming Game and Fish Department to estimate the percent of each Hunt Area that was located within Carbon County. This percentage was then used to allocate the proportion of total hunter days for the Hunt Area in Carbon County. These percentages by hunt area are detailed in the maps at the end of this report. Unfortunately, there was no data available on fishing-days by sub-regions of the state. Because of this, recreational use for fishing was based on the Game and Fish Department's 2015 data on fishing licenses sold in Carbon County.

In order to estimate per unit expenditures for hunting and fishing in this analysis, per unit estimates for Wyoming from the USFWS 2011 National Survey of Fishing, Hunting, and Wildlife-Associated Recreation report were used. These values were adjusted for inflation to 2015 dollars. Combining the recreational

use amounts with the per unit of expenditures amounts provided estimates for hunting and fishing spending related to Carbon County. Since the USFWS expenditure estimates are for all of Wyoming, not just Carbon County and because the fishing associated with the purchase of a Wyoming fishing license in Carbon County can occur throughout the state, it is not possible to assume that 100 percent of these expenditures solely occurred within the Carbon County economy. However, based on proximity it seems more than likely that a high percentage of these expenditures occurred within the county's economy.

## **Results**

Table 2 summaries the estimates of Carbon County related to hunting and fishing spending for 2015. From Game and Fish Hunt Area data, it is estimated that there were nearly 118,000 Big Game and Trophy Game hunting days in Carbon County in 2015. Based on USFWS expenditure estimates for Wyoming, adjusted to 2015 dollars (\$90.91 per day for residents and \$579.82 per day for nonresidents), it is estimated that these hunter-days generated spending of \$19.9 million. Information on the hunter-days by individual species can found in the Appendix tables in this report.

Fishing license sales data indicated that more than 13,000 fishing licenses were sold in Carbon County in 2015. From USFWS data for average fishing days in Wyoming, it is estimated that the users of these fishing licenses participated in more than 63,000 angler-days in Wyoming. The expenditures associated with these fishing licenses are estimated to be \$6.8 million. This spending estimate was based on USFWS annual individual expenditures in Wyoming by anglers for annual fishing licenses and USFWS daily individual expenditures in Wyoming by anglers for daily fishing licenses. Since USFWS expenditure data only applies to hunters and anglers 16 years-of-age and over, youth annual license sales, which are for ages 14-18, were reduced by 50 percent to account for anglers less than 16 years-of-age. Combined total hunting and fishing related spending related to Carbon County in 2015 is estimated to be \$26.7 million.

## **Summary and Conclusions**

Hunting and fishing are economically important to the Carbon County economy. It is likely that much of the \$26.7 million of spending by hunters and anglers occurs within the Carbon County economy. In addition, those dollars that are spent locally generate secondary impacts in various other support sectors within the local economy. These types of economic contributions become particularly important during times of economic downturn in the state's energy sector. The popularity of hunting and fishing with both residents and nonresidents indicates that these recreational activities are important in terms of both contributions to the local economy and contributions to the residents' quality of life.

<b>Table 1. 2011 Hunting and Fishing Spending in Wyoming</b>					
<b>Participation</b>					
	Total	Resident	Nonresident	Resident	Nonresident
	Fishing	Fishing	Fishing	Fishing	Fishing
Total Individuals	303,000	110,000	193,000	36.3%	63.7%
Total Trips	2,902,000	1,510,000	1,392,000	52.0%	48.0%
Total Days	3,123,000	2,009,000	1,114,000	64.3%	35.7%
Average Days	10.3	18.3	5.8		
	Total	Resident	Nonresident	Resident	Nonresident
	Hunting	Hunting	Hunting	Hunting	Hunting
Total Individuals	140,000	76,000	64,000	54.3%	45.7%
Total Trips	1,204,000	978,000	225,000	81.2%	18.7%
Total Days	1,726,000	1,103,000	623,000	63.9%	36.1%
Average Days	12.3	14.5	9.7		
Source: USFWS, 2011 National Survey of Fishing, Hunting, and Wildlife-Associated Recreation (Wyoming - Table 3)					
<b>2011 Trip and Equipment Expenditures in Wyoming</b>					
	Total	Resident	Nonresident	Resident	Nonresident
	Fishing	Fishing	Fishing	Fishing	Fishing
Total Amount	\$438,892,000	\$95,365,000	\$343,527,000	21.7%	78.3%
Per Individual	\$1,448.49	\$866.95	\$1,779.93		
Per Trip	\$151.24	\$63.16	\$246.79		
Per Day	\$140.54	\$47.47	\$308.37		
	Total	Resident	Nonresident	Resident	Nonresident
	Hunting	Hunting	Hunting	Hunting	Hunting
Total Amount	\$244,865,000	\$115,763,000	\$129,102,000	47.3%	52.7%
Per Individual	\$3,134.94	\$1,254.80	\$5,367.61		
Per Trip	\$364.53	\$97.51	\$1,526.79		
Per Day	\$254.28	\$86.46	\$551.41		
Source: USFWS, 2011 National Survey of Fishing, Hunting, and Wildlife-Associated Recreation (Wyoming - Table 21)					

