

Deer Population and Deer Vehicle Accident Trend Summary

2012 - 2017

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Introduction

A primary goal of the Kansas Department of Wildlife, Parks and Tourism's Big Game Program is to manage deer populations within both the biological and social carrying capacity of the state of Kansas. Due to generally good quality deer habitat, deer populations rarely reach the biological carrying capacity before reaching the social carrying capacity. One important factor in determining the social carrying capacity is deer-vehicle accidents.

Deer-vehicle accidents tend to increase or decline as deer populations increase or decline, although the relationship between deer populations and deer-vehicle accidents is not necessarily linear. Thus, the total number of accidents or accident rates can only be used as an index to the deer population and cannot be used to predict a population size. Further confounding the relationship, other factors affect the deer-vehicle and deer population relationship. A few of these include: the definition of a deer-vehicle accident, speed limits, reporting rates of accidents, and how many miles are traveled by motorists.

How a deer-vehicle accident is defined affects the total number of accidents in a year. A broad definition that includes any accident in which a deer is blamed, including those with no evidence that deer were present or in which an accident is incorrectly attributed to deer (e.g. A driver falls asleep and crashes yet claims they crashed because they swerved to miss a deer) increases the total accidents, and likely includes most if not all accidents due to deer. The inclusion of accidents without evidence of deer presence or accidents incorrectly attributed to deer introduces error that results in less definite relationship between deer populations and deer vehicle accidents. A narrow definition in which an accident is only counted as a deer-vehicle accident if there is physical proof of a vehicle striking a deer provides for a more accurate relationship between deer populations and deer vehicle accidents but would underestimate the total impact of deer populations on accidents. Regardless of definition, accidents need to be reported in a timely fashion for best use of the information in deer vehicle and deer population management. Failure or inability of law enforcement agencies to share information on deer vehicle accidents results could result in accident information that does not relate well to deer populations. In rural areas where deer vehicle encounters may be more common, some vehicles have been modified with heavy steel guards that reduce vehicle damage due to deer impacts. Often these incidences are not reported. Failure of drivers to report deer vehicle impacts, even when an accident did not occur because no vehicle damage was sustained, can reduce the effectiveness of deer vehicle accidents as an index of deer populations.

Deer vehicle accidents increase as speed limits increase. The faster a driver travels, the less time there is to react to objects in the road, including deer. This is magnified during night driving and especially during the morning and evening when deer are more active, visibility is reduced, and headlights are less effective. The role of advancements in automotive headlight technology and accident avoidance systems have not been adequately evaluated yet but have potential to reduce deer vehicle accidents.

Better economic conditions increase the number of miles motorists travel and poor economic conditions reduce the number of miles motorists travel. If all else were equal and the

deer population stays the same, any increase or decrease in the total number of accidents in a year are a result of the respective increase or decrease in miles traveled by motorists. To account for differences between years in the number of miles traveled total accidents and miles traveled should be standardized to an accident rate, in other words – the number of accidents per a set number of miles.

Conditions in Kansas

In Kansas, any accident with a \$1000 or more in damage must be reported to law enforcement. These reports are collected by a duly authorized police authority which would include Kansas Highway Patrol, the county sheriff's office, or local police department. The Kansas Department of Transportation maintains a database of accidents in which the Kansas Highway Patrol responds to those accidents reported to KDOT. The KDOT definition of a deer vehicle accident is fairly broad. KDWPT doesn't collect deer vehicle accident data, and instead requests data from KDOT for the total accidents by county and the daily miles traveled by county. Deer vehicle accidents and daily miles traveled are converted to a standardized accidents per one billion miles traveled. Leap days are not factored into the equation; if they were included, accident rates would for leap years be lower by approximately 0.5 accidents per billion miles traveled.

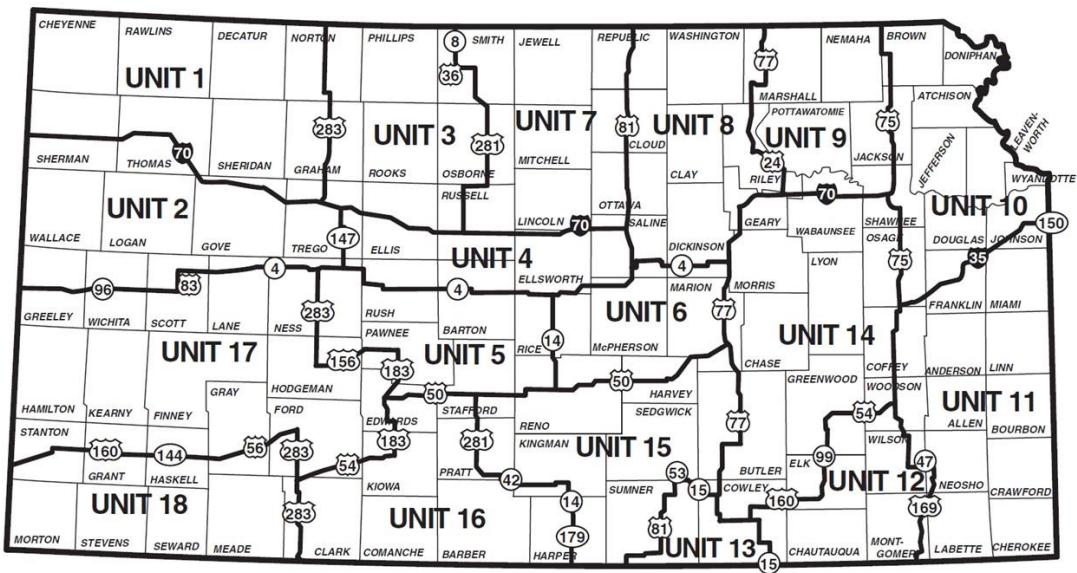
$$\text{ACCIDENT RATE} = \left(\frac{\text{TOTAL DEER VEHICLE ACCIDENTS IN A YEAR}}{(\text{DAILY MILES TRAVELED} \times 365)} \right) \times 1 \text{ BILLION}$$

Since DMUs utilize well known major roadways for boundaries, not county boundaries and are typically span several counties or portions thereof, the accident and total miles traveled are grouped for counties within the boundaries. For counties that are not wholly contained within a DMU, the number of accidents and the daily miles traveled include for the DMU are proportional to the area of the county within the DMU.

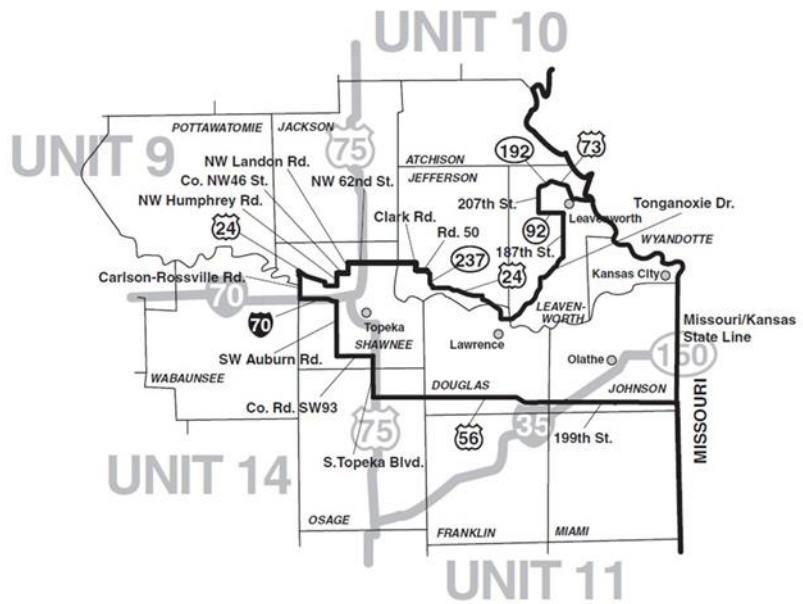
Example: Comium County is located on the boundary of two DMUs, with 75% of the county's area in DMU Magnus and 25% in DMU Minutus. There were 200 accidents over a year in the Comium County and the average daily miles traveled in Comium is 1,000,000. Thus 150 accidents and 750,000 miles traveled would be included toward the totals for DMU Magnus and included toward the totals for DMU Minutus would be 50 accidents and 250,000 miles traveled. Thus, Comium County is proportionally represented in both DMUs in which it occurs.

