2012-13 Furbearer Harvest Survey

PERFORMANCE REPORT STATEWIDE WILDLIFE RESEARCH AND SURVEYS

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Robin Jennison Secretary

Prepared by

Matt Peek Furbearer Biologist

Joe Kramer, Director Fisheries and Wildlife Division

Mike Mitchener, Wildlife Section Chief





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2012-13 Furbearer Harvest Survey

Prepared by Matt Peek, Furbearer Biologist

The Furbearer Harvest Survey (FHS) is mailed to furharvesters at the end of the trapping season. Since 2001, 70% of the furharvester license holders from each of nine physiographic provinces in Kansas have been surveyed. This season, given the high number of license sales, we surveyed 60% from each physiographic province. Recipient names are randomly selected from an online database of all furharvester license buyers.

Survey questions are divided into 5 sections: general information, trapping activities, hunting activities, running activities, and a special section (Appendix 1). Questions were the same from 1983-2008. However, in 2009, a change in question structure in the trapping section was made in an attempt to collect more accurate catch-per-unit-effort data (see questions 8-12 in Appendix 1).

Also beginning in 2009, the Kansas Department of Wildlife, Parks and Tourism (KDWPT) began using SurveyMonkeyTM to facilitate web-based surveys. Online surveys are cheaper and more efficient than paper. They save on paper, printing, postage, and data entry fees, plus they reduce human error associated with bulk data entry. However, not everyone is adequately equipped for online surveys, so they have been used in varying combinations with traditional paper surveys. The past few years, we offered a prize drawing as an incentive for completing the survey. We did not offer prizes for completing the survey this year.

There were a total of 7874 furharvester licenses sold in 2012, including 7524 resident licenses, 263 junior resident licenses, and 87 nonresident licenses. From these, a sample of 4715 license holders (60%) was selected. The online database contained e-mails for 1278 of these individuals. An initial e-mail was sent to these individuals on April 4, 2013 containing a request for participation and a link to the survey. A reminder e-mail was sent out on April 9, 2013.

A single mailing consisting of an 8.5"x11" paper survey (Appendix 2) was sent out on April 15, 2013 to furharvesters without a deliverable e-mail on file and to the nonrespondents of our e-mail request (n = 4292). The survey directed recipients online to a survey link, but could also be completed and returned in an enclosed postage paid envelope. A summary of the survey effort including response rates can be found in Table 1. The number of responses and the response rate of furharvesters within each physiographic province can be found in Figure 1.

E-mailing a survey request and a direct link to the survey has proven to be an efficient and economical way to conduct the survey. There is minimal expense in this technique, the response rate is higher than by paper, and the quality of data is generally better since some response requirements are incorporated into the online survey. The main issue with this technique is that most license holders do not have an e-mail associated with their contact information. Consequently, respondents are asked to provide an e-mail address for future surveys (254 new e-mails were received). It will still be necessary to offer paper surveys until questions about the biases between furharvesters with and without e-mails can be answered, but for now, the e-mail option represents an efficient alternative to be used in conjunction to paper.

Information provided by furharvesters is an estimate of their harvest and activities during the season. Results from bobcat and swift fox pelt tagging have always been lower than the harvest

estimates derived from the FHS, suggesting an overestimate by the FHS. Consequently, harvest figures obtained from this survey should be considered representative of annual harvest indices rather than parameters.

Survey results were extrapolated to represent total harvest and activity. Seventy-one percent of respondents indicated they participated in furharvesting activities during the 2012-13 season (i.e. were active). This is up from 63% last season. Estimated furharvester distribution based on the county in which they conducted most of their furharvesting activities can be found in Figure 2.

Furharvesters spent an estimated 266,059 user days in pursuit of furbearers, including 158,039 days trapping, 78,491 days hunting, and 29,529 days running. These figures represent a 39% increase in combined user days from the previous season. Average days afield by trappers, hunters, and runners were similar to last season (40, 20 and 39 last season versus 42, 20 and 49 this season, respectively) but more furharvesters reportedly afield led to the increase in total user days. Participation in various combinations of furharvesting activities is presented in Table 2.