<b>Table 2. Carbon County Related Hunting and Fishing Spending, 2015</b>				
<b>Big and Trophy Game Hunting</b>				
	Resident	NonResident	Combined	
	Hunter	Hunter	Hunter	
Species	Days (1)	Days (1)	Days (1)	
Antelope	6,118	2,594	8,712	
Bighorn Sheep	9	1	10	
Black Bear	2,623	196	2,819	
Deer	19,155	4,940	24,095	
Elk	70,957	10,998	81,955	
Moose	96	42	138	
<b>Total Hunting Days</b>	<b>98,958</b>	<b>18,771</b>	<b>117,729</b>	
Total Hunting Days	98,958	18,771	117,729	
Spending Per Day (2)	\$90.91	\$579.82	\$168.87	
<b>Total Hunting Spending</b>	<b>\$8,996,771</b>	<b>\$10,883,958</b>	<b>\$19,880,729</b>	
<b>Fishing Licenses Sold in Carbon County 2015</b>				
		Per	Total	Total
	License	Fisherman	Fishing	Angler
Type	Sold (3)	Spending (2)	Spending	Days
Resident Annual	2,533	\$911.62	\$2,309,132	46,354
Resident Youth Annual	113	\$911.62	\$103,013	2,068
Resident Daily	1,130	\$49.92	\$56,405	1,130
Non-Resident Annual	721	\$1,871.64	\$1,349,453	4,182
Non-Resident Youth Annual	55	\$1,871.64	\$102,004	316
Non-Resident Daily	9,016	\$324.26	\$2,923,516	9,016
<b>Total Fishing Spending</b>	<b>13,568</b>	<b>\$504.41</b>	<b>\$6,843,523</b>	<b>63,066</b>
<b>Combined Hunting &amp; Fishing Spending</b>			<b>\$26,724,252</b>	
(1) Based WGFD Annual Harvest Reports by Hunt Area and percent of Hunt Areas that are in the County				
(2) Based on USFWS 2011 National Survey of Fishing, Hunting, and Wildlife -Associated Recreation - Wyoming (Adjusted for inflation)				
(3) Adjusted for Youth under 16				

<b>Appendix Table 1. Carbon County Antelope Hunting, 2015</b>								
				Total	Total	County	County	Combined
				Resident	NonResident	Resident	NonResident	County
Hunt	Total	County	County	Hunter	Hunter	Hunter	Hunter	Hunter
Areas	Acres	Acres	Percent	Days	Days	Days	Days	Days
32	448,219	71,715	16.0%	1,004	219	161	35	196
43	268,288	21,463	8.0%	574	2,169	46	174	219
45	424,783	76,461	18.0%	1,099	991	198	178	376
46	255,484	227,381	89.0%	552	343	491	305	797
47	706,561	544,052	77.0%	976	233	752	179	931
48	545,537	545,537	100.0%	532	105	532	105	637
50	760,915	661,996	87.0%	970	333	844	290	1,134
51	203,168	203,168	100.0%	190	45	190	45	235
52	394,550	394,550	100.0%	739	417	739	417	1,156
53	640,872	640,872	100.0%	271	167	271	167	438
55	247,053	200,113	81.0%	310	69	251	56	307
56	171,742	171,742	100.0%	82	30	82	30	112
57	1,128,241	304,625	27.0%	738	204	199	55	254
61	805,095	177,121	22.0%	311	83	68	18	87
62	468,237	468,237	100.0%	321	166	321	166	487
63	328,633	230,043	70.0%	956	225	669	158	827
68	539,183	32,351	6.0%	616	386	37	23	60
108	121,672	121,672	100.0%	267	193	267	193	460
<b>Total</b>	<b>8,458,233</b>	<b>5,093,099</b>	<b>60.2%</b>	<b>10,508</b>	<b>6,378</b>	<b>6,118</b>	<b>2,594</b>	<b>8,712</b>

Source: Wyoming Game and Fish Department Annual Harvest Reports, 2015

<b>Appendix Table 2. Carbon County Bighorn Sheep Hunting, 2015</b>								
				Total	Total	County	County	Combined
				Resident	NonResident	Resident	NonResident	County
Hunt	Total	County	County	Hunter	Hunter	Hunter	Hunter	Hunter
Areas	Acres	Acres	Percent	Days	Days	Days	Days	Days
17	793,500	698,280	88.0%	6	0	5	0	5
18	1,460,929	759,683	52.0%	0	0	0	0	0
19	3,831,940	191,597	5.0%	84	18	4	1	5
21	686,238	686,238	100.0%	0	0	0	0	0
26	160,999	160,999	100.0%	0	0	0	0	0
<b>Total</b>	<b>6,933,606</b>	<b>2,496,797</b>	<b>36.0%</b>	<b>90</b>	<b>18</b>	<b>9</b>	<b>1</b>	<b>10</b>

