

## **2007-08 New Jersey Coyote and Fox Hunter Survey**

### **Summary**

There are an estimated 1,760 active canine (coyote, gray fox and red fox) hunters in New Jersey (Burnett 2008). Coyote and fox hunting was authorized during the small game seasons proscribed by New Jersey's annual Game Code. Properly licensed and permitted deer hunters may also harvest coyote and fox during proscribed deer seasons. A special permit was required when hunting coyote and fox between 14 January to 18 February 2008 (inclusive) when hunting with a muzzleloading rifle in an area with no open deer season; when with a shotgun using shot size larger than #4 fine shot; or, when hunting at night with shotgun only. The daily bag limit was two coyote per day but no daily bag limit on fox. One thousand nine hundred ninety-five permits were issued for the 31-day season. A **2007-08 New Jersey Coyote/Fox Hunter Survey** was mailed to 500 holders of the Special Eastern Coyote and Fox Hunting Permit. The survey objective was to gather information regarding canine hunter demographics, previous hunting experience, current hunting activity and equipment used. The usable response rate was 44.7 percent. Ninety-seven (96.8) percent of permit holders were New Jersey State residents. The mean age of all permit holders was 43.0 years. Prior to the 2007-08 hunting season, 53.8 percent of respondents indicated they had previously hunted coyotes or fox in New Jersey or in other states. Over half (55.2 percent) of survey respondents indicated specifically hunting for coyote or fox between 01 October 2007 and 18 February 2008 and 92.6 percent were active a mean 5.1 days during the special permit season (14 January-18 February). Survey respondents reported 115 unique coyote sightings and 117 instances of finding coyote sign (tracks, scat) in 92 municipalities from 15 New Jersey counties. Most of the estimated 1,011 hunters active during the special permit season: (1) hunted from ½ hour before sunrise until ½ hour after sunset (49.1 percent); (2) hunted on private land (50.8 percent); and (3) used a shotgun (86.1 percent) with #4 fine shot (37.1 percent). The estimated canine harvest during the special permit season was 17 coyotes, 25 gray fox and 211 red fox.

This survey was conducted as part of **Job III-B. Hunter and Trapper Harvest, Recreational and Economic Survey**. This job is included within **Grant Number W-68-R-12, New Jersey Wildlife Research and Management: Project III. Upland Wildlife and Furbearers**.

### **Methods**

One thousand nine hundred ninety-five special, coyote and fox hunting permits were issued for the 2008 special permit season via the new electronic license and permit system. Demographic analyses were completed on all permit holders.

The 2007-08 New Jersey Coyote/Fox Hunter Survey (Appendix A), including a pre-addressed business reply envelope, was mailed to 500 permit recipients. Six questionnaires (1.2 percent) were returned by the postal authorities as undeliverable and 494 were presumed delivered. Two hundred twenty-one responses were returned by 15 April 2008 for a usable response rate of 44.7 percent. Harvest data analyses are based on the 120 respondents (24.3 percent) that actively hunted for coyote and/or fox at some time during the 2007-08 hunting season.

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### Results

#### Hunter Age Class

The age class distribution of permit holders is presented in Table 1. Known ages, as of 30 September 2007, ranged from 10 to 83 years, with a mean age of  $43.0 \pm 0.6$  years (SD = 14.2). The age class distributions from the 2006-07, 2005-06 and 2004-05 surveys are presented for comparison.

