



## Utah's Predator Control Program Summary

### *Program activities and data from July 1, 2015 through June 30, 2016*

Utah's *Mule Deer Protection Act* has been in effect since July of 2012. The primary goal of the program is to reduce numbers of coyotes in areas where they may prey on mule deer. Two bills were passed by the Utah Legislature that provide funding to implement the program. SB245 set aside \$500,000 from the Utah General Fund to compensate program participants for coyotes that are harvested by the public, and SB87 added a \$5.00 fee increase to all big game hunting permits to help pay for predator removal efforts. The Utah Division of Wildlife Resources (Division) created the General Predator Control Program which tracks harvest and participation, and provides payment to all participants in the program. The Division established locations throughout the state where people could check-in coyotes for payment. Each participant must submit the scalp of the animal with both ears attached, the lower jaw, and a datasheet that documents where the coyote was killed.

This report summarizes details from the implementation of the Act in Fiscal Year 2016 which runs from July 1, 2015 to June 30, 2016.

#### **Participation, Payments and Coyotes Submitted for Payment**

This is the fourth year of the General Predator Control Program, and a total of 9,728 coyotes were turned in for \$486,400 in compensation, an increase of 19% compared with 8,192 coyotes in FY2015. In FY15, the Division committed \$118,000 in targeted contracts established with hunters that qualified for specific areas of the state. There were 11 contracts issued in FY15 and the agreements allowed contractors to operate for a longer period (February 2014 to August 2015). Therefore, the final payment actually occurred in FY16. The Division established a small group that included USDA Wildlife Services, Division employees, and several sportsmen representatives to evaluate the effectiveness of the targeted contracts. The group recommended that targeted contracts should no longer be used and FY16 efforts should focus on the general bounty program. Therefore, no contracts were issued during FY16.

In FY2016 a total of 1,102 individuals submitted coyotes through the General Predator Control Program. Participation was up 4% from the previous year (n=1,065). The number of coyotes submitted by individual hunters remained similar to 2015 with 39% of the participants submitting more than 5 animals.

#### **Impact of the Program: Estimates from Survey Data**

The Division's yearly furbearer survey provided ancillary information about coyote harvest in the state. Prior to implementation of the *Mule Deer Protection Act* and the General Predator Control Program the annual reported harvest of coyotes by hunters licensed to harvest furbearers averaged 7,397. The reported harvest of coyotes by furbearer license holders was 7,835 during 2015-2016. Of the 7,835 coyotes that were reported harvested by licensed fur harvesters, 44% were not turned in for redemption of the payment. Therefore, in addition to the 7,835 coyotes that were turned in for payment, an additional 3,447 harvested coyotes were not submitted for a payment through this program in FY2016. The total reported coyote harvest by the general public from July 1, 2015 to June 30, 2016 is 13,175. Of the individuals who purchased a furbearer permit in FY2016, 48% indicated that they increased their efforts to harvest coyotes this year because of the predator control program.

In addition, the Division has a cooperative interagency agreement with USDA Wildlife Services (WS) to remove coyotes under this program. WS personnel reported removing 3,961 coyotes from July 1, 2015 to June 30, 2016.

Total estimated harvest of coyotes for FY2016 through the General Predator Control Program (9,728), additional general fur harvest not redeemed through the Predator Control Program (3,447), and by Wildlife Services (3,961) is 17,136 coyotes. Prior to the implementation of the Mule Deer Protection Act reported harvest of coyotes by licensed furbearer permits holders and Wildlife Services together averaged approximately 9,300 animals per year.

### Biological Data

Samples and locations of all coyotes could not be collected due to errors in locations, incomplete data forms, or when conditions prevented gathering the additional data. For example, some coyotes were submitted with injuries which precluded sampling such as broken teeth and damaged hides. Also, when long lines or software problems at coyote check-in locations were encountered, biological data was not collected in order to provide quicker customer service to program participants.

Biological data collected for coyotes harvested in the predator control program in FY2016 indicates that 4,537 (47.3%) were female, 4,853 (50.6%) were male, and the remainder was unspecified (2%). For the 9,276 coyotes for which hunting method information was available, most (6,647; 71.7%) were taken by shooting, 1,781 (19.2%) were trapped, and 848 (9.1%) were harvested by other means such as trained dogs, denning, vehicle collisions, etc.

