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TITLE: Furbearer Population and Harvest Monitoring

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ABSTRACT: Information from annual Furtaker Surveys has been used to determine trends in the number of furtakers and furbearer harvests since 1990. Furtaker license sales have increased steadily since 1999. During the 2009-2010 harvest season 31,110 furtaker licenses were sold, the highest number recorded during the past 20 years. Despite increased interest in furtaking, harvest levels declined for all species except coyote. Pelt values and market demand for wild furs were comparable to previous seasons. Reports of bobcat sightings, and incidental bobcat captures continue to suggest numeric and geographic expansion of bobcat populations. Reports of fisher observations suggest that fisher populations are expanding rapidly proximal to initial release sites, and throughout areas of the southcentral and southwest regions. Otter populations have expanded throughout the state. In 2009, river otters occupied 88% of Wildlife Conservation Officer (WCO) districts. Coyote complaints and damage to livestock remained stable. Beaver damage and nuisance complaints were relatively low. With 80% of WCO districts reporting increasing or stable populations, the overall status of beavers appears good.

OBJECTIVES

1. To determine trends in the annual harvest of furbearing animals and numbers of trappers.
2. To monitor changes in furbearer population distribution and abundance.

METHODS

The annual fur harvest was estimated from the Furtaker Survey conducted in March. Due to budget constraints, this survey was not conducted during 2004, but was implemented in subsequent years. Harvest estimates were presented by species and Wildlife Management Unit (WMU).

Combination license holders have been extended furtaker privileges since 1999, but harvest totals for each species do not include them representing a sampling bias during subsequent years (Boyd and Weaver 2009).

Average pelt prices of furbearers sold at the Pennsylvania Trappers Association's (PTA) District fur sales were obtained to monitor trends in pelt value. Pelt values were averaged among several districts reporting fur sale results. Approximately 5% of all furbearers harvested in Pennsylvania are sold at these fur sales. Pelt value trends during 1986-2010 were assessed for each furbearer species.

The reported estimates of coyote harvest include only those animals recorded by furtakers and does not account for the incidental harvest recorded in the Game Take Survey. Boyd and Weaver (2009) provided the combined harvest totals. Prior analyses of the beaver harvests results were included in the beaver management plan report (see Job No. 64001). Current harvest levels and pelt prices are reported herein.

Questionnaires are mailed annually to all Wildlife Conservation Officers (WCOs) to collect information on captures and sightings of otter and fisher, and to record numbers and types of coyote damage complaints during the previous calendar year. Numbers of beaver complaints received and assessments of beaver, otter, fisher, and bobcat populations were also queried. In an effort to monitor the frequency of nuisance complaints of other furbearers, WCOs were asked to record numbers of bobcat, fisher, fox, weasel, river otter, mink, muskrat, raccoon, opossum, and skunk complaints. The 2009 WCO Furbearer Questionnaire (Figure 1) was mailed during May and returned from WCOs by August 2010.

Vehicle-caused mortalities and incidental trapping mortalities for bobcat, otter, and fisher were recorded annually by WCOs using standardized kill report forms. Mandatory WCO reporting of these mortalities was a year-round activity.

RESULTS

Fur Harvest

In 1985 a furtaker license was created, and since then furtaker license sales have generally declined ($r = -0.495$, $P < 0.05$) (Table 1). Since 1999, combination license holders were extended furtaking privileges, which resulted in reduced furtaker license sales. However, the numbers of furtaker licenses sold has been increasing steadily since 1999 (Table 1). During the 2009-2010 harvest season, 31,110 furtaker licenses were sold, the highest number recorded during the past 20 years. Future pelt prices, continued trapping device regulation, and international changes in fur demand will continue to affect the number of furtakers in Pennsylvania. Estimated statewide harvest numbers were similar to those during previous years. Harvest levels declined for all species except coyote (Table 2). Most populations of terrestrial furbearers remain underutilized. Species harvest totals by WMU are provided for regional comparison of relative species abundance and harvest intensity (Table 3).

In general, the demand and prices paid for furs has declined since historic high values of the

early 1980s. Historic low pelt values occurred during the 1989 and 1990 trapping seasons. Fur prices during the 1990s were relatively stable with the lowest values observed during the 1998-1999 season. Average pelt values during 2009-2010 were comparable to recent years for most furbearers (Table 4).