Source: Wyoming Game and Fish Department Annual Harvest Reports, 2015

<b>Appendix Table 3. Carbon County Black Bear Hunting, 2015</b>								
				Total	Total	County	County	Combined
				Resident	NonResident	Resident	NonResident	County
Hunt	Total	County	County	Hunter	Hunter	Hunter	Hunter	Hunter
Areas	Acres	Acres	Percent	Days	Days	Days	Days	Days
7	3,615,740	180,787	5.0%	745	27	37	1	39
8	2,052,679	1,067,393	52.0%	1,885	102	980	53	1,033
9	1,761,458	1,708,614	97.0%	1,588	146	1,540	142	1,682
33	517,550	10,351	2.0%	200	0	4	0	4
35	30,368,186	2,125,773	7.0%	876	3	61	0	62
<b>Total</b>	<b>38,315,612</b>	<b>5,092,918</b>	<b>13.3%</b>	<b>5,294</b>	<b>278</b>	<b>2,623</b>	<b>196</b>	<b>2,819</b>

Source: Wyoming Game and Fish Department Annual Harvest Reports, 2015

<b>Appendix Table 4. Carbon County Deer Hunting, 2015</b>								
				Total	Total	County	County	Combined
				Resident	NonResident	Resident	NonResident	County
Hunt	Total	County	County	Hunter	Hunter	Hunter	Hunter	Hunter
Areas	Acres	Acres	Percent	Days	Days	Days	Days	Days
64	1,812,320	181,232	10.0%	3,821	1,696	382	170	552
66	651,955	71,715	11.0%	3,796	453	418	50	467
70	644,541	644,541	100.0%	2,100	613	2,100	613	2,713
74	540,967	248,845	46.0%	696	115	320	53	373
75	328,451	187,217	57.0%	2,452	191	1,398	109	1,507
78	290,461	223,655	77.0%	1,214	285	935	219	1,154
79	468,095	468,095	100.0%	1,478	286	1,478	286	1,764
80	322,044	322,044	100.0%	653	176	653	176	829
81	194,072	194,072	100.0%	699	190	699	190	889
82	640,872	640,872	100.0%	9,939	2,878	9,939	2,878	12,817
83	171,742	171,742	100.0%	36	0	36	0	36
84	365,665	321,785	88.0%	178	36	157	32	188
87	784,584	698,280	89.0%	166	33	148	29	177
96	443,350	26,601	6.0%	1,701	658	102	39	142
97	534,700	21,388	4.0%	1,092	195	44	8	51
98	702,100	161,483	23.0%	248	14	57	3	60
100	1,128,241	304,625	27.0%	839	284	227	77	303
161	204,907	204,907	100.0%	64	8	64	8	72
<b>Total</b>	<b>10,229,067</b>	<b>5,093,099</b>	<b>49.8%</b>	<b>31,172</b>	<b>8,111</b>	<b>19,155</b>	<b>4,940</b>	<b>24,095</b>