The DMUs in Kansas vary in total area, thus to be able to compare a DMU's deer population to the neighboring DMUs, deer populations are reported by density - the number of deer per square mile. KDWPT collects deer population data using spotlight distance sampling surveys for each of the deer management units (DMUs). The statistical analysis of the spotlight survey for deer population provides the density estimate for each DMU and a total deer population size is developed by multiplying the density per square mile by the total square miles in a DMU.

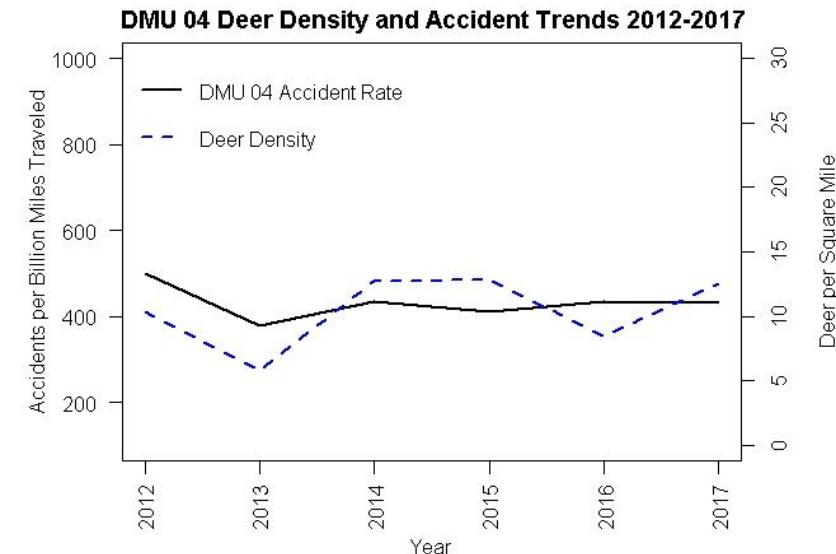
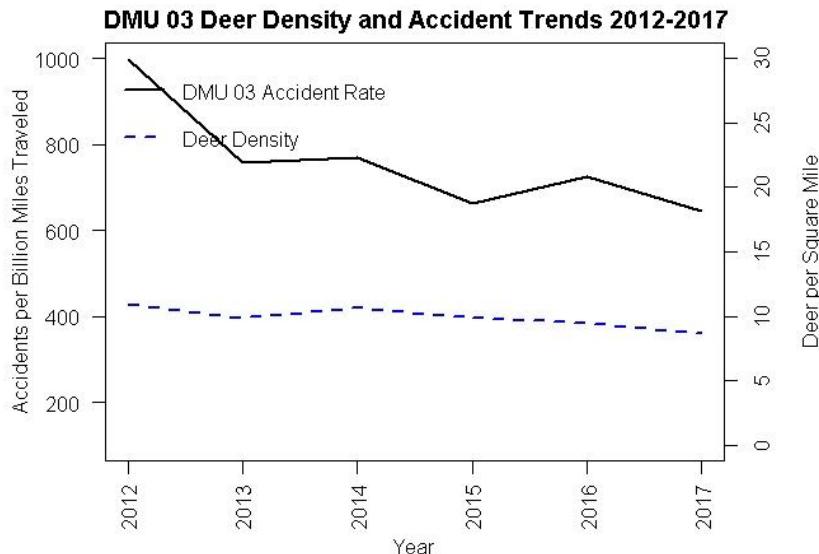
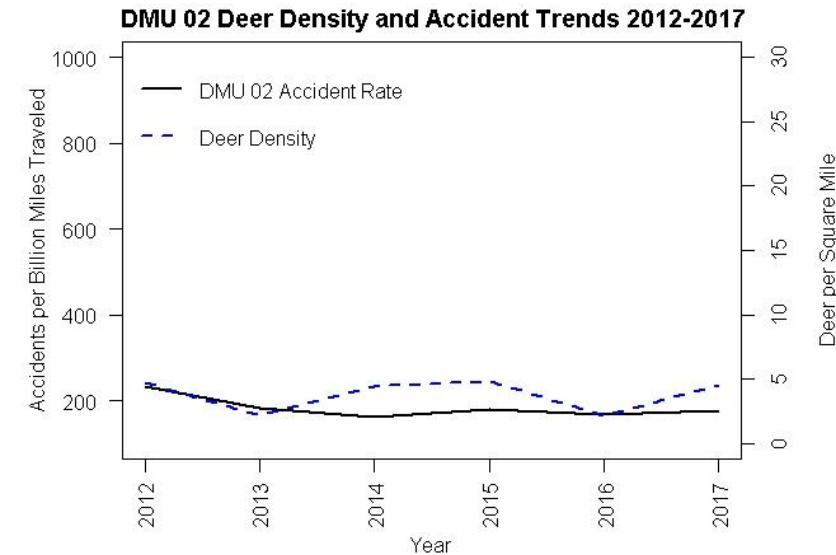
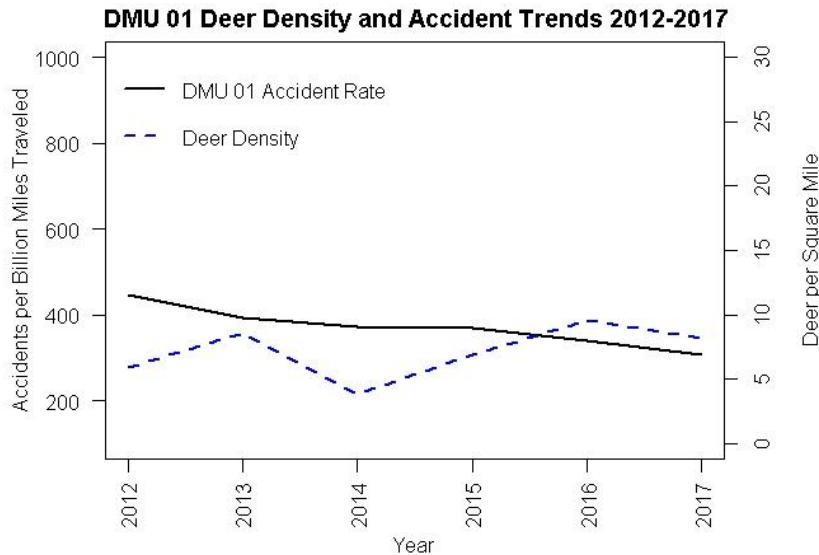
Kansas Deer Management Units