Population Monitoring

Bobcats.--The number of incidental bobcat captures, as estimated from the annual Furtaker Survey, has been steadily increasing since 1990. Greater than 500 incidental captures have been reported annually since 1995. The 3-year moving average of incidental captures has increased significantly during 1990-2009 ($r = 0.83$, $P < 0.05$) (Table 5). The number of incidental bobcat captures during 2009 was comparable to the estimate from 2007. Annual numbers of statewide vehicle-caused bobcat mortalities (i.e., roadkills) was also comparable to previous years ($r = 0.97$, $P < 0.01$) (Table 6). These indices suggest continued numeric and geographic expansion of bobcat counties. The greatest numbers of vehicle-caused mortalities have been reported from high-density populations in the northcentral and southwestern counties.

Since 2001, the Pennsylvania Game Commission (PGC) included questions concerning bobcat sightings on the annual Game Take Survey, which is sent to approximately 2% of general hunting license buyers each year (Boyd and Weaver 2009). An annual sighting index (number of observations divided by effort X 100) has been developed to detect changes in observation rates (Table 7). The 2008 bobcat sighting index was similar to previous years. Recent inconsistencies in methods used to calculate effort for this index will result in a review of the methodology used. No index was calculated for 2009.

The statewide population status and distribution of bobcats appear very good. WCOs reported increasing or stable bobcat populations in 74% of districts (Figure 2). Poorly- or non-established populations comprised 26% of WCO districts.

Fishers.--The number of incidental fisher captures reported on the furtakers survey has been increasing steadily during the past decade (Table 8). We estimate that 1,171 fisher were captured and released by Pennsylvania trappers during 2009-2010 seasons. The annual number of fisher observations and incidental captures reported to WCOs has also been increasing since fishers were reintroduced in 1996 (Table 9). WCOs received 106 reports of fishers that were captured and released by licensed trappers and 615 reports of fisher observations. The geographic distribution of these reports suggests that fisher populations are rapidly expanding from the reintroduction areas in northern regions and naturally expanding into regions of southwestern and southcentral Pennsylvania. In addition, 82% of WCOs surveyed during 2009 reported fisher populations existing within their districts (Figure 3).

River Otters.--River otter populations have expanded throughout the commonwealth. Numbers of incidental otter captures, primarily by beaver trappers, have increased during recent years with greater than 25 incidental captures reported annually since 1996 (Table 9). The majority of these captures occur in the Northeast Region, but recent reports indicate continued population expansion throughout the Susquehanna River drainage. Based on results of the 1995 WCO furbearer questionnaire, otters occurred in 51% of WCO districts. In 2009, otters occupied 88% of WCO

districts (Figure 4).

Since 2000, the annual hunting and trapping digest has provided trappers with additional information regarding the avoidance of otter while trapping beaver. Preliminary reports from WCOs indicate that trappers in high-density otter areas were using these techniques to avoid otter captures. Incidental otter capture reports decreased from 47 in 2008-2009 to 36 during the 2009-2010 season. As otter populations continue to expand, more intensive monitoring will be required.

Coyotes.--Reports of coyote-caused damage to livestock and domestic pets have been relatively stable since 1993. Numbers of complaints and losses due to coyotes during 2009 were similar to reports from previous years. Complaints related to concerns for human safety increased significantly. Losses of calves, sheep and poultry increased during recent years (Table 10). Reports of coyotes killing domestic dogs and cats are increasing, particularly in the southwest and southeast regions. Seventy-seven WCO districts (62%) reported complaints during the most recent survey period. The majority of coyote complaints received by WCOs are people expressing concern for pets, livestock, wildlife, or human safety issues.

Beavers.--The overall status of beaver populations appears good, with 80% of WCO districts reporting increasing or stable populations (Figure 5). WCOs observed decreases in established populations within 7% of districts. Non-established populations comprised 12% of WCO districts. Only one WCO reported no existing beaver populations within his district. However, areas of suitable habitat with decreasing or non-established beaver populations may need trapping regulation changes to allow for population growth and expansion.

In 2009, beaver damage and nuisance complaints remained relatively low. Since 1996, when beaver complaints peaked at 1,140, reports of problem beavers gradually decreased. WCOs received 506 beaver complaints during 2009. Most beaver complaints occurred along the northern tier of Pennsylvania (Figure 6). Few complaints were reported in the southern half of the commonwealth.