Source: Wyoming Game and Fish Department Annual Harvest Reports, 2015



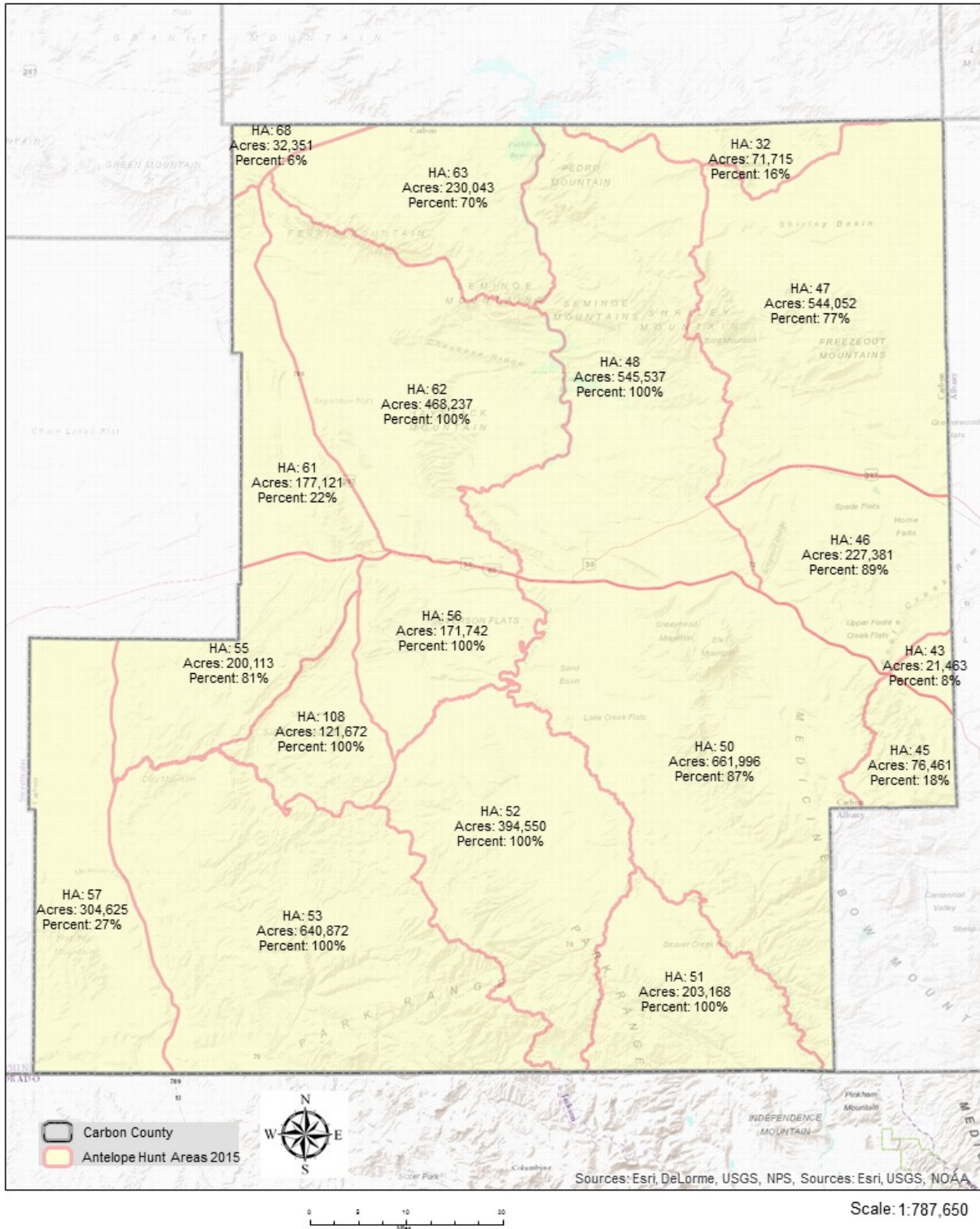
<b>Appendix Table 5. Carbon County Elk Hunting, 2015</b>								
				Total	Total	County	County	Combined
				Resident	NonResident	Resident	NonResident	County
Hunt	Total	County	County	Hunter	Hunter	Hunter	Hunter	Hunter
Areas	Acres	Acres	Percent	Days	Days	Days	Days	Days
7	3,000,300	90,009	3.0%	24,799	4,529	744	136	880
10	208,956	75,224	36.0%	8,447	1,727	3,041	622	3,663
11	115,457	111,993	97.0%	3,046	677	2,955	657	3,611
12	284,063	284,063	100.0%	8,554	1,231	8,554	1,231	9,785
13	194,072	194,072	100.0%	6,575	1,435	6,575	1,435	8,010
15	322,044	322,044	100.0%	7,464	1,151	7,464	1,151	8,615
16	1,125,867	1,002,022	89.0%	4,408	430	3,923	383	4,306
19	518,250	10,365	2.0%	4,154	577	83	12	95
21	640,872	640,872	100.0%	24,134	3,480	24,134	3,480	27,614
22	208,220	187,398	90.0%	557	30	501	27	528
24	443,350	26,601	6.0%	2,033	365	122	22	144
108	365,665	321,785	88.0%	1,717	396	1,511	348	1,859
110	290,462	223,656	77.0%	12,014	771	9,251	594	9,844
111	587,222	510,883	87.0%	703	105	612	91	703
114	540,967	248,845	46.0%	842	109	387	50	437
118	702,100	161,483	23.0%	323	58	74	13	88
124	1,791,912	304,625	17.0%	925	75	157	13	170
125	184,032	184,032	100.0%	741	710	741	710	1,451
128	1,069,400	21,388	2.0%	1,077	2	22	0	22
130	171,742	171,742	100.0%	106	24	106	24	130
<b>Total</b>	<b>12,764,953</b>	<b>5,093,102</b>	<b>39.9%</b>	<b>112,619</b>	<b>17,882</b>	<b>70,957</b>	<b>10,998</b>	<b>81,955</b>