Table 1. Age class distribution of 2008 NJ Special Coyote and Fox permit holders

Age Class	Number of hunters (2007-08)	Number of hunters (2006-07)	Number of hunters (2005-06)	Estimated number of hunters (2004-05)
< 16	56	37	23	9
16 to 19	77	63	16	7
20 to 24	101	87	20	9
25 to 29	139	115	41	29
30 to 34	166	128	49	27
35 to 39	222	174	77	80
40 to 44	305	208	90	86
45 to 49	268	180	83	55
50 to 54	210	141	79	64
55 to 59	192	159	72	75
60 to 64	135	111	30	42
65+	124	84	39	55
Unknown	0	0	20	0
<b>Total</b>	<b>1,995</b>	<b>1,487</b>	<b>639</b>	<b>537</b>

#### Hunter Residency

The residency distribution of permit holders by county (resident) and state (non-resident) is presented in Table 2. New Jersey residents constitute the majority of coyote/fox hunters (96.8 percent), and live in every New Jersey County. Most (37.7 percent) of the hunters live in North Jersey<sup>1</sup>; 31.4 percent live in Central Jersey<sup>2</sup>; and, 30.9 percent live in South Jersey<sup>3</sup>. Non-resident hunters live in the neighboring states of Pennsylvania (2.4 percent), New York (0.7 percent) and Delaware (0.1 percent). The residency distributions from the 2006-07, 2005-06 and 2004-05 are presented for comparison.

#### Hunter Gender

Information on gender was not solicited during the 2007-08 survey, nor was it provided by ALS. It is not presume to have changed significantly from 2004-05 (98.4 percent male, 1.6 percent female).

#### Hunter Prior Experience

Information on previous hunting experience was solicited from survey respondents in 1999, 2000, 2002, 2003, 2004, 2005, 2006 and 2007<sup>4</sup>. No survey was conducted in 2001. The percentage of these survey respondents with previous experience was 61.5, 64.2, 64.2, 61.1, 75.7, 74.1, 63.6 and

<sup>1</sup> Bergen, Essex, Hudson, Hunterdon, Morris, Passaic, Somerset, Sussex, Union and Warren counties..

<sup>2</sup> Burlington, Mercer, Middlesex, Monmouth and Ocean counties.

<sup>3</sup> Atlantic, Camden, Cape May, Cumberland, Gloucester and Salem counties.

<sup>4</sup> Prior experience was requested for coyote only (1999 and 2000), and coyote or fox (2002-2007).

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55.6 percent, respectively. Prior to the 2007-08 hunting season, 53.8 percent of respondents indicated they had previously hunted coyotes or fox in New Jersey or in other states.

*Table 2. Residency distribution of 2007 NJ Special Coyote and Fox permit holders*

<b>County</b>	<b>Number of hunters (2007-08)</b>	<b>Number of hunters (2006-07)</b>	<b>Number of hunters (2005-06)</b>	<b>Estimated number of hunters (2004-05)</b>
Atlantic	135	118	24	15
Bergen	74	27	19	13
Burlington	165	149	40	46
Camden	84	65	19	27
Cape May	66	72	27	15
Cumberland	162	146	76	29
Essex	17	21	11	7
Gloucester	87	56	29	22
Hudson	10	10	6	0
Hunterdon	98	78	31	40
Mercer	44	45	22	24
Middlesex	73	45	29	24
Monmouth	105	81	26	18
Morris	93	42	40	35
Ocean	219	174	48	42
Passaic	64	41	26	24
Salem	63	50	26	9
Somerset	58	26	15	13
Sussex	153	122	44	46
Union	17	12	6	7
Warren	137	70	68	53
Arkansas	0	1	0	0
Connecticut	0	2	0	0
Delaware	3	0	0	0
Florida	0	1	0	0
Iowa	0	1	0	0
Maryland	0	1	1	0
New York	13	4	1	2
Pennsylvania	48	24	20	18
Unknown	7	3	0	7
<b>Total</b>	<b>1,995</b>	<b>1,487</b>	<b>639</b>	<b>537</b>

### Permit Sales

A summary of special season permit sales is presented in Table 3. Coyote hunting was authorized for current and valid license holders by permit (cost = \$2) only during the prescribed special seasons 1997-2000 and 2002-2007. Coyote could be hunted in conjunction with the prescribed fox hunting seasons during the 2000-01 season (outside dates September 30, 2000 to February 19, 2001) and no permit was required that year. Permits have been required since 2002 when night hunting coyote or fox was authorized. The increase in permit issuance for 2007 and 2008 may be a result of the ease in obtaining a permit and a growing interest in predator hunting in popular sporting magazines.