Harvest, participation, and activity levels for trapping, hunting and running are presented in Tables 3-5, respectively. As is typically the case, trappers accounted for the majority of harvest of most furbearer species. Though far more coyotes are taken by hunters than trappers, most hunters who take coyotes by hunting do not have a furharvesting license, so take by these individuals isn't represented in this survey.

Historical furbearer harvest in Kansas based on the Furbearer Harvest Survey can be found in Table 6. Harvest was up for most species from last year, as well as 5-year averages. In fact, this was the most total furbearers harvested since the 1987-88 season. Notably, each of our three most important furbearers saw sizeable increases in harvest from 5-year averages (bobcat-32%, coyote–72%, and raccoon–44%).

Table 1. Sample size and response rate of survey methods used to conduct the Furbearer Harvest Survey.

			Respon	ise Rate
	Number	Non-deliverables	Number	Percent
E-mail	1299	150	458	39.9
Paper survey	4292 ^a	99	1429 ^b	34.1
Total	4715	99	1929	41.8

Sent to those without e-mails and e-mail nonrespondents.

^bIncluded 42 online responses and 1387 responses to the paper survey.

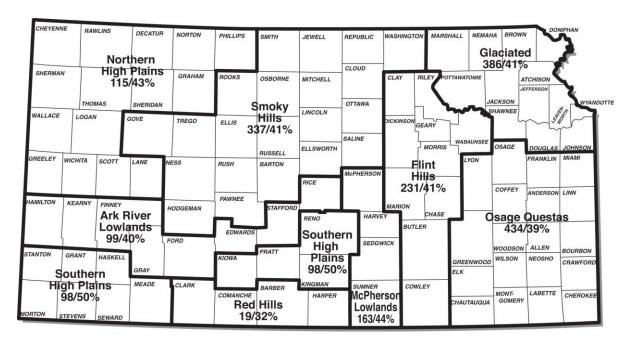


Figure 1. The number of survey respondents (number) and the response rate of furharvesters (percent) within each physiographic province in Kansas.

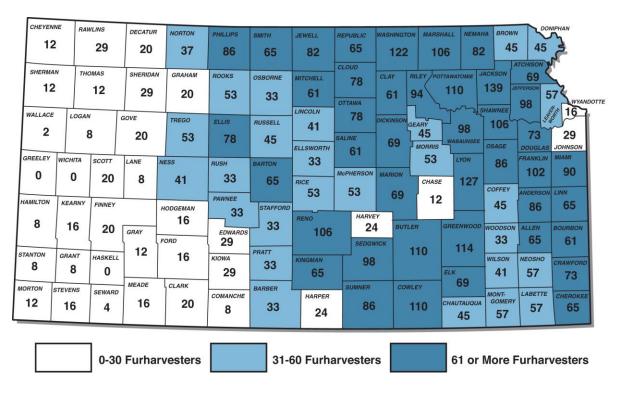


Figure 2. Estimated furharvester distribution in Kansas based on the county in which active survey respondents conducted most of their furharvesting activities.

Table 2. Estimated number and percent of furharvesters who participated in various furharvesting activities, and

total estimated participation in trapping, hunting and running by furharvesters in 2012-13.

Activity	Number of Furharvesters	Percent of Furharvesters
Inactive	2265	28.8
Trap only	1616	28.9
Hunt only	1400	25.1
Run only	57	1.0
Trap and hunt	1943	35.8
Trap and run	0	0.0
Hunt and run	331	5.9
Trap, hunt and run	237	4.2
Total Participation		
Total trappers	2557	45.6
Total hunters	2630	46.9
Total runners	421	7.5

Table 3. Harvest, participation, and activity levels for trappers in Kansas during the 2012-13 harvest season.