Tooth data from FY2015 (the most recent available) indicate that 75% of the harvest was two-years old or younger, and 45% of the animals were less than one-year-old. There were a few older animals also taken in FY2015; three of the submitted animals were estimated to be 12 years old.

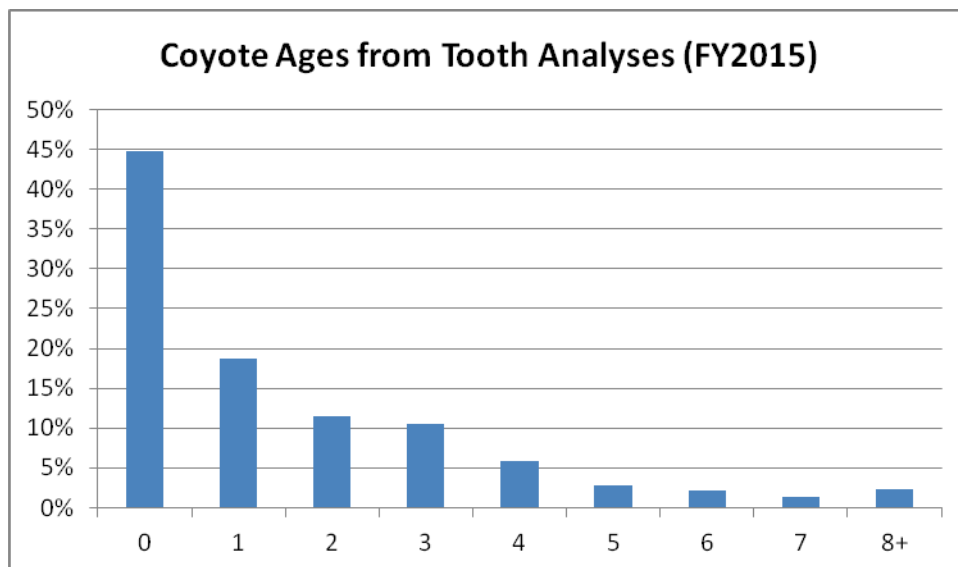


Figure 1. Age of coyotes determined by cementum annuli in FY2015 (n=740).

## Temporal Distribution of Coyote Harvest

Coyote submission in FY2016 increased from November 2015 until a peak in early- to mid-February 2016, followed by a marked decrease thereafter (Figure 2). This follows the general pattern observed in previous years, reflecting a seasonal increase in hunters on the landscape and people harvesting coyotes for the regional fur sale held in February.

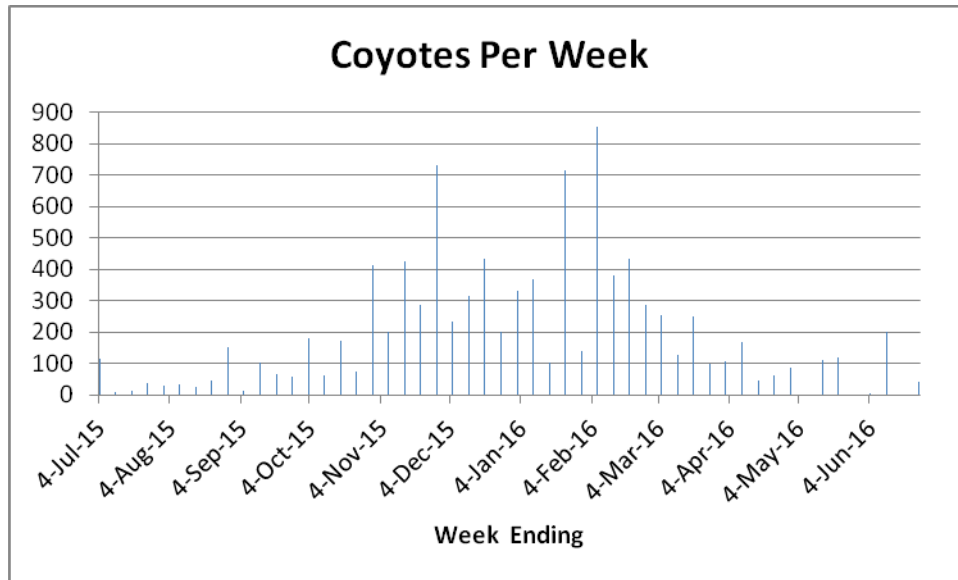


Figure 2. Number of coyotes turned in by week FY2016.