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Table 3. Summary of New Jersey special season permit sales, 1997 to present

Year	Permit issuance	Revenue to Division (\$US)
1997 <sup>5</sup>	865	1,730.00
1998	998	1,996.00
1999	874	1,748.00
2000	757	1,514.00
2001	Not required	0.00
2002 <sup>6</sup>	354	708.00
2003	379	758.00
2004	345	690.00
2005	545	1,090.00
2006	639	1,278.00
2007	1,494	2,988.00
2008	1,995	3,990.00
<b>Total</b>	<b>9,245</b>	<b>18,490.00</b>

### Active Hunters

Over two-fifths (44.8 percent) of respondents did not hunt coyote/fox during the 2007-08 seasons. Primary reasons for non-participation included no time (52.5 percent) and health (15.2 percent). Based on survey responses, 894 permit holders were inactive and 1,101 specifically hunting for coyote or fox between 01 October 2007 and 18 February 2008.

Survey results estimated that 135 hunters pursued coyote/fox from 01 October to 11 November 2007 (bow and arrow only), spent a mean 1.5 days afield and enjoyed 207 recreation-days. Harvest was estimated at one coyote, one gray fox and two red fox.

Survey results estimated that 469 hunters pursued coyote/fox from 12 November 2007 to 13 January 2008 (firearm or bow and arrow), spent a mean 3.7 days afield and enjoyed 1,735 recreation-days. Harvest was estimated at 4 coyotes, 23 gray fox and 78 red fox.

Based on survey responses, 1,011 hunters pursued coyote/fox from 14 January to 18 February 2008, spent a mean 5.1 days afield and enjoyed 5,156 recreation-days while harvesting an estimate 17 coyotes, 25 gray fox and 211 red fox.

For all periods combined, an estimated 1,083 hunters enjoyed 9,964 recreation-days of coyote/fox hunting during the 121-day season, and averaged 9.2 days afield per hunter while harvesting an estimated 22 coyotes, 55 gray fox and 260 red fox. Most hunting activities occurred in Sussex, Warren, Ocean, Burlington and Cumberland counties (total 55.4 percent).

Active respondents reported 115 coyote sightings and 117 instances of finding coyote sign (tracks, scat) in 92 municipalities from 15 New Jersey counties during 2007-08 compared to 148 sightings and 190 signs reported in 19 counties during 2006-07. No reports of coyote evidence were received from Bergen, Camden, Essex, Hudson or Union counties during the performance period. Coyote presence as reported by survey respondents was highest in Ocean (28), Sussex (22) and Cumberland (20) counties.

<sup>5</sup> Permit valid for harvesting coyote only 1997-2000.

<sup>6</sup> Permit valid for harvesting coyote, gray fox and red fox 2002-present.

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### Hunter Expenditures

Information on hunter expenditures (excluding license and permit fees) was not solicited during 2007-08. The majority of hunters (54.9 percent in 2004 and 56.9 percent in 2003) spent \$100 or less on coyote/fox hunting in New Jersey during 2004-05.

### 2008 Special Coyote/Fox Season (14 January to 18 February 2008)

The following information pertains only to the Special Permit Coyote/Fox season. Based on survey responses ( $n = 112$ ), 1,011 sportsmen pursued coyote/fox in New Jersey during this period, spent a mean 5.1 days afield and enjoyed 5,156 recreation-days while harvesting an estimated 17 coyotes, 25 gray fox and 211 red fox.

### Hunting Activity

Information on hunter activity by 12-hour period was solicited. An estimated 386 participants (38.2 percent) hunted at night only, 496 (49.1 percent) hunted during daylight only and 119 (11.8 percent) hunted during both day and night periods based on survey responses. Reasons for period preference were not solicited.