Other furbearers.--WCOs recorded the number of nuisance complaints received involving other furbearer species. They reported 50 bobcat, 23 fisher, 236 fox, 17 weasel, 7 river otter, 27 mink, 73 muskrat, 763 raccoon, 139 opossum, and 488 skunk complaints. We will monitor nuisance complaint levels of these furbearers in subsequent years.

RECOMMENDATIONS

1. The fur harvest should continue to be reported by species and WMU to monitor area-specific harvest trends.
2. Pelt price information should be collected annually to monitor trends in fur value relative to regional harvest trends.
3. Current methods for monitoring changes in density and distribution of bobcat, otter, and fisher should be continued, and for otter, intensified to better understand population trends.

4. The Game Take Survey should continue to query general license buyers regarding bobcat, fisher, and coyote observations. Effects of geographic sampling bias should be assessed now that the Pennsylvania Automated License System is fully implemented.

5. The PGC should continue educational efforts concerning techniques for avoiding otter captures.

6. Increased numbers of coyote-related complaints should be addressed through educational programs in rural and suburban communities.

LITERATURE CITED

Boyd, R. C., and M. Weaver. 2009. Game Take and Furtaker Surveys. Annual Job Report 11101. Pennsylvania Game Commission. Harrisburg, USA.

Table 1. Number of furtaker licenses sold in Pennsylvania.

Year	Licenses sold
1985	64,000
1986	44,087
1987	42,000
1988	36,000
1989	29,000
1990	20,377
1991	20,251
1992	20,345
1993	19,458
1994	22,376
1995	21,376
1996	25,636
1997	27,413
1998	25,877
1999	17,591 ^a
2000	18,551 ^a
2001	19,410 ^a
2002	20,676 ^a
2003	22,454 ^a
2004	24,094 ^a
2005	23,941 ^a
2006	26,589 ^a
2007	28,032 ^a
2008	29,707 ^a
2009	31,110 ^a

^a Combination license holders were extended furtaker privileges since 1999, but the number who pursue furbearers has not been determined. Therefore, these numbers misrepresent to an unknown degree the number of furtakers in Pennsylvania.

Table 2. Annual harvest and percent change, calculated using a 3-year moving average, by species in Pennsylvania during 1985-2008.