## Spatial Distribution of Coyote Take

The total number of coyotes submitted in FY2016 with usable spatial data was 9,515. Coyote removal locations were plotted onto the state's deer management units (Figure 3). Coyote removal success varied across the state but, as in past years, several popular deer units (Box Elder, West Desert, Southwest Desert, Fillmore, South Slope, Beaver, Cache) accounted for more than half of the coyotes removed statewide (Table 1; n=5,502; 57%). Of the 29,973 locations with usable spatial attributes submitted from September 2013 to July 2016, twenty percent (6,082) overlapped with areas considered important for mule deer fawning.

## Utah Coyote Removal Locations July 2015 - June 2016

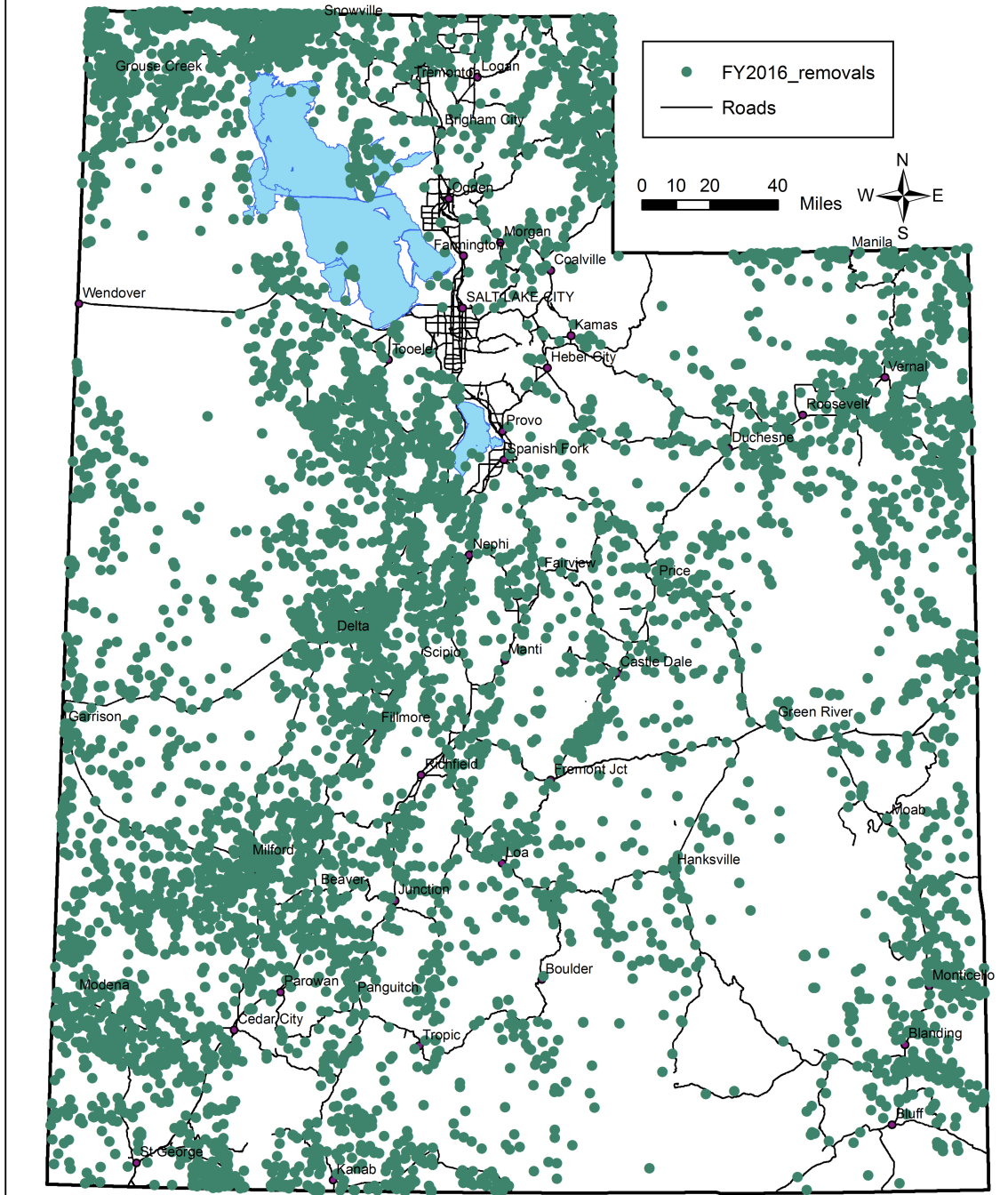


Figure 3. Locations of coyote harvested and turned in for payment.

Hunt Unit/Tribal Area	Coyotes	Percent
Box Elder	1538	16.16%
West Desert	878	9.23%
Southwest Desert	834	8.77%
Fillmore	616	6.47%
South Slope	577	6.06%
Beaver	553	5.81%
Cache	506	5.32%
San Juan	419	4.40%
Pine Valley	409	4.30%
Central Mountains	362	3.80%
Oquirrh-Stansbury	312	3.28%
Book Cliffs	256	2.69%
Zion	248	2.61%
Plateau	221	2.32%
Paunsaugunt	217	2.28%
San Rafael	183	1.92%
Nine Mile	172	1.81%
North Slope	165	1.73%
Morgan South Rich	155	1.63%
La Sal	130	1.37%
Wasatch Mountains	121	1.27%
Kaiparowits	105	1.10%
Panguitch Lake	105	1.10%
Mt. Dutton	84	0.88%
Henry Mountains	82	0.86%
Monroe	69	0.73%
Ogden	67	0.70%
East Canyon	56	0.59%
Navajo Reservation	48	0.50%
Kamas	17	0.18%
Chalk Creek	10	0.11%

Table 1. Number of coyotes turned in for payment by deer wildlife management unit.