Species	Number of Trappers Who Pursued (n)	Estimated Harvest	Total Days Traps Set	Ave Traps/Day	Captures/100 Trap Days	Maximum Harvest	Ave Harvest/ Trapper
Badger	236	1,735	6,582	11.6	4.4	15	1.8
Beaver	325	9,495	5,981	5.04	12.4	70	7.2
Bobcat	603	6,866	22,193	10.9	1.3	40	2.8
Coyote	615	30,251	21,864	12.4	4.5	307	12.1
Red Fox	103	784	1,754	8.61	5.3	13	1.9
Gray Fox	20	82	326	8	0.0	11	1
Swift Fox	22	555	437	7.72	8.2	34	6.2
Mink	53	225	942	5.38	4.5	18	1
Muskrat	167	5,364	2,611	6.52	13.9	105	7.9
Opossum	692	41,350	21,681	12.1	5.5	250	14.6
Otter	48	518	615	4.48	3.7	32	2.6
Raccoon	849	90,455	33,114	14.9	8.5	335	26.1
Skunk	480	16,924	15,554	12.9	3.6	250	8.6
Weasel	4	0	129	3.25	0.0	0	0

Table 4. Harvest, participation, and activity levels for hunters in Kansas during the 2012-13 harvest season.

Species	Number of Hunters Who Pursued (n)	Estimated Harvest	Harvest/100 Days	Maximum Harvest	Ave Harvest/ Hunter
Badger	50	282	38.5	12	1.4
Bobcat	432	1,278	10.3	17	0.7
Coyote	801	22,332	51.5	180	6.8
Red Fox	51	98	12.3	4	0.5
Gray Fox	24	8	0.0	2	0.1
Swift Fox	20	65	16.3	6	0.8
Opossum	96	2,486	77.2	45	6.3
Raccoon	402	29,818	94.5	200	18.2
Skunk	50	580	41.0	15	2.8

Table 5. Treeing success, participation, and activity levels for furharvesters in Kansas during the 2012-13 running season.

Species	Number of Runners Who Pursued (n)	Estimated Take*	Take/100 Days*	Maximum Take*	Ave Take/ Runner*
Bobcat	10	53	9.5	5	1.3
Red Fox	0	0	0	0	0
Gray Fox	0	0	0	0	0
Opossum	25	694	70.5	34	6.8
Raccoon	144	28,777	116.3	600	48.75

^{*}Take refers to the number of animals "seen or treed" while running.

Table 6. Historical harvest of furbearers in Kansas based on furbearer harvest survey.