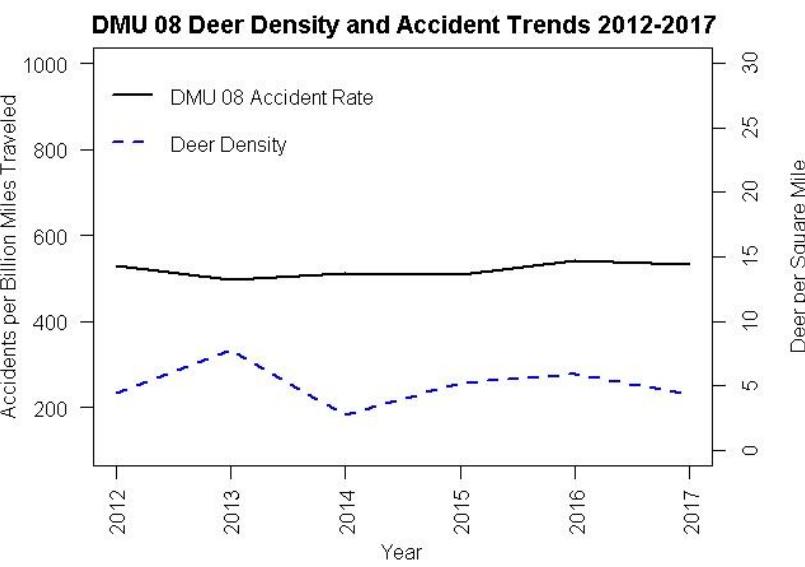
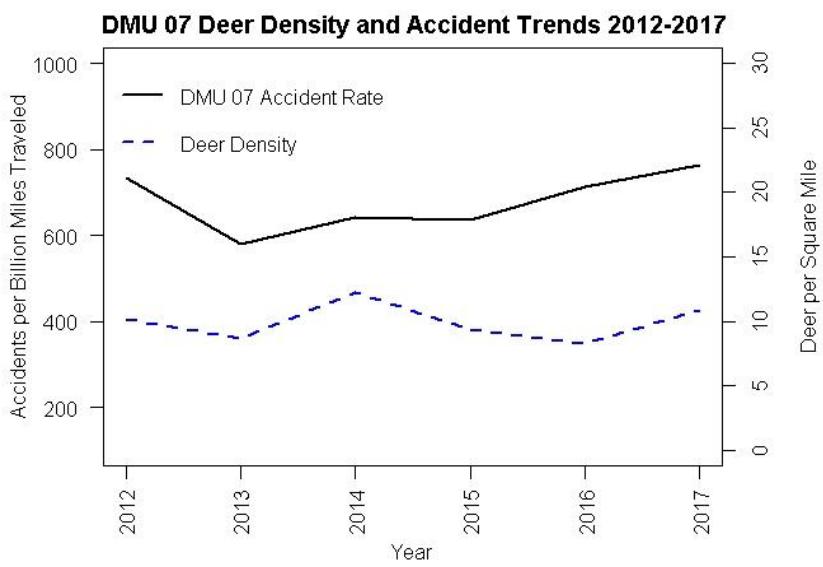
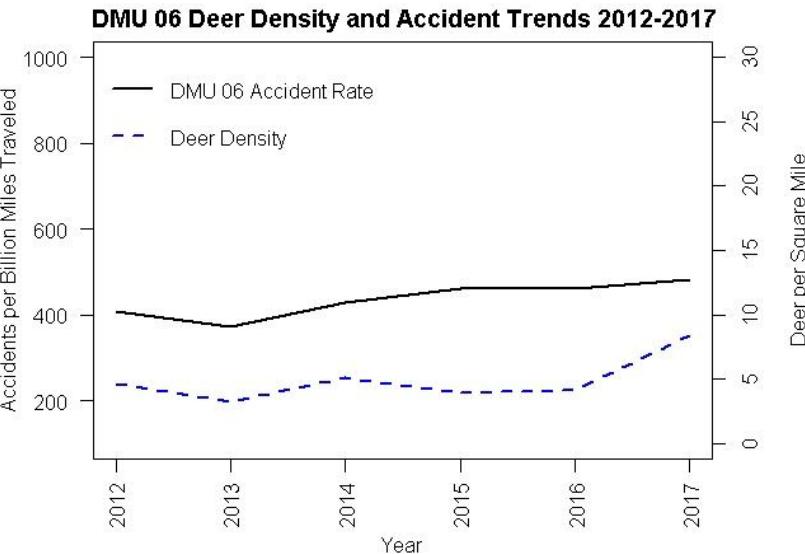
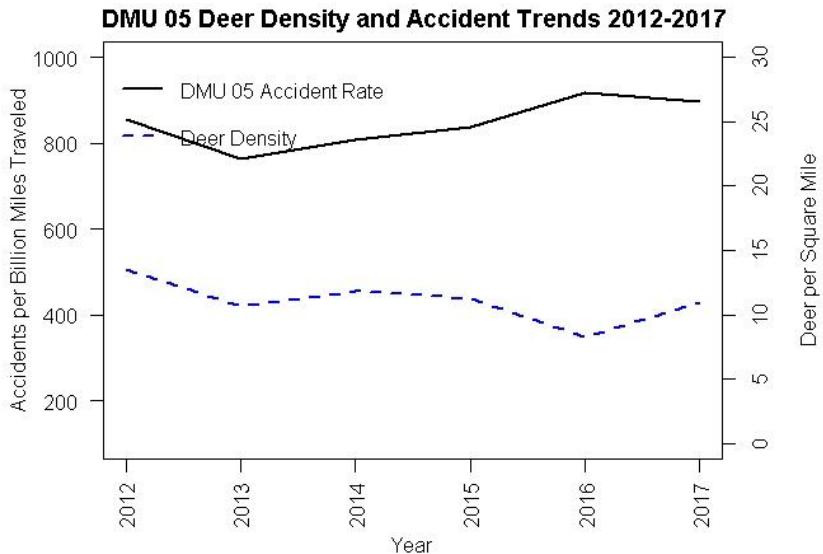