MULE DEER POPULATION AND PREDATOR CONTROL REMOVAL EFFORTS

Updated 10/02/2018

Unit Name	Plan	Population	Population	Population	Postseason	Postseason	Postseason	Postseason	Postseason	Number of	Number of	Number of	Number of
	Population Objective	Estimate post-2013	Estimate post-2014	Estimate post-2016	Fawn:doe 2011	Fawn:doe 2012	Fawn:doe 2013	Fawn:doe 2014	Fawn:doe 2015	Coyotes 2012	Coyotes 2013	Coyotes 2014	Coyotes 2015
Box Elder	20,000	11,600	11,600	12,850	70	56	52	63	63	1,142	698	802	1,538
Cache	25,000	15,300	17,300	19,500	72	85	58	61	64	272	307	291	505
Ogden	11,000	8,700	8,500	9,700	67	78	63	69	63	49	46	49	67
Morgan-South Rich	18,000	15,300	15,500	18,100	61	86	50	67	62	92	75	92	155
East Canyon	13,500	11,100	12,400	13,300	61	84	47	64	68	23	28	46	56
Chalk Creek	10,500	12,200	15,000	19,300	64	73	63	68	63	30	3	19	10
Kamas	8,000	7,000	7,700	9,200	65	75	64	67	64	7	3	7	17
North Slope	6,200	7,400	8,300	9,700	61	64	63	65	73	67	145	90	165
South Slope, Yellowstone*	13,000	8,700	9,800	9,700	47	63	67	64	69	251	332	393	577
South Slope, Vernal*					61	72	60	78	76				
South Slope, Diamond*	13,000	11,100	12,000	13,000	63	68	70	74	82				
Book Cliffs	15,000	7,850	8,600	7,750	50	52	44	57	39	41	72	132	256
Nine Mile	8,500	5,400	6,200	6,800	61	63	73	78	78	103	89	134	172
San Rafael	1,000	No Data	No Data	No Data						101	105	115	183
La Sal, La Sal Mtns*	13,000	7,100	6,900	7,000	53	48	53	56	46	56	123	120	130
La Sal, Dolores Triangle*	5,100	2,600	2,300	2,300	35	65	65	47	64				
San Juan, Abajo*	13,500	9,850	10,600	11,900	57	53	62	52	37	375	421	540	419
San Juan, Elk Ridge*	7,000	800	800	800	36	42	51	38	43				
Henry Mtns	2,700	1,800	2,200	2,400	54	74	60	81	76	12	52	51	82
Central Mtns, Manby*	38,000	23,500	25,100	25,700	64	72	65	67	69	301	307	311	362
Central Mtns, Nebo*	22,600	15,900	13,900	14,900	52	58	61	57	37				
Wasatch Mtns, West*	22,600	18,700	20,500	23,700	74	71	76	70	73	103	110	118	121
Wasatch Mtns, Currant Creek*	15,000	14,300	16,500	17,000	52	79	70	81	61				
Wasatch Mtns, Avintlaquin*	3,200	2,500	3,500	3,500	67	65	65	67	64				
Oquirrh-Stansbury	11,600	10,800	11,200	12,300	61	54	69	68	66	340	235	262	312
West Desert	11,200	8,900	9,000	9,900	77	61	55	85	67	661	566	572	878
Southwest Desert	4,000	2,100	3,000	2,700	53	44	48	46	48	329	524	569	834
Fillmore	12,500	10,100	10,100	9,100	44	58	58	65	62	521	519	578	616