Year ^a	Red		Gray		Coyote ^b		Muskrat		Mink		Skunk		Opossum		Beaver ^c		Weasel			
	Raccoon	%	Fox	%	Fox	%	%	%	%	%	%	%	%	%	%	%	%	%		
1985-86	532,898		72,957		44,907				387,857				52,498		255,334		5,980			
1986-87	426,625		95,330		46,387				440,880				39,064		210,953		6,690			
1987-88	443,534	-22.0	74,590	-8.3	56,944	-14.7			346,558	-13.4	18,513		39,632	-27.6	217,552	-21.9	6,490	-6.6		
1988-89	224,514	-24.7	52,737	-23.3	23,072	-13.9			229,958	-29.4	12,896		16,351	-19.6	105,812	-24.4	4,721	-11.2		
1989-90	155,761	-39.7	43,525	-24.5	28,818	-32.4			141,577	-32.6	9,669	-27.9	20,409	-39.7	80,660	-44.8	4,678	-19.3		
1990-91	116,443	-18.9	32,699	-18.8	21,683	10.0	1,810		112,358	-15.3	7,053	-8.6	9,298	-16.2	36,574	-30.8	3,431	-4.8	798	
1991-92	130,608	-7.8	28,495	-15.2	30,409	-4.2	3,719		156,014	-1.5	10,355	-1.9	8,907	-34.2	37,177	-34.3	4,107	-1.4	481	
1992-93	124,404	0.7	27,611	-7.7	25,395	2.8	4,402	43.8	135,533	2.3	9,157	2.8	7,221	-5.4	27,754	-10.6	4,506	1.5	343	-16.8
1993-94	118,964	15.0	25,862	2.6	23,839	3.7	6,161	17.7	121,657	5.4	7,808	-0.5	7,920	15.4	25,807	-8.3	3,606	43.0	526	17.9
1994-95	186,551	-0.9	30,649	4.2	33,387	-2.3	6,240	13.4	178,145	-1.2	10,208	-2.0	12,620	10.0	29,621	2.3	9,360	11.1	723	21.6
1995-96	120,462	22.5	31,110	4.3	23,518	-0.7	6,662	9.4	130,442	5.7	8,602	5.7	9,995	12.0	29,688	26.7	6,454	31.8	687	3.3
1996-97	214,958	1.6	29,623	6.9	23,307	-9.2	7,959	2.1	146,013	8.3	9,315	13.7	11,571	-0.8	48,549	28.8	9,789	12.8	589	22.5
1997-98	194,696	14.1	36,923	16.5	26,043	12.9	6,685	23.4	216,066	3.6	14,063	11.4	12,344	3.5	60,717	19.1	12,628	7.9	1,172	-1.0
1998-99	195,110	-17.8	47,202	6.4	32,922	4.2	11,652	6.2	148,205	-10.2	12,238	12.5	11,190	-13.8	56,287	-9.0	8,727	-4.5	662	-11.1
1999-00	107,407	-17.3	36,860	-3.2	26,794	-1.9	9,586	13.2	94,215	-29.7	13,774	-13.6	6,723	-15.9	33,723	-21.0	8,377	-14.2	319	-38.6
2000-01	108,890	-17.8	33,060	-12.1	24,452	-11.5	10,383	2.2	79,880	-8.1	8,614	2.8	7,534	-7.6	29,093	-24.4	8,408	8.7	340	-0.4
2001-02	121,810	-0.3	33,003	-3.7	23,275	-10.7	12,363	5.7	121,994	-6.4	13,214	-10.4	9,245	2.1	27,192	1.2	10,934	-13.8	657	6.6
2002-03	106,485	-1.2	33,007	-1.5	18,805	-12.8	11,444	3.8	75,340	-3.1	10,069	-6.6	7,207	7.4	34,787	5.1	4,538	-2.2	406	1.4
2003-04	104,781	-4.7	31,592	7.7	15,956	-9.8	11,697	-7.6	71,368	-19.0	6,494	-13.0	9,319	2.9	33,760	17.3	6,772	9.6	359	-6.3
2005-06	106,082	10.1	40,551	11.9	17,616	3.7	9,670	1.3	70,995	21.1	9,335	10.1	9,997	13.1	43,770	11.9	14,283	37.8	567	6.1
2006-07	138,640	4.8	45,512	17.3	20,754	4.9	11,879	5.0	121,167	0.3	12,680	12.3	10,687	1.7	48,102	5.9	14,210	13.5	487	32.1
2007-08	121,446	10.0	52,000	3.0	18,613	5.7	13,360	8.9	72,174	1.2	10,004	-2.2	9,818	7.7	41,168	7.9	11,542	-10.8	813	-3.3
2008-09	142,808	-6.5	44,745	-5.7	20,845	-11.6	12,776	4.1	74,059	-21.4	8,632	-17.3	12,331	-7.2	54,273	-28.4	9,942	-12.6	504	-1.1
2009-10	112,550		37,418		13,793		13,438		63,988		7,261		8,314		37,270		9,704		468	

^aFurtaker survey was not conducted for the 2004-2005 season.

^bCoyote harvest is calculated from only the Furtaker Survey and does not include coyote harvests from the Game Take Survey.

^cBeaver harvest was based on mandatory pelt tagging totals until the 2004-05 season. Harvest was estimated from furtaker surveys from the 2005-06 trapping season to present.

Table 3. Estimated harvests of furbearers by WMU during the 2009-2010 hunting and trapping seasons.