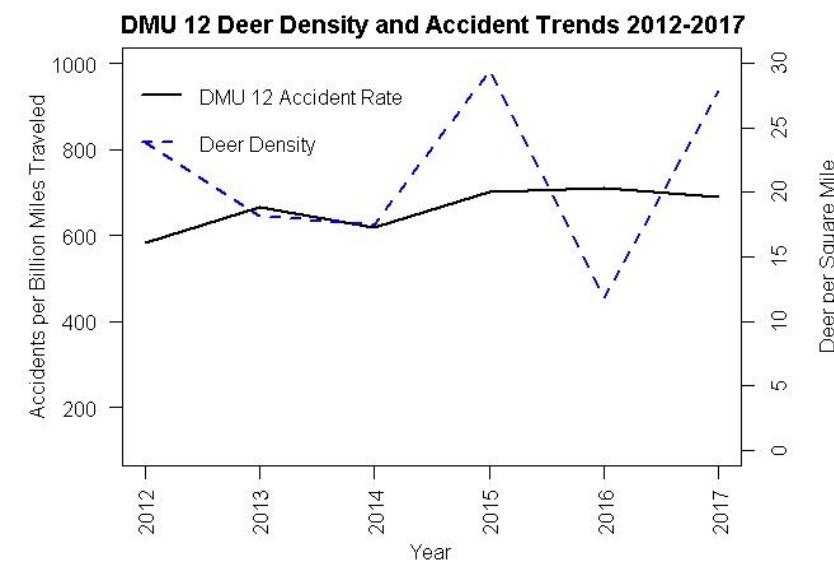
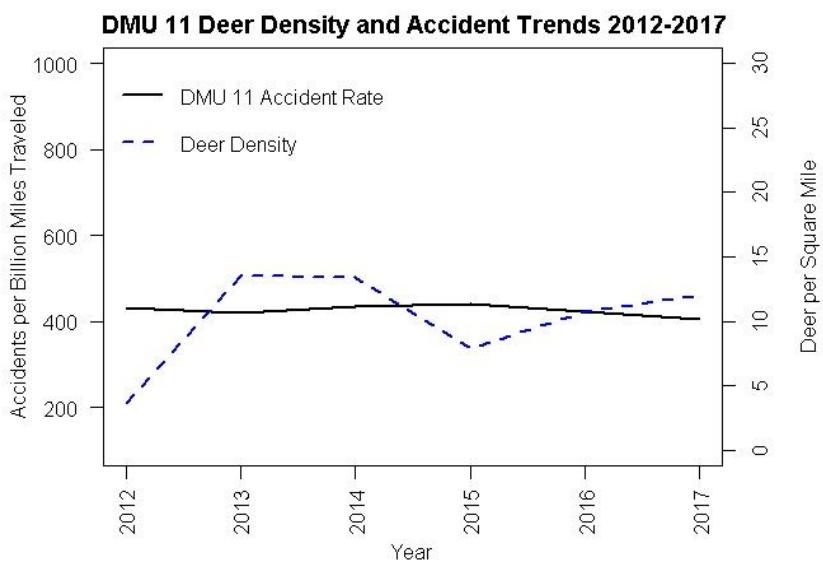
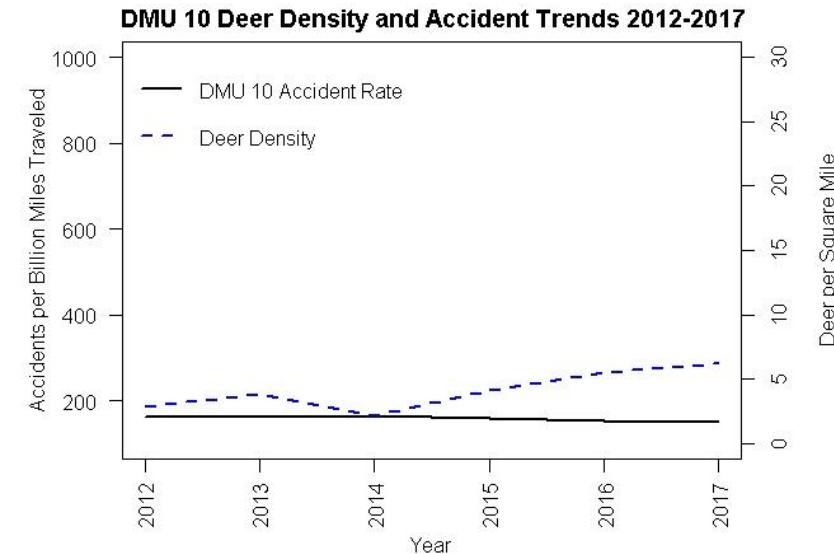
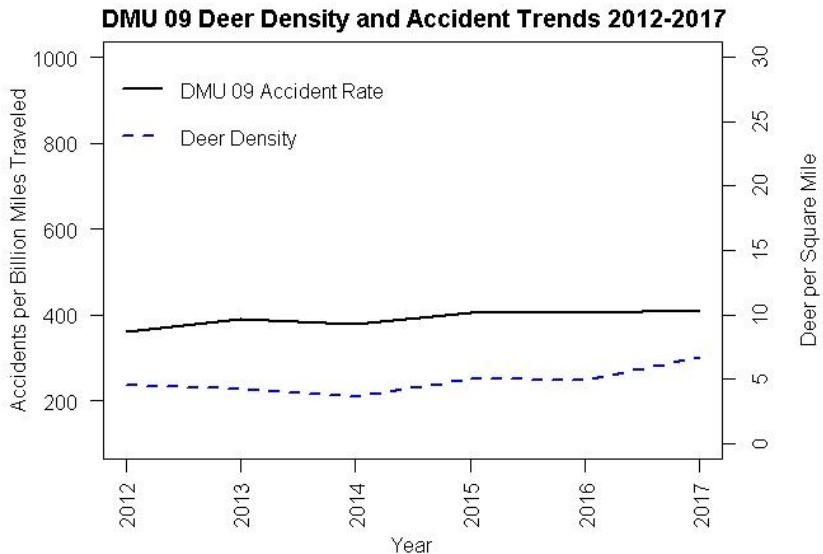
Deer Management Unit 19

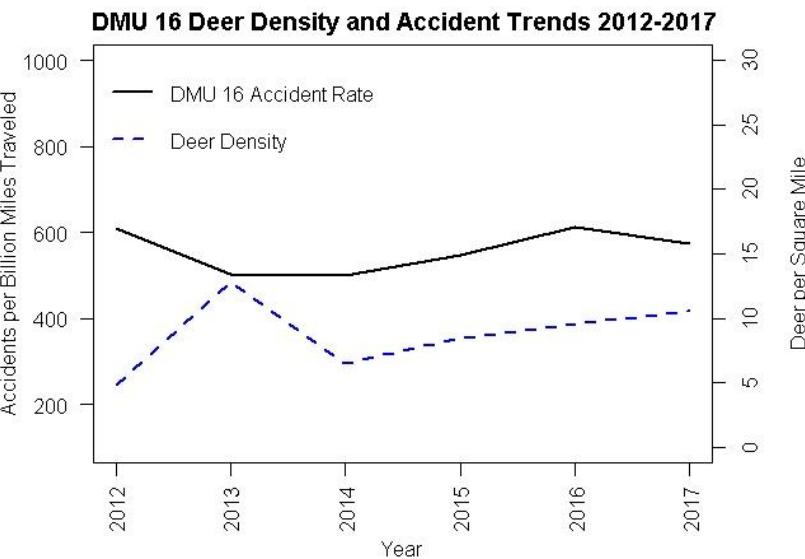
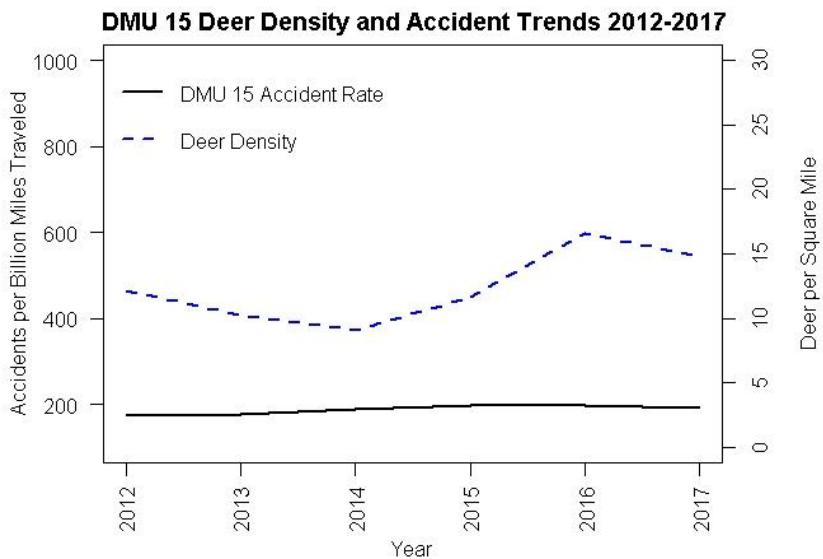
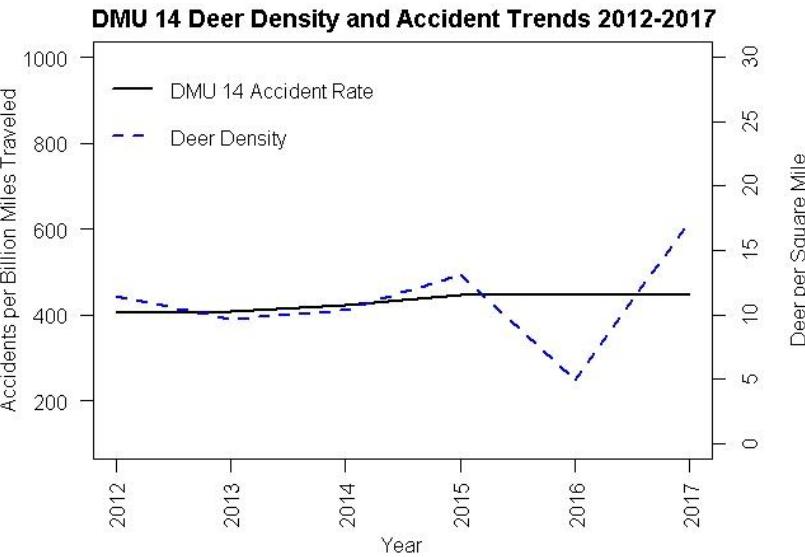
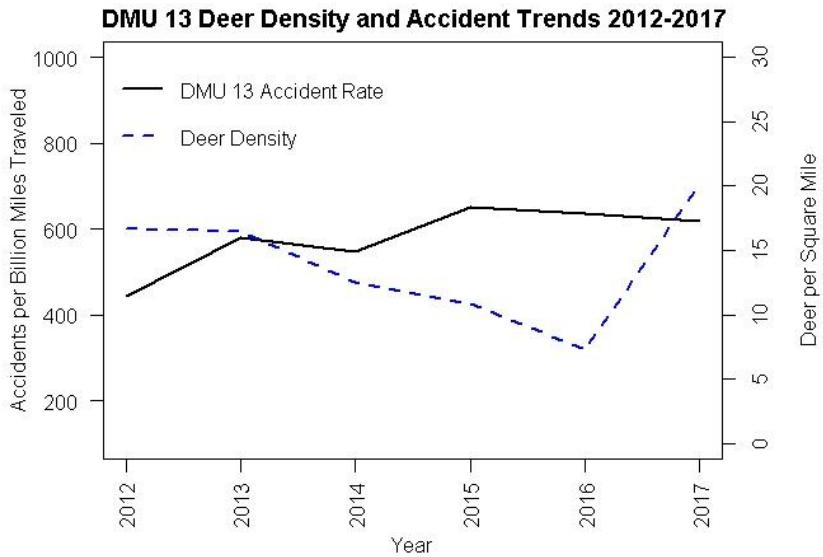