			Bobcat			Gray	Red	Swift Fox	Swift				Otter			Striped	
Seasons	Badger	Beaver	Tagging *	Bobcat	Coyote	Fox	Fox	Tagging *	Fox	Mink	Muskrat	Opossum	Tagging*	Otter	Raccoon	Skunk	Weasel
1969-70	311	8583	33 3	373	9758	81	193	35 5		2189	43773	10452	*33 3		63004	2466	28
1970-71																	
1971-72																	
1972-73	305	5178		458	13385	102	508			1508	27828	11421			46101	3174	
1973-74																	
1974-75																	
1975-76	1202	6484		1454	30150	539	638			1875	51083	45994			102760	8703	
1976-77																	
1977-78	4054	5826		1705	35138	141	703			1764	38167	45625			74731	9824	
1978-79	4530	5315	825	1705	50195	193	533			2192	36639	51156			101450	15184	
1979-80	5882	19140	1050	1955	51380	245	888			3378	75962	56937			133311	23297	
1980-81	2501	14939	1027	1966	35238	274	645			3304	59063	49741			94754	16495	
1981-82	2673	5440	882	1730	32310	171	672			2342	30703	59916			93823	15917	
1982-83	3708	7653	1014	1686	36526	247	795		1000	3583	49528	58138			87425	11453	
1983-84	1754	8908	1334	2471	31466	93	1193		740	1600	21791	19347			67042	4985	
1984-85	1774	11814	1869	3212	33066	122	876		426	1937	24863	31142			108694	6806	
1985-86	1348	15543	1916	2837	34418	117	487		314	1507	15241	30955			96708	6909	
1986-87	3009	14732	2720	4522	40999	107	961		1161	2571	25561	59190			119488	10460	21
1987-88	2402	12474	3192	4805	41460	123	1113		650	2619	33814	54714			118878	8847	23
1988-89	1417	13989	2878	4492	25387	235	672		442	1545	22822	24117			72028	4233	5
1989-90	476	9607	1560	2482	15314	30	462		264	630	7114	9775			38274	2043	4
1990-91	442	5214	1409	1694	11968	34	242		76	423	4083	5493			27137	1258	0
1991-92	571	5429	2043	2453	15941	77	509		93	713	3043	12427			43977	3576	0
1992-93	687	3044	1618	2307	16076	59	328		64	252	2115	8101			33710	3125	2
1993-94	649	5288	2413	2900	16595	55	731		73	368	2571	12727			48203	2610	146
1994-95	781	12123	3590	5352	17022	204	1003	48	34	746	6215	19692			64951	4131	9
1995-96	522	8089	3020	3932	14009	99	753	33	45	291	3598	16120			58600	2877	2
1996-97	874	10653	4296	7041	19794	179	1232	33	144	473	5451	29980			93190	8065	40
1997-98	876	13337	3347	6233	14398	71	823	17	25	718	9679	49437			108727	9323	101
1998-99	958	8606	2385	3938	12125	152	490	7	15	419	7445	26512			71709	6375	107
1999-00	451	8845	2121	3578	11920	191	455	5	0	257	7252	13051			51307	3887	11
2000-01	1094	9388	2731	4018	15054	97	559	6	24	164	3964	14294			56143	5460	0
2001-02	434	9617	3597	5286	15329	35	584	32	0	180	3348	17080			72918	5559	0
2002-03	910	7716	5054	6521	18577	62	578	86	203	246	4596	32595			79538	10255	0
2003-04	1760	7250	5963	9654	25407	64	625	178	470	303	2823	42125			94506	10952	40
2004-05	1469	7737	5353	7062	23322	140	783	86	129	230	4845	43356			84132	10910	0
2005-06	1312	7186	6021	7458	21861	89	459	58	135	206	5733	38909			66458	12730	3
2006-07	1882	11028 6658	7234	9998 9381	32494 29305	179 84	774 976	70	309 136	439 209	8150 5120	46965 51138			87241 93687	15583 17669	0 4
2007-08	2020		5668					65 08									
2008-09	1619	6855	4080	5944	27100	84 67	707	98	27	177	5767	46113			85061	16748	0
2009-10	1109	4572	1944	3210	21554	67	426	39	130	179	5681	18763			41355	7384	0
2010-11	1898	9774	4809	8098	39152	43 54	988	43	126	371	15193	48296	107	120	97858	12755	5
2011-12 2012-13	1591 2017	9191 9535	5918 5926	7412 8164	36460 52681	54 90	732 898	113 246	325 620	210 225	8282 5396	43758 43844	127 128	139 527	101924 121232	14060 17504	8 0
	22.4%	28.7%	32.2%	19.9%	71.5%	35.5%	17.3%	243.6%	316.7%	-1.8%	-32.6%	5.4%	0.8%	279.1%	44.4%	27.6%	100.0%
5 yr trend						35.5%	17.370	243.070	310.170	-1.070	-JZ.U%	J.470	0.070	213.170	44.470	21.070	100.070

^{*} Bobcat, otter and swift fox "tagging" values are based on pelt tagging records

Special Section

The "Special Section" of the Furbearer Harvest Survey changes annually and is used to collect information and opinions from furharvesters on a diversity of topics that relate to furharvesting or furbearers. Past surveys have addressed subjects such as wildlife diseases, trap ownership and use, and regulatory preferences. This year, we took a closer look at raccoon hunting techniques with a specific interest in comparing calling of dens with other hunting techniques. We also asked several questions relating to recruitment and participation in the furharvesting activity. Similar questions were asked to furharvesters five years ago and reported in the 2007-08 Furbearer Harvest Survey.