WMU	Raccoon	Red Fox	Gray Fox	Coyote^a	Muskrat	Mink	Skunk	Opossum	Beaver	Weasels
1A	11,634	672	152	779	7,333	422	169	1,872	1,171	0
1B	10,328	922	71	1,365	10,384	917	408	1,803	2,401	11
2A	7,578	842	293	526	2,037	63	139	1,713	149	0
2B	7,113	912	475	212	1,585	84	329	1,397	79	44
2C	6,737	2,116	1,284	698	1,535	263	627	3,041	159	11
2D	12,930	1,684	1,830	344	7,786	537	418	3,476	923	11
2E	4,600	1,123	688	708	3,317	253	149	1,050	228	22
2F	3,749	371	364	425	1,112	200	169	703	605	11
2G	4,363	1,083	1,648	1,901	502	137	657	2,684	615	11
3A	1,979	662	455	404	325	126	139	733	665	33
3B	2,998	351	647	708	591	21	199	1,109	189	0
3C	2,671	652	870	880	3,337	400	428	1,208	853	207
3D	1,068	381	536	991	433	105	189	495	685	0
4A	3,007	882	587	243	1,782	74	259	931	10	0
4B	4,105	2,557	647	222	2,244	316	538	1,525	30	0
4C	4,155	1,313	415	152	728	453	568	2,436	179	0
4D	3,838	1,083	961	647	5,256	379	886	1,733	129	0
4E	2,938	612	627	738	4,203	495	279	2,199	109	22
5A	3,314	5,524	384	354	2,736	316	468	1,763	89	0
5B	7,004	7,871	303	243	4,183	970	777	3,041	139	0
5C	2,839	4,853	121	344	669	316	309	1,060	208	11
5D	138	190	0	10	0	11	20	59	0	0
Unknown	3,462	762	435	546	1,910	400	189	1,238	89	76
Total	112550	37418	13793	13438	63988	7261	8314	37270	9704	468

^b Coyote harvest is calculated from only the Furtaker Survey and does not include coyote harvests from the Game Take Survey.

Table 4. Average pelt prices paid for furbearer species in Pennsylvania (1992-present).

Trapping season	Average pelt price (\$) ^a									
	Raccoon	Red Fox	Gray Fox	Coyote	Muskrat	Mink	Skunk	Opossum	Beaver	Bobcat
1992-93	6.77	12.96	11.32	25.40	2.25	19.95		1.71	10.63	
1993-94	8.54	15.44	11.02	24.15	2.88	18.35	2.66	1.88	19.03	
1994-95	9.15	18.73	11.47	24.70	3.09	14.08	2.21	1.51	19.94	
1995-96	10.27	16.30	9.40	13.36	3.15	11.88	3.00	1.74	19.65	
1996-97	15.34	18.05	11.94	20.68	6.03	19.06	3.92	1.83	29.37	
1997-98	12.07	13.18	9.65	9.72	3.44	11.66		1.41	21.73	
1998-99	6.87	9.73	4.84	6.40	1.87	9.48		0.49	15.29	
1999-00	4.94	10.72	6.19	15.43	3.16	9.75		1.47	16.08	
2000-01	7.42	16.58	8.61	16.07	3.40	9.64		2.47	20.00	
2001-02	8.34	20.14	10.05	17.16	3.85	8.47		1.54	15.86	
2002-03	9.39	22.84	12.81	22.57	3.81	9.69		2.12	14.33	
2003-04	10.15	19.92	18.74	25.29	3.33	10.50		2.03	15.84	
2005-06	10.11	16.48	18.04	9.37	2.89	12.84	3.14	2.51	16.11	
2006-07	17.50	20.36	26.54	24.50	6.10	17.42	4.50	5.05	17.18	
2007-08	12.88	20.84	43.84	20.02	3.20	12.88	4.04	2.45	22.14	
2008-09	9.79	11.58	25.11	12.37	3.96	10.06	4.42	3.45	18.05	26.36
2009-10	11.58	10.48	20.76	17.27	7.35	11.02	4.62	2.62.	18.29	43.50

^a Average pelt prices paid at PA Trappers Association fur sales.

Table 5. Numbers of incidental bobcat captures as estimated from the annual Furtaker Survey. This survey was not conducted during 2004-2005.

Trapping season	No. survey respondents	No. furtaker licenses	No. bobcats^a captured and released	Extrapolated no. bobcat captures	3-year moving average^b (no. bobcat captures)
1990-1991	2,302	20,377	40	354	
1991-1992	2,361	20,215	24	205	293
1992-1993	1,652	20,345	26	320	222
1993-1994	2,175	19,246	16	142	513
1994-1995	2,056	21,905	101	1,076	559
1995-1996	2,181	21,840	46	460	736
1996-1997	2,363	25,636	62	673	566
1997-1998	2,233	27,413	46	565	790
1998-1999	2,466	25,877	108	1,133	797
1999-2000	1,557	17,414	62	693	991
2000-2001	1,681	18,551	52	574	656
2001-2002	1,553	19,410	56	700	599
2002-2003	1,779	20,676	45	523	639
2003-2004	2,204	22,454	68	693	951
2005-2006	2,412	23,941	165	1,638	1,414
2006-2007	2,436	26,589	175	1,910	1,916
2007-2008	2,994	28,032	235	2,200	2,405
2008-2009	2,622	29,717	274	3,105	2,533
2009-2010	3,186	31,110	235	2,295	

^a Does not include bobcats legally harvested by permit holders.