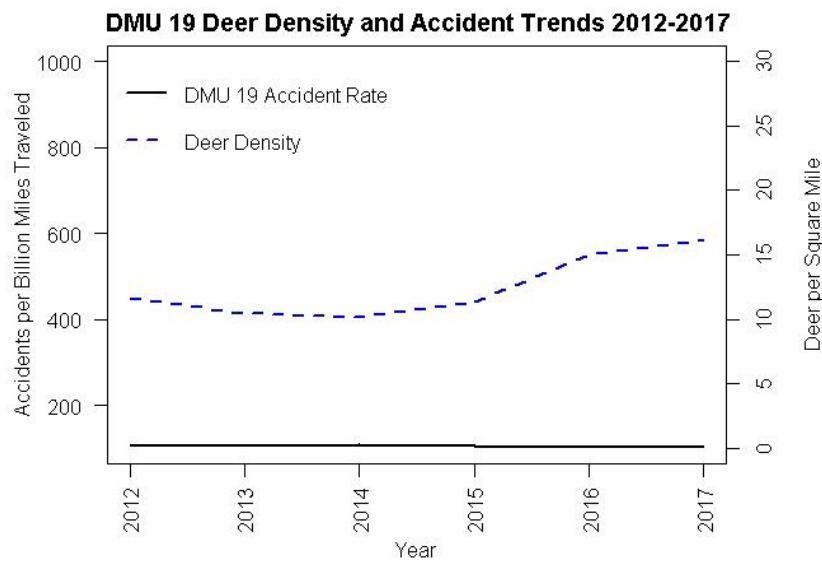
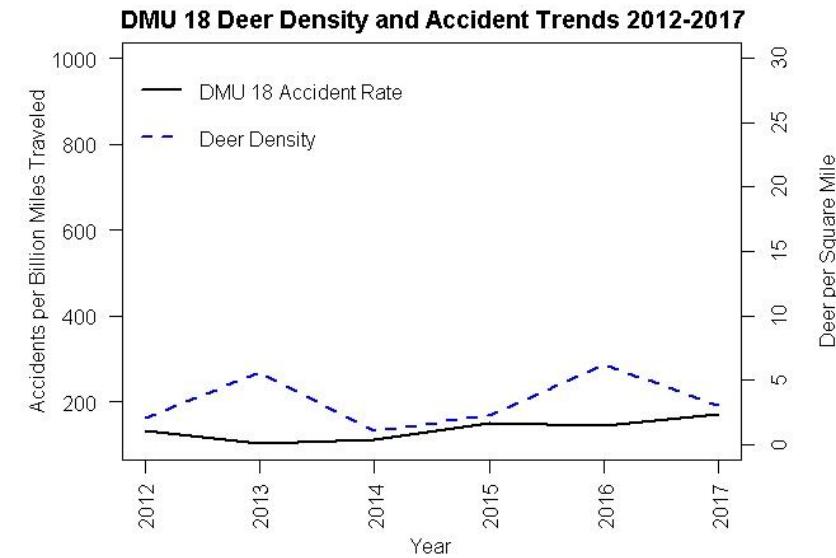
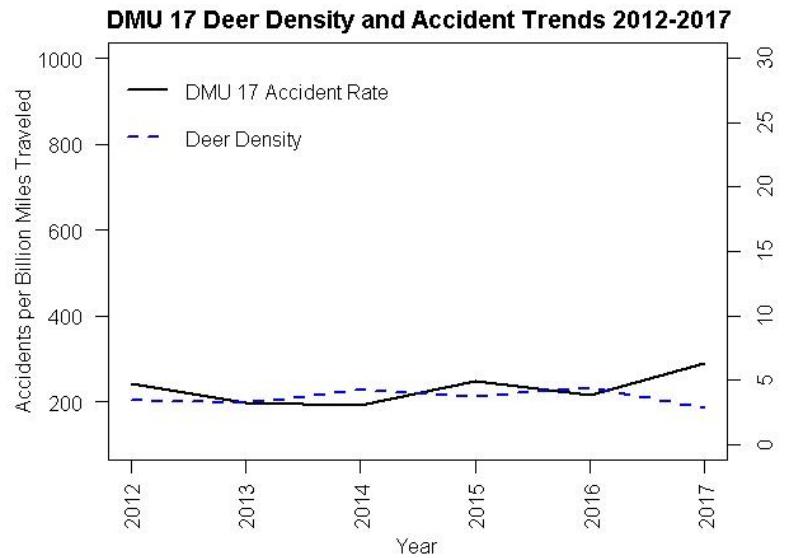
Graphical Comparisons of Deer Vehicle Accident Trends











Data Tables

Deer Density Estimates and Deer Management Unit Area 2012 – 2018. Estimates are from fall KDWPT deer spotlight distance sampling survey.