Results from the question assessing raccoon hunting participation and harvest can be found in Table 7 below. Hunting with hounds was the most popular and effective raccoon hunting technique based on total, average, and maximum harvests, followed by calling of dens. During the season, hound hunters averaged about twice as many coons and a little over twice the total harvest as den callers. Other raccoon hunting techniques were far less popular and/or effective, with no other technique resulting in more than 7.4% of the total harvest.

Table 7. Comparison of participation and harvest in various raccoon hunting techniques.

harvest technique	n	% of raccoon hunters	reported harvest	% of raccoon harvest	Harvest per hunter	maximum harvest
hounds	48	39.7	1199	57.8	25	120
calling den	42	34.7	569	27.4	13.5	112
other calling	16	13.2	153	7.4	9.6	50
shot while hunting other species	23	19.0	65	3.1	2.8	13
salvage	17	14.0	47	2.3	2.8	5
other	6	5.0	41	2.0	6.8	25
total	121	100	2074	100	17.1	120

To assess current furharvester participation characteristics, furharvesters were first asked what year they began furharvesting. Results are presented in Figure 3, and separated by whether or not the respondent furharvested during the 2012-13 season. A lot of our current furharvesters began furharvesting in the 1970's, but we also have a lot of new furharvesters who began in the last several years. Year at which furharvesting began appears to have very little influence on whether or not the person was active last season.

Furharvesters were also asked how many of the past five seasons they furharvested in Kansas or in some other state. Results of this question for resident furharvesters is presented in Figure 4 below. Almost 60% of resident furharvesters indicated they furharvested in Kansas each of the past five seasons. Eighty-five percent of resident furharvesters have not furharvested in any other state in the past five seasons. Among nonresidents, half of the 42 respondents who furharvested in Kansas in the past five seasons were active either four or five of those seasons.

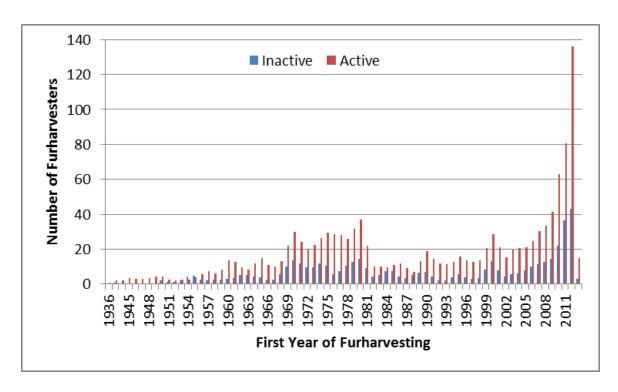


Figure 3. Year at which furharvesters who did (active; n=1298) and did not (inactive; n=484) furharvest during the 2012-13 furharvesting season first began furharvesting. (Data smoothed: $y_{(i)}$ =.5 $y_{(i)}$ +.25 $y_{(i+1)}$ +.25 $y_{(i-1)}$.)

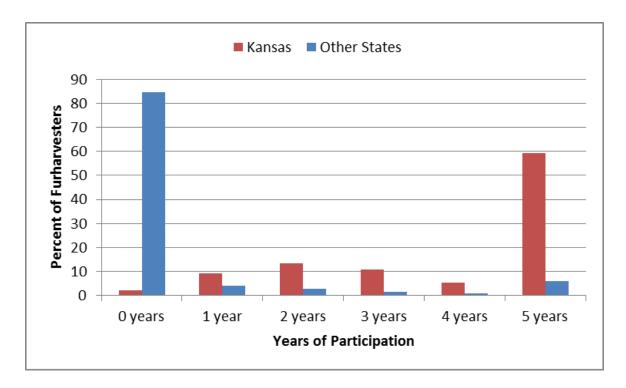


Figure 4. Number of years of the past five in which resident furharvester license buyers were active (did furharvest) in Kansas or in some other state.

Furharvesters were also provided a list of participation categories and asked to select which one best represents their participation in furharvesting. Results are differentiated for those who did and did not furharvest during the 2012-13 season, and presented in Figure 5 below. Of particular note: almost 45% of inactive furharvesters purchase a license in case they see a furbearer while hunting other species, 55% of active furharvesters are active every or nearly every season, and over 25% of active furharvesters recently began furharvesting (either after years of inactivity or for the first time ever).