Source: Wyoming Game and Fish Department Annual Harvest Reports, 2015

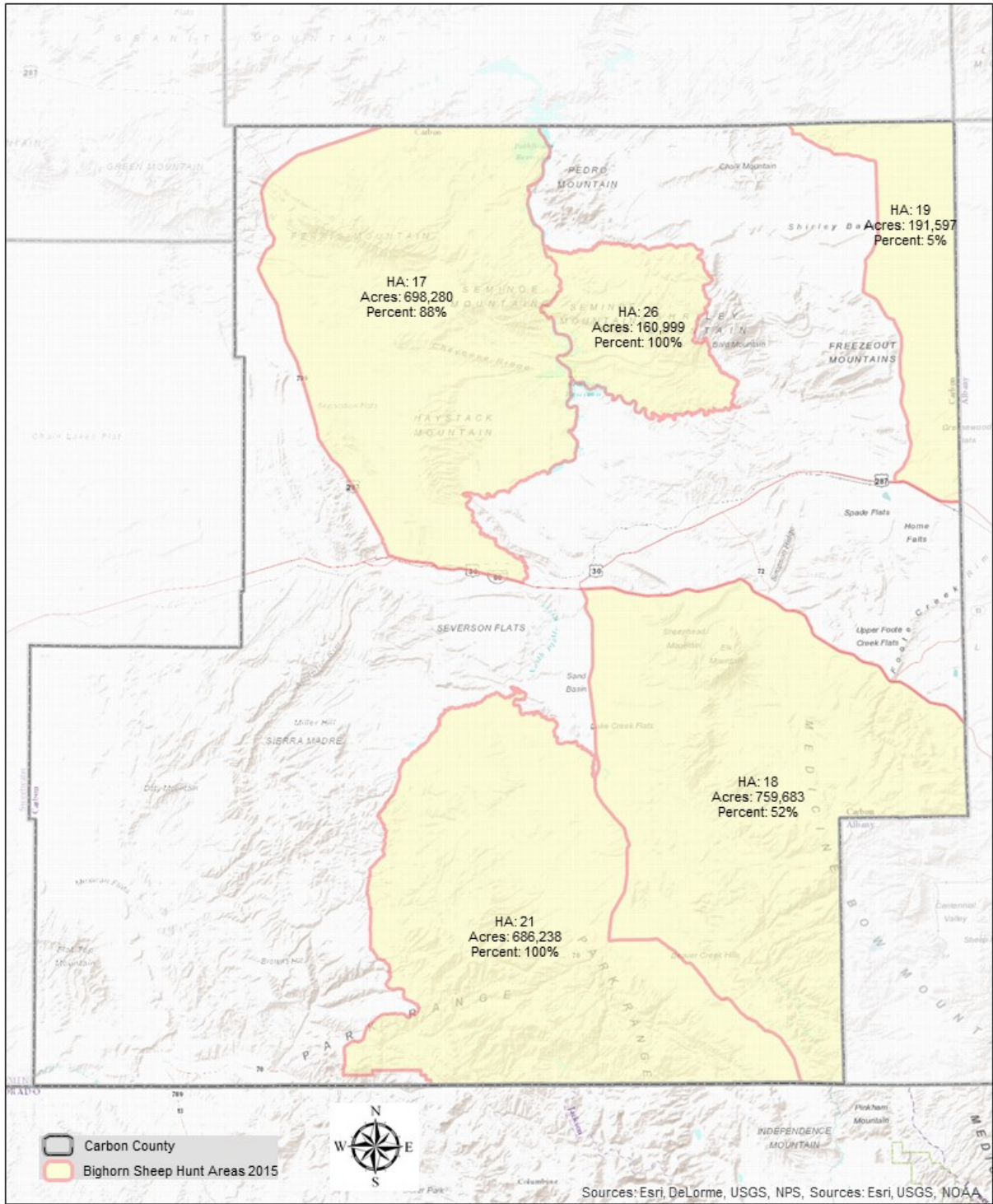
<b>Appendix Table 6. Carbon County Moose Hunting, 2015</b>								
				Total	Total	County	County	Combined
				Resident	NonResident	Resident	NonResident	County
Hunt	Total	County	County	Hunter	Hunter	Hunter	Hunter	Hunter
Areas	Acres	Acres	Percent	Days	Days	Days	Days	Days
38	2,603,493	1,067,432	41.0%	234	102	96	42	138
41	1,763,808	1,710,894	97.0%	0	0	0	0	0
<b>Total</b>	<b>4,367,301</b>	<b>2,778,326</b>	<b>63.6%</b>	<b>234</b>	<b>102</b>	<b>96</b>	<b>42</b>	<b>138</b>