Unit	DMU Miles ²	2012	2013	2014	2015	2016	2017	2018
DMU01	6252.15	5.94	8.62	3.90	6.88	9.56	8.23	6.28
DMU02	5558.29	4.70	2.14	4.45	4.85	2.18	4.57	3.58
DMU03	4262.76	11.00	9.87	10.65	9.87	9.49	8.67	7.57
DMU04	2599.72	10.38	5.82	12.72	12.82	8.52	12.56	8.81
DMU05	3356.25	13.55	10.63	11.85	11.31	8.34	10.99	8.02
DMU06	2609.87	4.61	3.24	5.11	4.00	4.15	8.40	5.39
DMU07	4751.18	10.15	8.70	12.22	9.39	8.32	10.90	10.32
DMU08	4379.71	4.42	7.82	2.81	5.28	5.92	4.38	7.13
DMU09	3155.30	4.57	4.27	3.68	5.08	4.91	6.68	6.29
DMU10	2350.71	2.90	3.89	2.18	4.13	5.58	6.21	6.13
DMU11	7015.79	3.66	13.49	13.44	7.87	10.76	12.10	16.88
DMU12	2575.54	23.85	18.14	17.45	29.43	11.85	27.88	20.02
DMU13	921.68	16.70	16.47	12.51	10.90	7.30	20.10	19.42
DMU14	6695.51	11.41	9.72	10.34	13.15	4.96	17.26	19.01
DMU15	5137.40	12.12	10.30	9.05	11.65	16.56	14.85	12.58
DMU16	4692.65	4.85	12.82	6.56	8.51	9.56	10.61	14.33
DMU17	8960.70	3.46	3.26	4.28	3.73	4.47	2.86	3.14
DMU18	4487.74	2.11	5.59	1.05	2.25	6.24	3.07	3.05
DMU19	1644.19	11.69	10.52	10.14	11.39	14.97	16.21	12.94

Deer Population Estimates 2012 – 2018 by Deer Management Unit. Conversion of deer density to DMU population estimate may not match exactly due to rounding. Total yearly Kansas deer population estimate would be the total of the first 18 DMUs and does not include DMU 19 which is part of other DMUs.

Unit	2012	2013	2014	2015	2016	2017	2018
DMU01	37142	53894	24383	43030	59775	51479	39294
DMU02	26124	11895	24734	26935	12108	25392	19900
DMU03	46890	42073	45398	42087	40471	36941	32287
DMU04	26985	15130	33068	33328	22146	32660	22912
DMU05	45477	35677	39772	37952	27985	36880	26906
DMU06	12032	8456	13336	10443	10831	21914	14055
DMU07	48224	41335	58059	44609	39517	51807	49039
DMU08	19358	34249	12307	23141	25923	19186	31240
DMU09	14420	13473	11611	16028	15503	21069	19856
DMU10	6817	9144	5125	9715	13108	14599	14402
DMU11	25678	94643	94257	55235	75511	84878	118397
DMU12	61427	46720	44943	75798	30509	71809	51563
DMU13	15392	15180	11530	10048	6730	18524	17898
DMU14	76396	65080	69232	88021	33184	115571	127291
DMU15	62265	52915	46493	59868	85084	76303	64604
DMU16	22759	60160	30784	39949	44870	49778	67233
DMU17	31004	29212	38352	33383	40085	25609	28093
DMU18	9469	25086	4712	10114	27998	13793	13692
DMU19	19224	17293	16670	18721	24611	26649	21274

Kansas Deer Vehicle Accident Rates by Deer Management Unit. Accident rate is number of deer vehicle accidents per one billion miles traveled. Statewide average for Kansas included for comparison.

Unit	2012	2013	2014	2015	2016	2017
DMU01	448.08	392.83	373.04	369.52	339.51	306.87
DMU02	232.86	182.93	163.45	180.42	167.37	176.88
DMU03	996.47	756.92	768.83	664.05	725.86	645.82
DMU04	498.62	379.26	434.06	411.73	435.40	431.31
DMU05	855.31	762.54	807.19	838.65	917.87	896.00
DMU06	409.29	373.66	429.77	462.69	462.02	480.88
DMU07	733.85	580.31	642.29	635.92	713.63	763.29
DMU08	529.77	497.10	511.08	507.64	539.99	532.27
DMU09	360.76	391.10	378.00	404.17	404.26	411.59
DMU10	163.51	162.92	165.59	160.74	154.60	151.31
DMU11	430.50	420.18	434.54	442.09	421.94	406.46
DMU12	581.94	665.50	617.56	702.19	709.15	689.03
DMU13	444.74	580.78	547.81	650.37	634.76	618.42
DMU14	405.70	408.17	424.29	446.05	446.07	446.07
DMU15	174.78	178.50	189.38	198.80	198.56	190.93
DMU16	610.62	503.09	499.51	547.95	613.36	574.32
DMU17	242.81	199.22	191.13	247.01	214.98	289.39
DMU18	134.16	103.55	113.51	152.10	145.16	171.12
DMU19	110.03	105.93	109.02	105.98	102.42	104.93
Kansas	319.40	303.40	312.87	321.84	321.07	317.35

Yearly Accident Totals. Accident totals for each year are requested the following year from KDOT once compilation is complete.

COUNTY	2012	2013	2014	2015	2016	2017
ALLEN	107	79	117	130	109	118
ANDERSON	84	79	88	98	87	106
ATCHISON	54	64	65	66	69	58
BARBER	95	68	73	68	70	77
BARTON	200	178	190	191	193	193
BOURBON	108	114	125	51	57	76
BROWN	89	104	97	86	93	76
BUTLER	323	302	360	358	386	438
CHASE	22	34	34	43	47	63
CHAUTAUQUA	30	22	30	39	27	42
CHEROKEE	206	196	204	224	218	184
CHEYENNE	20	15	14	14	12	10
CLARK	18	8	11	22	20	19
CLAY	74	84	86	100	132	72
CLOUD	102	67	78	88	77	94
COFFEY	117	140	118	156	157	166
COMANCHE	8	0	2	0	2	7
COWLEY	213	238	231	277	295	269
CRAWFORD	176	199	210	197	204	170
DECATUR	1	4	5	4	5	7
DICKINSON	158	138	132	119	109	126
DONIPHAN	54	52	41	33	27	19
DOUGLAS	207	240	198	242	262	313
EDWARDS	44	28	20	29	27	23
ELK	26	21	22	12	20	1
ELLIS	160	106	121	106	106	122
ELLSWORTH	109	84	121	117	106	115
FINNEY	36	39	36	48	56	54
FORD	84	55	64	86	69	111
FRANKLIN	162	150	131	164	146	143
GEARY	108	138	134	162	141	118
GOVE	40	31	14	27	25	28
GRAHAM	62	57	57	68	69	52
GRANT	9	12	13	14	24	19
GRAY	16	16	22	17	27	22
GREELEY	3	2	5	6	6	4
GREENWOOD	66	64	77	61	62	48
HAMILTON	18	15	6	4	8	24

Yearly Accident Totals Continued.

COUNTY	2012	2013	2014	2015	2016	2017
HARPER	89	82	91	92	123	44
HARVEY	79	82	119	132	114	132
HASKELL	1	8	2	9	8	9
HODGEMAN	31	26	19	43	9	38
JACKSON	61	96	117	100	121	94
JEFFERSON	119	108	121	135	138	117
JEWELL	33	37	35	39	50	53
JOHNSON	342	329	323	325	371	340
KEARNY	33	24	20	28	20	36
KINGMAN	140	116	133	143	140	134
KIOWA	34	40	21	27	23	29
LABETTE	169	136	156	166	165	193
LANE	1	0	3	5	6	11
LEAVENWORTH	212	185	220	207	190	234
LINCOLN	58	33	45	50	64	67
LINN	93	92	91	98	113	92
LOGAN	11	8	9	13	16	18
LYON	219	193	204	214	249	216
MARION	114	117	101	125	125	136
MARSHALL	73	87	79	87	77	105
MCPHERSON	148	128	171	171	164	167
MEADE	19	14	16	25	22	25
MIAMI	220	204	208	200	216	192
MITCHELL	94	65	69	67	72	84
MONTGOMERY	179	210	159	203	233	206
MORRIS	60	51	52	69	46	64
MORTON	6	3	5	11	4	9
NEMAHA	68	62	53	67	74	51
NEOSHO	167	153	160	204	172	165
NESS	27	18	29	32	30	30
NORTON	122	108	123	124	111	82
OSAGE	115	136	131	132	123	90
OSBORNE	57	52	55	66	64	58
OTTAWA	58	56	79	53	61	84
PAWNEE	136	102	117	111	109	100
PHILLIPS	95	48	42	33	40	22
POTAWATOMIE	134	154	152	176	167	168
PRATT	66	65	58	53	72	83
RAWLINS	22	11	8	9	9	16

Yearly Accident Totals Continued.