Similar questions were asked to furharvesters five years ago and provided in the 2007-08 Furbearer Harvest Survey Report. The "age at which furharvesting began" results are similar in terms of high recruitment in the 1970's and during the most recent seasons, but the current jump in participation is much more pronounced than that of five years ago (almost 400 new furharvesters in the three most recent seasons currently, whereas there were only about 220 in the previous survey). On the other two questions, additional analysis is needed to make a comparison.

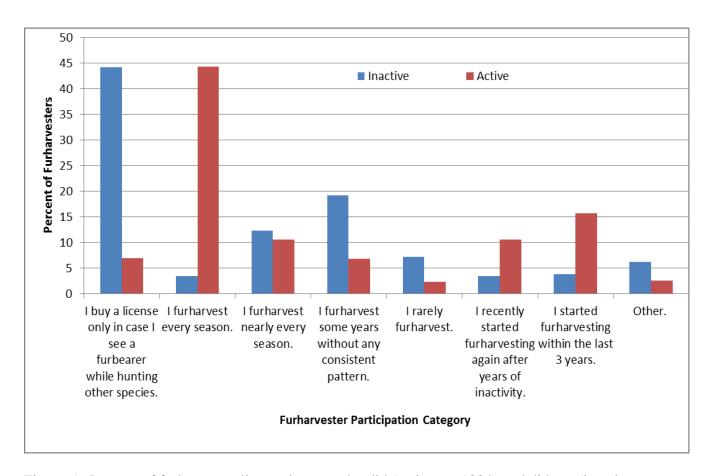


Figure 5. Percent of furharvester license buyers who did (active; n=1334) and did not (inactive; n=525) furharvest during the 2012-13 furharvesting season, represented by various categories of participation.

Appendix 1.

2012-13 Paper Version of the Furbearer Harvest Survey

2012-13 Furbearer Harvest Survey

1	Door	Kansas	· Dani	harr	acto	
	Dear	Kansa	s Fur	narv	este	'n

Coyote: ____ days

You have been selected to participate in the Kansas Furbearer Harvest Survey. Your name was randomly chosen from the list of furharvesters who purchased a license in 2012. This survey provides our best estimate of furharvester activity, and is used to guide furbearer management decisions in Kansas.

Please complete the survey within 7 days and return in the postage paid envelope. Or if you have internet access, we would rather you completed this survey online at: https://www.surveymonkey.com/s/Fur12.

	's catch.
Did you hunt or trap furbearers during the 2012-13 season, or did you pursue fur dogs during the running season in 2012? O Yes O No (If no, skip to question 21.)	rbearers with
2. In which county did you do most of your furharvesting in 2012-13?	
3. Did you TRAP for furbearers in Kansas during the 2012-13 season?	
O Yes O No (If no, skip to question 13.)	
4. How many of each did you harvest by TRAPPING in Kansas during the 2012-1 (Enter "0" if none were harvested.)	3 season?
Badger: Gray Fox: Beaver: Opossu	m:
Bobcat: Red Fox: Muskrat: Raccoo	n:
Coyote: Swift Fox: Mink: Striped	Skunk:
Otter: Weasel	:
5. How many total calendar days did you TRAP furbearers or coyotes in Kansas d 2012-13 season? The trapping season was 94 days (Nov 14-Feb 15) for all furbea beaver, which was 138 days (Nov 14-Mar 31). Total days:	
6. How many calendar DAYS did you trap for each species? (Enter "0" if none.)	
you had sets out that were intended or likely to catch that species. For example, if opossums in your raccoon sets, record your raccoon trapping days for opossum al	