^b $r = 0.83$, $P < 0.05$

Table 6. Numbers and geographic distribution of vehicle-caused bobcat mortalities during 1985-2009.

Year	No. reported bobcat roadkills	No. counties with roadkills	No. new county records	3-year moving average
1985	2	2	0	
1986	15	2	7	12.0
1987	19	8	3	15.3
1988	12	5	4	15.7
1989	16	6	1	18.7
1990	28	7	5	26.3
1991	35	11	1	34.0
1992	39	13	5	44.0
1993	58	19	1	42.7
1994	31	14	1	48.7
1995	57	17	2	45.7
1996	49	15	0	59.0
1997	71	19	5	59.0
1998	57	18	3	71.3
1999	86	24	3	87.3
2000	119	29	3	102.7
2001	103	28	0	109.7
2002	107	28	0	107.0
2003	111	27	0	108.7
2004	108	27	0	106.7
2005	101	28	0	106.0
2006	109	27	0	106.0
2007	108	28	0	112.7
2008	121	28	0	112.3
2009	108	26	0	

Table 7. Reports of bobcat and fisher sightings by county from the annual Game Take Survey, 2001-2009. Furtaker Survey was not conducted in 2004. Estimate was not conducted during 2009.

Year	Season	N (%)	Effort days	Bobcat		Fisher	
				Number	SI ^a	Number	SI ^a
2001	Spring Turkey Hunters	2,785 (24.8)	12,735	200	1.57	90	0.71
	Firearms Deer Hunters	8,628 (76.9)	40,254	585	1.45	152	0.38
	Archery Deer Hunters	3,237 (28.8)	36,439	407	1.12	134	0.37
	All Hunters	11,221 (100.0)	89,428	1,192	1.33	376	0.42
2002	Spring Turkey Hunters	2,423 (24.8)	10,952	205	1.87	43	0.39
	Firearms Deer Hunters	7,176 (73.3)	33,412	465	1.39	170	0.51
	Archery Deer Hunters	2,816 (28.8)	31,396	266	0.85	95	0.3
	All Hunters	9,777 (100.0)	75,760	936	1.24	308	0.41
2003 ^b	Spring Turkey Hunters	2,728 (27.3)	12,147	131	1.08	49	0.4
	Firearms Deer Hunters	7,388 (73.8)	34,133	367	1.08	95	0.28
	Archery Deer Hunters	2,923 (29.2)	27,137	265	0.97	63	0.23
	All Hunters	10,005 (100.0)	73,417	763	1.04	207	0.28
2005	Spring Turkey Hunters	2,845 (21.7)	12,327	163	1.32	104	0.84
	Firearms Deer Hunters	7,213 (55.0)	35,011	316	0.9	107	0.31
	Archery Deer Hunters	3,065 (23.4)	28,674	442	1.54	125	0.44
	All Hunters	13,123 (100.0)	76,012	921	1.21	336	0.44
2006	Spring Turkey Hunters	2,580 (20.7)	10,243	481	4.7	121	1.18
	Firearms Deer Hunters	6,865 (55.0)	32,609	707	2.17	230	0.71
	Archery Deer Hunters	3,025 (24.3)	32,065	109	0.34	109	0.34
	All Hunters	12,470 (100.0)	74,917	1,297	1.73	460	0.61
2007	Spring Turkey Hunters	2,369 (25.2)	9,467	316	3.33	70	0.73
	Firearms Deer Hunters	5,736 (60.9)	57,500	784	1.36	270	0.46
	Archery Deer Hunters	2,832 (30.0)	13,445	385	2.86	171	1.27
	All Hunters	9,415 (100.0)	80,412	1,485	1.84	511	0.63
2008	Spring Turkey Hunters	4,498 (20.2)	9,676	270	2.79	111	1.15
	Firearms Deer Hunters	12,350 (55.5)	29,739	502	1.69	224	0.75
	Archery Deer Hunters	5,412 (24.3)	29,478	348	1.18	116	0.39
	All Hunters	8,478 (100.0)	68,893	1,120	1.63	451	0.65

^a SI = Sighting Index = observations/effort * 100

Table 8. Numbers of incidental fisher captures as estimated from the annual Furtaker Survey. This survey was not conducted during 2004-2005.