COUNTY	2012	2013	2014	2015	2016	2017
RENO	282	234	240	291	327	275
REPUBLIC	46	47	34	49	74	64
RICE	70	73	100	125	143	151
RILEY	165	149	172	183	174	201
ROOKS	140	115	114	72	110	98
RUSH	106	93	85	79	118	93
RUSSELL	129	91	88	89	127	108
SALINE	135	98	109	125	158	141
SCOTT	10	11	13	7	4	10
SEDWICK	380	394	422	423	400	385
SEWARD	17	16	18	24	28	34
SHAWNEE	263	248	270	281	271	321
SHERIDAN	34	32	20	26	24	20
SHERMAN	22	18	22	24	17	24
SMITH	65	64	67	60	56	64
STAFFORD	74	91	98	88	95	102
STANTON	2	2	0	0	0	0
STEVENS	14	5	7	1	0	0
SUMNER	108	189	174	208	189	207
THOMAS	43	36	40	29	37	34
TREGO	51	40	48	59	50	46
WABAUNSEE	70	62	79	79	78	92
WALLACE	7	5	1	1	2	3
WASHINGTON	107	96	116	111	119	131
WICHITA	12	6	9	9	9	9
WILSON	70	84	100	98	81	106
WOODSON	42	57	46	56	38	59
WYANDOTTE	160	127	168	131	89	63

Daily Miles Traveled by County. Estimates of average daily miles traveled totals for each year are requested the following year from KDOT once compilation is complete.

COUNTY	2012	2013	2014	2015	2016	2017
ALLEN	397204.6	400234.1	411393.0	413920.0	374538.6	379362.1
ANDERSON	300957.1	291030.7	304800.0	306159.0	308214.0	320579.5
ATCHISON	377118.4	356653.7	359058.0	362824.0	371805.0	373247.2
BARBER	238061.8	238692.6	233780.0	217681.0	201557.7	199270.2
BARTON	728813.3	721372.0	739826.0	750243.0	724258.1	714645.8
BOURBON	417819.1	389695.1	402015.0	405725.0	434918.4	440907.7
BROWN	406731.2	414099.6	420971.0	407506.0	416457.8	415822.6
BUTLER	2038697.3	2020686.0	2050481.0	2091189.0	2123140.0	2135855.0
CHASE	438427.2	428594.6	432897.0	449509.0	467752.1	492104.5
CHAUTAUQUA	112517.9	114573.9	113860.0	114495.0	119706.7	121022.3
CHEROKEE	750532.6	736539.2	747355.0	740618.0	746141.4	760157.1
CHEYENNE	117401.5	109100.2	112110.0	124128.0	127592.4	110401.0
CLARK	136224.9	136602.4	132879.0	131070.0	131916.9	133251.9
CLAY	223372.2	226324.4	212929.0	212320.0	216963.2	219535.3
CLOUD	348431.3	329395.3	332950.0	344739.0	352887.7	354466.7
COFFEY	435648.8	454501.4	475615.0	482079.0	448140.5	452247.4
COMANCHE	108471.9	108710.3	98913.0	84373.0	81011.4	79934.8
COWLEY	846833.0	836243.5	826107.0	848554.0	891710.5	889507.5
CRAWFORD	809577.3	779001.6	803252.0	825749.0	818487.4	819530.9
DECATUR	146651.0	133583.5	129846.0	131337.0	135353.6	140339.7
DICKINSON	743267.5	723173.9	730468.0	771805.0	793646.8	784210.0
DONIPHAN	254905.4	256641.4	259901.0	262130.0	260233.3	278754.8
DOUGLAS	2690040.2	2589038.9	2626762.0	2715363.0	2852926.7	2983273.9
EDWARDS	165499.5	164284.3	164252.0	163184.0	180670.5	178213.9
ELK	81594.0	82305.9	78052.0	78313.0	77633.6	78509.8
ELLIS	966129.7	984097.2	998566.0	1037283.0	1082516.5	1036009.1
ELLSWORTH	478177.1	488985.2	494352.0	528464.0	562066.7	552548.4
FINNEY	787655.6	789748.7	825210.0	829306.0	884239.0	884620.1
FORD	919224.1	910428.0	903325.0	881789.0	898589.7	898154.4
FRANKLIN	977463.7	989937.3	1033393.0	1051752.0	1074353.3	1086601.8
GEARY	980812.7	1004367.6	1052324.0	1108271.0	1124579.8	1090878.2
GOVE	412855.8	417412.6	445309.0	495650.0	521236.3	516941.0
GRAHAM	115244.9	116949.3	117853.0	111028.0	113649.5	113672.1
GRANT	216345.9	217405.6	218082.0	209333.0	215710.6	218113.6
GRAY	341956.2	337938.2	340212.0	332242.0	338557.4	341688.2
GREELEY	77119.7	76483.1	81536.0	76204.0	75183.7	75923.5
GREENWOOD	331116.5	346669.9	323397.0	323499.0	349463.0	351511.3
HAMILTON	133048.6	130941.1	129024.0	133735.0	127030.7	127957.1

Daily Miles Traveled by County Continued.

COUNTY	2012	2013	2014	2015	2016	2017
HARPER	275150.3	273073.0	252482.0	237619.0	214008.2	211541.5
HARVEY	1049743.1	1048693.7	1083965.0	1106514.0	1079132.1	1086441.6
HASKELL	274455.4	274093.0	269790.0	257914.0	265216.4	267859.0
HODGEMAN	129487.7	128575.7	125103.0	122287.0	118897.2	120233.5
JACKSON	468765.2	440734.9	446287.0	450663.0	451275.4	438532.1
JEFFERSON	535344.5	542543.7	527265.0	518395.0	531593.2	572130.4
JEWELL	126830.7	130919.8	136704.0	137714.0	140629.5	132939.5
JOHNSON	13835273.9	13858807.5	13824818.0	14232581.0	14944363.2	15186091.7
KEARNY	197473.5	197032.3	184300.0	172434.0	178270.4	180057.0
KINGMAN	427144.0	422175.3	425758.0	403575.0	418602.3	411313.1
KIOWA	246429.3	242246.8	244058.0	228626.0	240914.2	236862.3
LABETTE	554344.3	533688.7	541358.0	548339.0	558230.2	563380.8
LANE	93068.9	91538.1	94492.0	93167.0	91912.0	92665.7
LEAVENWORTH	1751435.2	1677643.5	1723266.0	1968322.0	1921784.3	1792450.5
LINCOLN	206252.5	209357.7	193359.0	209829.0	219497.6	202457.8
LINN	349844.2	364799.3	384962.0	385723.0	372388.5	378241.3
LOGAN	151647.8	138147.4	144151.0	160705.0	164058.3	177844.8
LYON	1120125.0	1089600.7	1115459.0	1145528.0	1164717.8	1188438.7
MARION	450563.0	436675.3	430392.0	451560.0	458080.7	443358.2
MARSHALL	336274.4	343753.9	347220.0	344419.0	351373.1	338773.8
MCPHERSON	1086784.5	1110860.2	1125776.0	1179265.0	1210959.2	1179376.7
MEADE	233469.5	232157.4	243010.0	249970.0	252090.0	254053.7
MIAMI	1186617.5	1129489.6	1131367.0	1138061.0	1231108.2	1252527.7
MITCHELL	226850.7	219592.0	209195.0	205565.0	210804.6	211972.1
MONTGOMERY	957414.5	909362.8	917600.0	921587.0	910519.5	926738.5
MORRIS	179200.4	178264.2	166154.0	170466.0	175298.5	181258.1
MORTON	109634.3	107186.9	111828.0	114803.0	115706.3	116413.1
NEMAHA	285359.7	266987.1	270893.0	265399.0	270275.6	276905.3
NEOSHO	476478.3	472453.4	474697.0	478230.0	485992.0	492623.9
NESS	169822.5	168942.5	167011.0	164507.0	151398.3	152470.5
NORTON	186357.9	175534.1	178713.0	187924.0	191083.2	210190.7
OSAGE	666107.9	677291.7	693592.0	679513.0	703196.3	710205.7
OSBORNE	123218.9	118722.5	117929.0	126293.0	128839.7	118891.1
OTTAWA	301712.1	296173.4	293653.0	306601.0	313688.6	311364.0
PAWNEE	240301.6	240102.9	245661.0	244899.0	242495.7	238734.1
PHILLIPS	210869.8	208576.9	221001.0	209602.0	211960.6	228069.8
POTTAWATOMIE	631970.1	618202.7	620823.0	606481.0	629679.9	642848.5
PRATT	429806.4	427809.3	445718.0	439777.0	430338.6	425037.0
RAWLINS	109837.4	111872.8	116539.0	119654.0	122676.2	110182.5