Striped Skunk: ____ days

averag	ge? Count any	ou trapped each species, h trap that was intended or cour raccoon sets, record	likely to catch that sp	pecies. For example, if you
	Badger:	_ traps	Opossum:	_ traps
	Bobcat:	_ traps	Raccoon:	_ traps
	Coyote:	_ traps	Striped Skunk:	_traps
8. Did	l you set traps s	pecifically for BEAVER)	
	O Yes	O No (If no, skip to que	stion 9.)	
		DAYS did you trap for E		
	average?	time, how many BEAVE traps	ER TRAPS and you na	ive set per day on
9. Did	l you set traps s	pecifically for OTTER?		
	O Yes	O No (If no, skip to que	stion 10.)	
	a. How many	DAYS did you trap for C	OTTER? days	
	b. During this average?	time, how many OTTER traps	TRAPS did you hav	e set per day on
10. D	id you set traps	specifically for RED FO	X, GRAY FOX, or SV	WIFT FOX?
	O Yes	O No (If no, skip to que		
		DAYS did you trap for e		nter "0" if none.) Count any
	Red fox:	days		
	Gray fox	:: days		
	Swift for	c: days		
		time you trapped each sp Count any trap that was in		APS did you have set per day tch that species.
	Red fox:	traps		
	Gray fox	:: traps		
	Swift for	x: traps		

11. Did you set traps specific	cally for MUSKRAT or	MINK?			17. Did you RUN fur	bearers in	Kansas during the	2012 runnii	ng season (Ma	r1-Nov1,	2012)?	
O Yes O No	(If no, skip to question	12.)			O Yes	O No (If	no, skip to questic	n 21.)				
any day you had sets	did you trap for MUSK out that were intended			e.) Count	18. How many of each did you "tree" during the 2012 running season in Kansas? (Enter "0" in none were treed.)							
Muskrat: da					Bobcat:		Red Fox:	_	Raccoon:			
Mink: day	ys						Opossum:					
set per day on averag Muskrat: tra					19. How many total calendar days did you RUN furbearers in Kansas during the 2012 season? The furbearer running season was 246 days (Mar1-Nov1). Total days:							
Mink: tra	ps			20. How many calendar DAYS did you RUN each species? (Enter "0" if none.)								
12 D'1	II C WEAGELO				_		Red Fox:	_		: da	21/6	
12. Did you set traps specific O Yes O No		12)					Opossum:		raccoon		133	
O res O No	(If no, skip to question	13.)			Glay Fox.	days	ороззии	days				
b. During this time, haverage? traps	now many WEASEL TR	APS did yo	ı have set per day on		Special Section – Fur 21. Approximately wifurbearers)?	hat year di	id you first begin f	iurharvesting	g (hunting, trap	oping or n	unning	
	(If no, skip to question	17.)			22. Of the last 5 year	s, how ma		ed, trapped o	or ran furbeare	rs:		
14. How many of each did y (Enter "0" if none were harv		G in Kansas	during the 2012-13 se	eason?	in Kansas?	0 years O	1 year 2 year O O	s 3 years O	4 years 5 ye			
Badger:	Gray Fox:	O	possum:		in some other state?	O	O O	O	0 0	,		
Bobcat:			accoon:		23. Which one of the	following	r hest describes vo	ur furharves	ting participat	ion?		
Coyote:	Swift Fox:		riped Skunk:		O I furharves O I furharves	t every sea t nearly ev	ason. very season.		ung participat	ion:		
15. How many total calenda 2012-13 season? <i>The furbed</i>				ring the	O I recently s O I furharves	tarted furl t some yea	g within the last 3 narvesting again af ars without any con	ter years of				
Total days:						nse only i	n case I see a furbe					
16. How many calendar DA	YS did you HUNT for e	ach species?	(Enter "0" if none.)		24. If you have an e-	mail addra	ec and are willing	to receive a	direct link to	cilityeve ei	uch as this is	
Badger: days	Gray Fox:	days	Opossum:	days	the future, should you							
Bobcat: days			Raccoon:	days			_					
Coyote: days			Striped Skunk: _	days	The results of this sur completed. Last year reports are currently p "Furbearer Reports" 1	's Furbear oosted on t	er Harvest Survey the site. From the	report and s "Furharvest	several other f	urbearer-r	elated	