Information on hunter activity by land ownership was solicited and results summarized in Table 4. An estimated 848 (83.9 percent) hunted one, land ownership class, exclusively. An estimated 163 hunted two or more (16.1 percent) and 17 (1.7 percent) did not provide the requested information. Most hunters (50.8 percent) hunted on private land, exclusively. Reasons for selection were not solicited.

*Table 4. Hunter activity by land ownership 14 January to 18 February 2008 based on responses ( $n = 118$ ) to the 2007-08 New Jersey Coyote/Fox Hunter Survey*

Land owner	Estimated number of hunters	
	2008	2007
Private	514	467
Federal (military bases, national wildlife refuge)	25	17
State Wildlife Management Area	214	225
Utility Right-of-way	0	17
State Park or Forest	86	135
County or Municipal	8	56
Unknown	17	6
<b>Total</b>	<b>1,011</b>	<b>827</b>

### Equipment

Special season permit holders could hunt coyote and fox with either bow and arrow (minimum 35-lb draw or peak weight), muzzleloading rifle (minimum .44 caliber) or shotgun (10 or 12 gauge only,  $\#4 \leq \text{shot size} \leq \text{"T"}$ ) between the hours of  $\frac{1}{2}$  hour before sunrise to  $\frac{1}{2}$  hour after sunset. Weapons were restricted to shotguns between  $\frac{1}{2}$  hour after sunset to  $\frac{1}{2}$  hour before sunrise. The use of dogs or bait was prohibited.

Based on survey responses, a shotgun was more often (86.1 percent) than a muzzleloading rifle (11.1 percent) or bow and arrow (2.8 percent) during the special season. Shotgun hunters favored #4 fine shot (37.1 percent) over "T" (25.8 percent) or #2 fine shot (17.5 percent).

Possession of a predator call (electronic, mouth blown or other) was required while hunting during the special season. Information on predator calls was not solicited during the 2007-08 survey. The

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majority of hunters used a mouth blown call (34.0 percent), electronic call (33.3 percent) or both types (31.5 percent) that imitated rabbit (93.2 percent) during 2004-05.

### Hunter Harvest

New Jersey law requires all successful hunters to report their coyote harvest to the nearest Division Law Enforcement Office within 24 hours of harvest. A summary of hunter harvests during the special permit seasons (1997-2008) is presented in Table 5. All of the coyotes harvested by permit holders in 2008 were taken after sunset. The 2008 coyote hunter success rate was 0.3 percent compared to 0.4 percent (2007) 1.3 percent (2006), 1.1 percent (2005) and 1.7 (2004), respectively.

*Table 5. Summary of NJ hunter harvests during the special, permit coyote/fox seasons (1997-2008)*

<b>Year</b>	<b>Permit issuance</b>	<b>Estimated active hunters</b>	<b>Reported coyote harvest</b>	<b>Estimated gray fox harvest</b>	<b>Estimated red fox harvest</b>	<b>Estimated other harvest</b>
1997	865	528	4	N/A	N/A	N/A
1998	998	634	11	N/A	N/A	N/A
1999	874	266	6	N/A	N/A	N/A
2000	757	410	7	N/A	N/A	N/A
2001	0					
2002	354	256	6	Not solicited	Not solicited	Not solicited
2003	379	252	4	27	76	0
2004	345	240	4	12	68	57 crows
2005	545	358	4	11	93	53 crows
2006	639	396	5	8	120	Not solicited
2007	1,494	774	3	20	232	Not solicited
2008	1,995	1,011	3	25	211	Not solicited
<b>Total</b>	<b>7,250</b>		<b>59</b>	<b>103</b>	<b>800</b>	<b>110 crows</b>

### Additional Information

Additional information on coyote and fox is provided in Attachment 2 of the Federal Aid in Wildlife Restoration Report W-68-R-12 Job III-B entitled Hunter and Trapper Harvest, Recreational and Economic Survey. Data files are stored at the Division of Fish and Wildlife (NJ Department of Environmental Protection) Nacote Creek and Hedge Haven field offices.