Daily Miles Traveled by County Continued.

COUNTY	2012	2013	2014	2015	2016	2017
RENO	1482529.1	1470030.3	1551639.0	1528253.0	1533562.5	1522622.8
REPUBLIC	247616.8	241905.7	237216.0	245384.0	249984.1	257239.2
RICE	341656.2	337946.0	350457.0	337741.0	335871.6	331437.0
RILEY	1364910.0	1319379.5	1691907.0	1741029.0	1633009.0	1632943.4
ROOKS	215899.9	204345.2	204600.0	202398.0	206053.2	176038.2
RUSH	178704.1	177133.8	184100.0	185551.0	173999.5	170127.0
RUSSELL	506194.1	527476.7	522363.0	552145.0	577455.3	610306.3
SALINE	1759488.2	1771755.9	1764601.0	1827945.0	1889328.9	1862159.4
SCOTT	218331.9	217694.0	235087.0	245533.0	248972.9	250829.3
SEDWICK	12144370.5	11976491.1	12142329.0	12370782.0	12507845.8	12628109.8
SEWARD	551223.6	541482.0	569358.0	569718.0	575950.7	581969.4
SHAWNEE	4302575.4	4334831.0	4385107.0	4460387.0	4374380.9	4440028.5
SHERIDAN	138767.7	134159.4	135764.0	128798.0	132656.6	125446.6
SHERMAN	430629.9	422735.9	462860.0	500357.0	520335.6	518282.0
SMITH	157416.5	150513.5	140562.0	139560.0	142490.5	141852.6
STAFFORD	248602.3	247422.4	258291.0	246885.0	250559.6	248426.7
STANTON	110075.2	109180.1	103135.0	98769.0	100537.3	101356.6
STEVENS	246904.4	246868.5	258166.0	250883.0	254521.3	256146.1
SUMNER	1194622.9	1191748.0	1225193.0	1213886.0	1232504.5	1232150.0
THOMAS	600740.4	582061.0	607226.0	673862.0	705825.3	711977.0
TREGO	382615.0	393098.1	411254.0	442507.0	460646.7	476142.6
WABAUNSEE	608396.3	603081.3	615172.0	642387.0	666642.8	681557.4
WALLACE	85926.5	75927.1	73499.0	80186.0	82478.3	86898.8
WASHINGTON	241316.8	225799.8	220044.0	220202.0	224040.5	220441.9
WICHITA	96093.3	95486.3	104349.0	108328.0	110456.6	111172.9
WILSON	322162.0	305384.1	312252.0	313939.0	320405.2	318929.0
WOODSON	146760.5	141532.1	138080.0	143204.0	140154.6	143645.3
WYANDOTTE	4762275.2	4749393.4	4821889.0	4961682.0	5163289.3	5199427.6

County Proportional Inclusion in Deer Management Units. Proportions will sum to >1 if DMU 19 is included as it is part of other DMUs.

COUNTY	DMU 01	DMU 02	DMU 03	DMU 04	DMU 05	DMU 06	DMU 07	DMU 08	DMU 09	DMU 10	DMU 11	DMU 12	DMU 13	DMU 14	DMU 15	DMU 16	DMU 17	DMU 18	DMU 19
ALLEN											1.000								
ANDERSON											1.000								
ATCHISON										1.000									
BARBER																	1.000		
BARTON				0.376		0.624													
BOURBON											1.000								
BROWN									0.082	0.918									
BUTLER														0.600	0.400				
CHASE														1.000					
CHAUTAUQUA											1.000								
CHEROKEE											1.000								
CHEYENNE	1.000																		
CLARK																0.802	0.003	0.195	
CLAY									1.000										
CLOUD								0.477	0.523										
COFFEY											0.000	0.512			0.488				
COMANCHE																1.000			
COWLEY												0.209	0.456	0.300	0.035				
CRAWFORD											1.000								
DECATUR	1.000																		
DICKINSON								0.152		0.842					0.006				
DONIPHAN											1.000								
DOUGLAS											1.000								0.844
EDWARDS								0.116								0.447	0.436		
ELK												0.635		0.365					
ELLIS		0.514	0.486																
ELLSWORTH			0.942	0.003	0.023	0.032													
FINNEY																1.000			
FORD																0.080	0.754	0.167	
FRANKLIN											0.431	0.569							
GEARY									0.259	0.129					0.612				
GOVE	0.086	0.914																	
GRAHAM	0.556		0.444														0.478	0.522	
GRANT																	0.753	0.248	
GRAY																	0.453		
GREELEY		0.547																	
GREENWOOD												0.214		0.786					
HAMILTON																	0.982		

County Proportional Inclusion in Deer Management Units Continued.

County Proportional Inclusion in Deer Management Units Continued.

COUNTY	DMU 01	DMU 02	DMU 03	DMU 04	DMU 05	DMU 06	DMU 07	DMU 08	DMU 09	DMU 10	DMU 11	DMU 12	DMU 13	DMU 14	DMU 15	DMU 16	DMU 17	DMU 18	DMU 19
RENO						0.163	0.220									0.617			
REPUBLIC								0.527	0.473										
RICE				0.002	0.494	0.505													
RILEY								0.329	0.654						0.017				
ROOKS		1.000																	
RUSH					0.423	0.577													
RUSSELL			0.209	0.384			0.407												
SALINE				0.424		0.131	0.111	0.334											
SCOTT		0.367														0.633			
SEDWICK														0.002	0.998				
SEWARD																1.000			
SHAWNEE								0.301	0.399					0.301				0.563	
SHERIDAN	1.000																		
SHERMAN	0.558	0.442																	
SMITH		0.371				0.629													
STAFFORD				0.643											0.177	0.180			
STANTON																0.560	0.440		
STEVENS																	1.000		
SUMNER														0.359	0.641				
THOMAS	0.633	0.367																	
TREGO	0.123	0.556	0.167	0.155															
WABAUNSEE							0.218							0.782					
WALLACE		1.000																	
WASHINGTON							1.000												
WICHITA		0.507														0.493			
WILSON									0.302	0.698									
WOODSON									0.494	0.209				0.296					
WYANDOTTE								1.000									0.982		