Source: Wyoming Game and Fish Department Annual Harvest Reports, 2015

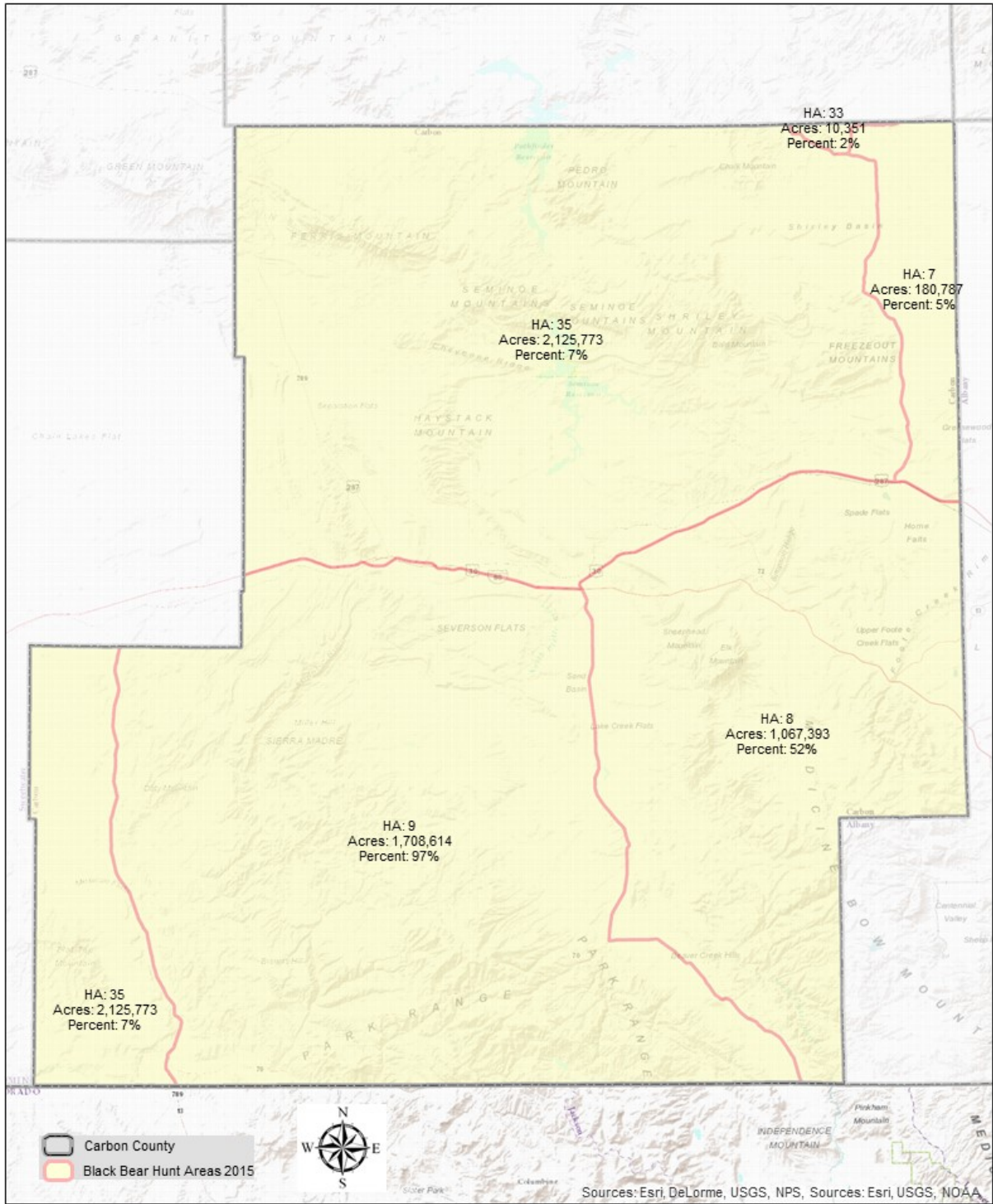
<b>Appendix 7. Fishing Licenses Sold in Carbon County 2015</b>			
		Adjustment	County
	County	Youth Under	Over 16
Type	Licenses	16	Licenses
Resident Annual	2,533		2,533
Resident Youth Annual	226	50.0%	113
Resident Daily	1,130		1,130
Non-Resident Annual	721		721
Non-Resident Youth Annual	109	50.0%	55
Non-Resident Daily	9,016		9,016
<b>Total</b>	<b>13,735</b>		<b>13,568</b>
Source: Wyoming Game and Fish Department			



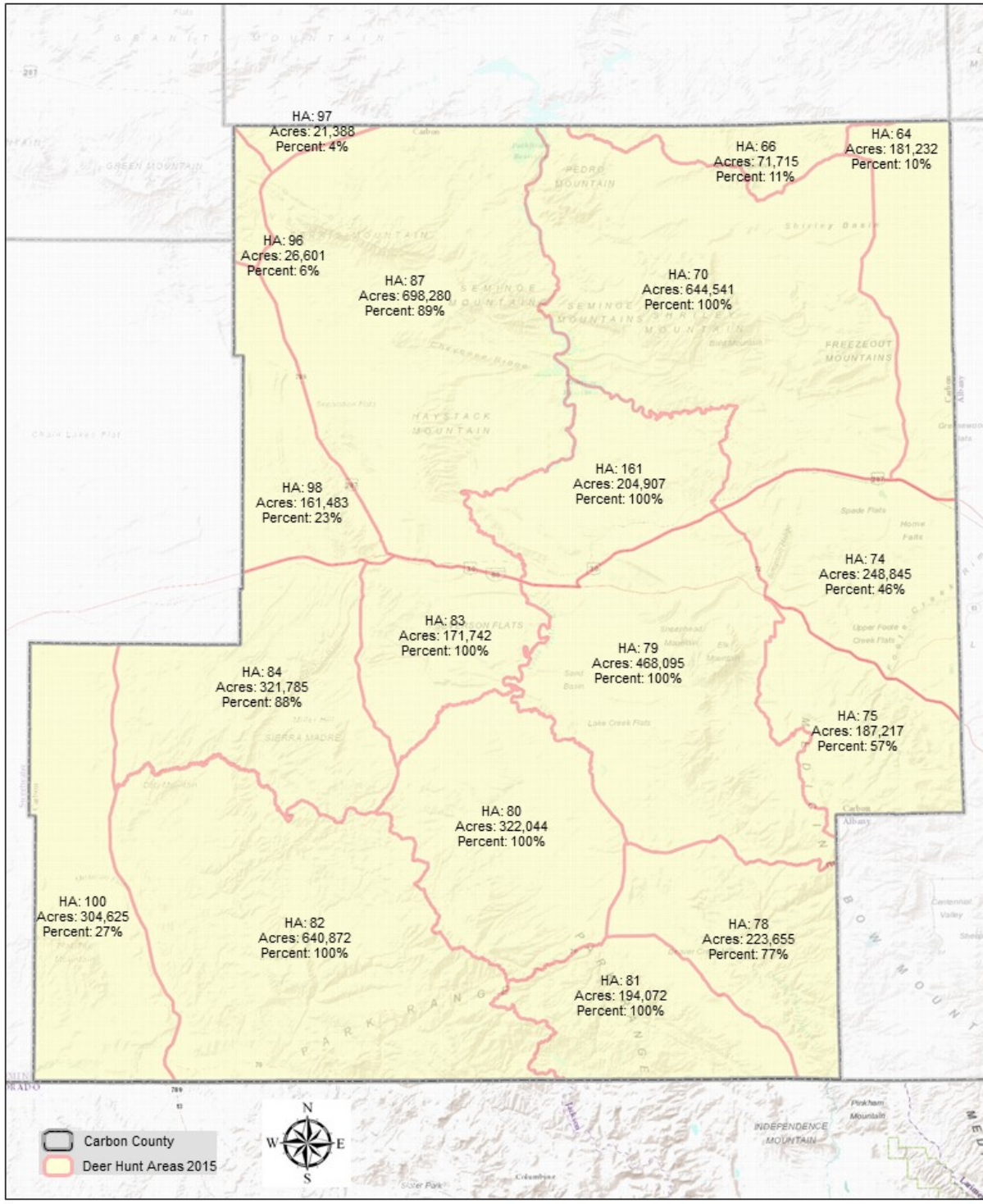
**Percentage of 2015 Antelope Hunt Areas (HA) within Carbon County**