Beaver	13,000	12,400	13,800	14,400	61	57	61	60	64	401	517	475	553
Monroe	7,500	7,800	7,200	6,900	66	69	70	66	64	122	79	76	69
Mt Dutton	2,700	2,600	2,900	2,900	64	66	67	56	36	43	77	93	84
Plateau, Fishlake*	10,000	7,200	7,900	8,500	52	61	70	62	71	145	200	228	221
Plateau, Thousand Lakes*	3,000	1,300	1,300	1,400	66	42	61	58	63				
Plateau, Boulder*	12,000	7,700	8,200	8,500	64	70	57	57	63				
Kaiparowits	1,000	400	400	400						20	48	78	105
Panorama	6,500	5,200	5,200	5,400	63	59	52	64	63	94	169	252	217
Panguitch Lake	10,000	11,700	11,700	12,150	57	70	63	58	63	62	69	108	105
Zion	15,500	13,000	15,000	17,000	69	62	59	56	61	181	245	306	248
Pine Valley	16,000	13,000	13,500	16,000	66	60	59	58	61	318	476	498	409
STATEWIDE TOTALS	441,900	332,800	366,800	384,860	61	66	62	64	64	6,262	6,641	7,405	9,467

\*Coyote harvest in these units is not broken down by subunit.

Table 2. Mule deer population objective, post-season classification, post-season fawn:doe ratios, and known coyote harvest locations by wildlife management and year.

## Conclusion

The Predator Incentive Program was efficiently and effectively implemented at a statewide scale during fiscal year 2016. The program demonstrated an increased number of coyotes harvested in Utah. Based on four years of data collected, we estimate that 56,687 coyotes have been harvested. This is an average of 14,172 coyotes per year. Table 2 indicates annual fawn:doe ratios in each of the management units in comparison with the number of known coyotes removed from each unit. It will likely take several years of implementation of this program before improvements in fawn:doe ratios statewide may become observed and this effect may be more visible in local areas versus statewide. Prior to implementation of the Mule Deer Protection Act the statewide (2012) fawn:doe ratio was 61. As indicated above approximately 20% of the known harvest locations for coyotes taken in this program since September 2013 occurred in areas identified as critical for mule deer fawning. Since 2012, the fawn:doe ratio has fluctuated between 61 and 65, indicating a stable deer population overall. There are many factors such as weather, drought and habitat conditions that contribute to fawn:doe ratios. For the entirety of the program, the location data indicates that most coyotes are harvested in areas occupied by mule deer.