Trapping season	No. survey respondents	No. furtaker licenses	No. fisher^a captured and released	Extrapolated no. fisher captures	3-year moving average (no. fisher captures)
1999-2000	1,557	17,414	5	56	
2000-2001	1,681	18,551	1	11	47
2001-2002	1,553	19,410	6	75	71
2002-2003	1,779	20,676	11	128	102
2003-2004	2,204	22,454	10	102	351
2005-2006	2,412	23,941	83	824	625
2006-2007	2,436	26,589	87	950	919
2007-2008	2,994	28,033	105	983	1,275
2008-2009	2,622	29,717	167	1,893	1,349
2009-2010	3,186	31,110	120	1,171	

^a $r = 0.97, P < 0.001$

Table 9. Reports of otter and fisher captures and fisher observations estimated from annual questionnaires of WCOs, 1995-2009.

Survey Season	No. Districts Reporting	No. Incidental Otter Captures	No. Incidental Fisher Captures	No. Reported Fisher Observations
1995	123	15	-	-
1996	123	15	-	-
1997	123	31	10	60
1998	123	26	9	67
1999	127	30	6	94
2000	123	35	8	82
2001	137	25	6	105
2002	122	27	9	106
2003	133	26	20	206
2004	122	42	31	303
2005	123	50	49	341
2006	118	44	86	385
2007	133	57	132	481
2008	132	47	138	561
2009	125	36	106	615

Table 10. Types and numbers of coyote-related complaints reported to WCOs, 1995-2009.

Survey Results	Survey Period														
	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Proportion of districts with complaints (%)															
Nature of complaints															
Concern for Cattle	8	19	27	8	12	11	11	11	11	16	18	24	9	12	12
Concern for Sheep	37	24	43	22	23	26	17	15	30	23	43	29	19	22	29
Concern for Goats	3	5	8	3	4	1	1	1	4	3	5	3	4	7	4
Concern for Poultry	16	5	13	12	17	14	15	15	15	25	24	11	19	16	14
Concern for Dogs	7	9	17	12	11	22	12	12	10	19	12	19	8	9	17
Concern for Cats	13	7	15	19	13	29	23	22	24	77	25	38	28	19	25
Afraid of Coyotes	71	86	114	69	114	126	114	115	98	316	263	199	155	171	219
Concern for Deer	89	52	41	49	47	57	29	28	50	87	73	36	61	74	39
Concern for Turkeys	23	13	10	14	10	18	6	5	13	37	31	12	12	21	17
Other	4	1	15	31	0	0	7	8	26	0	32	36	36	32	17
Total	271	221	303	239	251	304	235	232	281	603	526	407	351	383	393
Coyote-caused mortalities															
Cows	0	3	1	0	0	1	0	0	0	0	2	0	1	1	0
Calves	2	8	9	3	7	8	5	5	4	13	10	27	7	9	8
Sheep	82	100	251	60	81	91	21	21	31	37	30	47	28	47	57
Goats	3	0	9	6	3	0	1	1	6	0	0	2	3	4	3
Poultry	112	27	51	43	52	44	49	48	66	85	51	71	93	132	76
Dogs	0	6	6	3	6	17	5	6	3	4	3	3	1	2	1
Cats	24	11	14	14	5	30	21	21	14	73	16	33	15	34	19
Rabbits	12	9	4	2	2	3	2	2	8	5	8	12	2	8	16
Deer		10	3	5	5	9	10	10	12	17	13	10	8	10	7
Other	17	1	0	0	3	3	0	0	0	2	2	1	1	0	1
Total	252	175	348	136	164	206	114	114	140	236	135	206	159	247	188

Figure 2. Bobcat population status and distribution based on Wildlife Conservation Officer observations during 2009.

Figure 3. Fisher population status based on Wildlife Conservation Officer observations during 2009.

Figure 4. River otter population status based on Wildlife Conservation Officer observations during 2009.

Figure 5. Beaver population status based on Wildlife Conservation Officer observations during 2009.

Figure 6. Distribution and frequency of beaver complaints reported by Wildlife Conservation Officers during 2009.