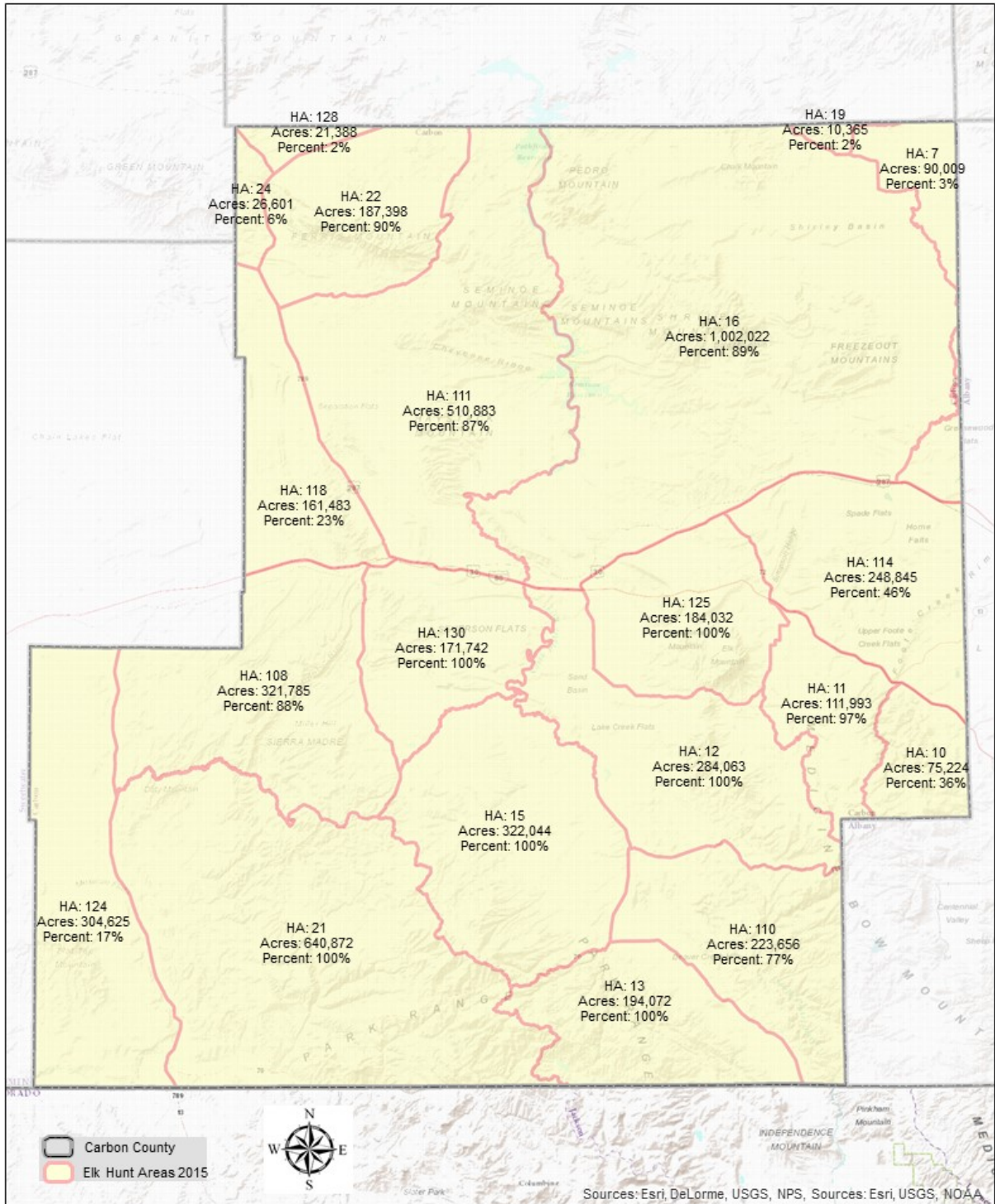
**Percentage of 2015 Bighorn Sheep Hunt Areas (HA) within Carbon County**