# NJ Division of Fish and Wildlife

## 2007-08 Coyote/Fox Hunter Survey

Dear Fellow Hunter:

This is a copy of the 2007-08 Coyote/Fox Hunter Questionnaire. This survey contains questions about your coyote and fox hunting activities in New Jersey this past (2007-08) season. Kindly take a moment now to complete this survey and return it in the self-addressed envelope provided. The information you provide is anonymous.

Only hunters who received a 2008 New Jersey Coyote/Fox Special Hunting Permit will receive this survey. The information we receive in this survey will be used in evaluating, planning and improving hunting seasons in New Jersey and for determining harvest levels and trends for several species. Your reply is important to us even if you did not hunt or even if you were not successful harvesting any game this year.

Thank you for completing this questionnaire and for promptly returning it in the envelope provided.

Sincerely,

Larry Herrighty, Chief  
Bureau of Wildlife Management  
NJ Division of Fish and Wildlife

### HOW TO COMPLETE THIS SURVEY

1. Please answer all applicable questions. Answer this questionnaire even if you did not hunt or if you did not harvest any game during the past season.
2. Estimate the number of days hunted or game killed if you don't recall the exact number. Please list specific numbers where they're asked for in days; please don't write in "week" or "month".
3. Please report **only** the game taken by **you**, not the entire hunting party. For example, if you were hunting with a friend who shot two fox while you shot only one, you would report 1 fox.
4. Record your answers in the space provided after each question.
5. After completing the questionnaire, return it in the envelope provided.

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### 2007-08 New Jersey Coyote/Fox Hunter Survey Questionnaire

1. Prior to 2007-08, have you hunted coyotes or fox in the past? (Check one)  YES  NO
2. Between Oct. 01 to Feb 18, did you *specifically* hunt for coyote or fox in NJ?  YES  NO  
(i.e., coyote or fox was your primary target and *not taken opportunistically while deer hunting*)

If you answered **YES** to Question 2, please go on to Table 1.

3. If you answered **NO** to Question 2, please list the **single most important** reason why you did not actively pursue coyote or fox in New Jersey during the 2007-08 season: \_\_\_\_\_.

If you answered NO to Question 2, **STOP HERE**. Thank you for participating in this year's Coyote/Fox Hunter Survey. Kindly return the survey in the self-addressed envelope provided. The NJ Division of Fish and Wildlife values your input and the information you provided.

Table 1 – For Questions 4-6, please provide the information requested for each time period. Please use the following abbreviations for weapon types: “B” for bow; “M” for muzzleloading rifle; “S” for shotgun.

Time Period	A. Number of days hunted	B. Weapon type(s) used	C. Number coyotes harvested	D. Number red fox harvested	E. Number gray fox harvested	E. Primary county hunted
4. Sep 30 – Nov 10 (Archery only)		B				
5. Nov 11 – Jan 14 (Firearm or Bow)						
6. Jan 15 – Feb 19 (Special Permit)						

7. Please list the locations in which you saw coyotes or found their tracks/scat during the 2007-08 seasons:

	Township	County	Township	County	Township	County
Coyote seen						
Tracks/scat						

8. Please check the time period(s) you hunted during the 2008 **Special Permit** Coyote / Fox Season:

- A. ½ hour before sunrise until ½ hour after sunset  B. ½ hour after sunset until ½ hour before sunrise

9. If you used a shotgun during the 2008 Special Permit Coyote/Fox Season, what size(s) shot did you use?: \_\_\_\_\_

10. Where did you do *most* of your hunting during the 2008 Special Permit Coyote / Fox Season? (Check one)

- A. Private land  C. State Wildlife Mgt. Area  E. State Park or Forest  
 B. Federal land  D. Utility Right-of-Way  F. County/Municipal

The survey is now complete. Thank you for participating in this year's Coyote / Fox Hunter Survey. The NJ Division of Fish and Wildlife values your input and the information you provided. Kindly return the survey along with any comments or concerns you wish to share in the self-addressed envelope by **March 30, 2008**.