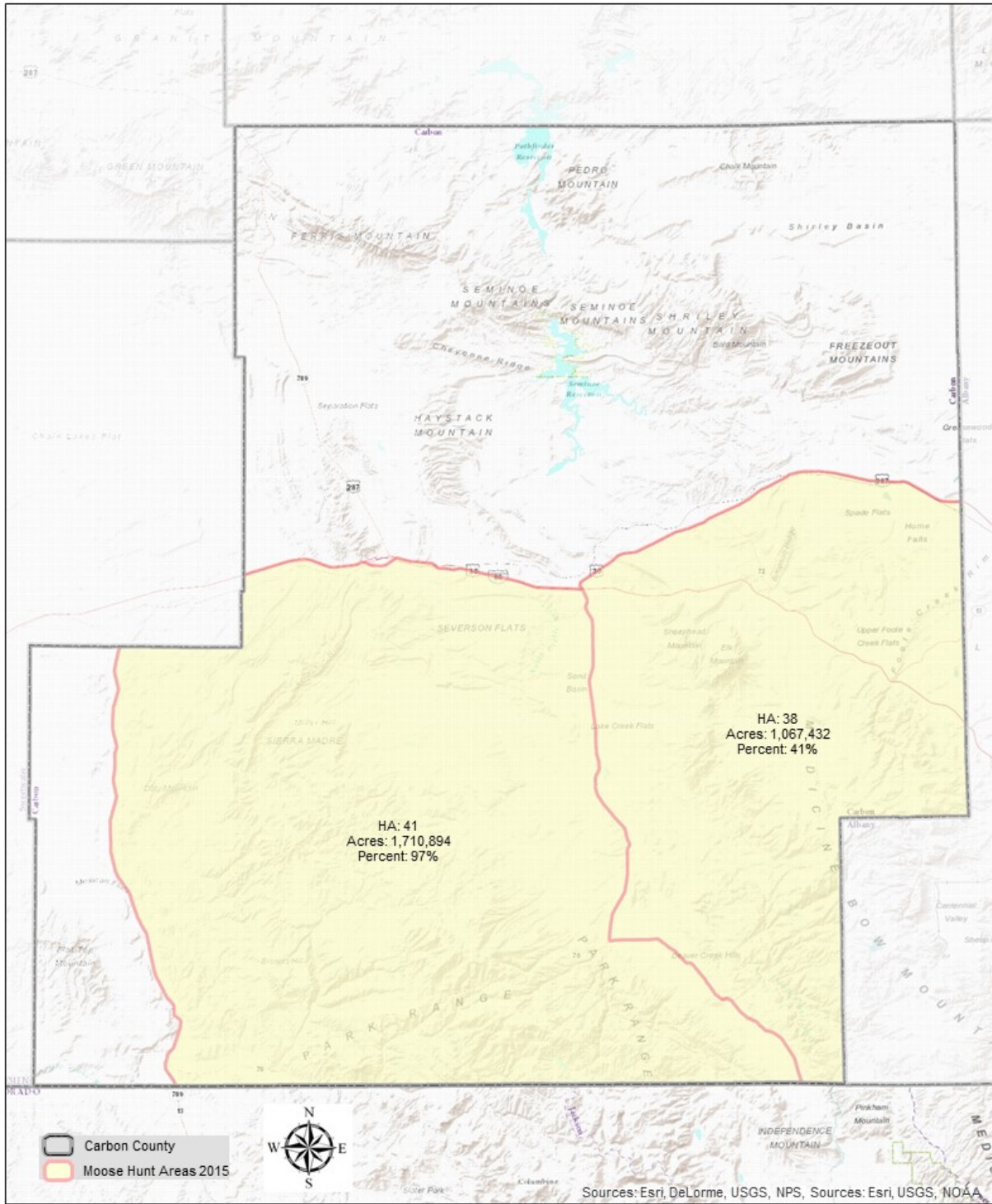
**Percentage of 2015 Black Bear Hunt Areas (HA) within Carbon County**



**Percentage of 2015 Deer Hunt Areas (HA) within Carbon County**



**Percentage of 2015 Elk Hunt Areas (HA) within Carbon County**



**Percentage of 2015 Moose Hunt Areas (HA) within Carbon County**