

NJ Division of Fish and Wildlife
2006-07 New Jersey Coyote and Fox Hunter Survey

Summary

There are an estimated 1,502 canine (coyote, gray fox and red fox) hunters in New Jersey (Burnett 2006). Coyote and fox hunting was authorized during the small game seasons proscribed by New Jersey's annual Game Code by properly licensed sportsmen (e.g., 30 September through 10 November 2006 – archery only; and, 11 November 2006 through 19 February 2007 – firearm or bow and arrow). 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 15 January to 19 February 2007 (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 [N.J.A.C. 7:25-5.19]. The daily bag limit was two coyote per day but no daily bag limit on fox. One thousand four hundred ninety-four permits were issued for the 31-day season.

A **2006-07 New Jersey Coyote/Fox Hunter Survey** was mailed to 650 holders of the Special Eastern Coyote and Fox Hunting Permit. The survey objective was to gather information regarding canine hunter demographics, prior hunting experience, current hunting activity and equipment used. The usable response rate was 44.2 percent. Ninety-eight percent of permit holders were New Jersey state residents. The mean age of all permit holders was 42.6 years. Prior to the 2006-07 hunting season, 47.9 percent of respondents indicated they had previously hunted coyotes or fox in New Jersey or in other states. Over half (55.6 percent) of survey respondents indicated specifically hunting for coyote or fox between 30 September 2006 and 19 February 2007 and 93.6 percent were active a mean 5.6 days during the special permit season (15 January-19 February). Survey respondents reported 148 unique coyote sightings and 190 instances of finding coyote sign (tracks, scat) in 19 New Jersey counties. Most of the estimated 774 hunters active during the special permit season: (1) hunted from ½ hour before sunrise until ½ hour after sunset (40.8 percent); (2) hunted on private land (49.0 percent); and (3) used a shotgun (89 percent) with #4 fine shot (42.2 percent). The estimated canine harvest during the special permit season was 15 coyotes, 20 gray fox and 232 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-11, New Jersey Wildlife Research and Management: Project III. Upland Wildlife and Furbearers**.

Methods

One thousand four hundred ninety-four special, coyote and fox hunting permits were issued for the 2007 special permit season via the new electronic license and permit system. Seven sportsmen purchased more than one permit. Demographic analyses were completed on all permit holders.

The 2006-07 New Jersey Coyote/Fox Hunter Survey (Appendix A), including a pre-addressed business reply envelope, was mailed to 650 permit recipients. Eight questionnaires (1.2 percent) were returned by the postal authorities as undeliverable and 642 were presumed delivered. Two hundred eighty-four responses were returned by 15 March 2007 for a usable response rate of 44.2 percent. Harvest data analyses are based on the 155 respondents (23.8 percent) that actively hunted for coyote and/or fox at some time during the 2006-07 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 2006, ranged from 9 to 82 years, with a mean age of 42.6 years (SD = 14.4). The age class distributions from the 2005-06, 2004-05 and 2003-04 surveys are presented for comparison.

Table 1. Age class distribution of 2007 NJ Special Coyote and Fox permit holders

Age Class	Number of hunters (2006-07)	Number of hunters (2005-06)	Estimated number of hunters (2004-05)	Estimated number of hunters (2003-04)
< 16	37	23	9	8
16 to 19	63	16	7	4
20 to 24	87	20	9	9
25 to 29	115	41	29	19
30 to 34	128	49	27	23
35 to 39	174	77	80	60
40 to 44	208	90	86	44
45 to 49	180	83	55	54
50 to 54	141	79	64	41
55 to 59	159	72	75	41
60 to 64	111	30	42	19
65+	84	39	55	19
Unknown	0	20	0	0
Total	1,487	639	537	341

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 (97.7 percent), and live in every New Jersey County. Most (35.0 percent) of the hunters live in South Jersey¹; 34.1 percent live in Central Jersey²; and, 31.0 percent live in North Jersey³. Non-resident hunters live in Pennsylvania (1.6 percent), New York (0.3 percent) Arkansas, Connecticut, Florida, Iowa, and Maryland (0.1 percent each, respectively). The residency distributions from the 2005-06, 2004-05 and 2003-04 surveys are presented for comparison.

Hunter Gender

Information on gender was not solicited during the 2006-07 survey, but 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 and 2006⁴. 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 and 63.6 percent, respectively. Prior to the 2006-07 hunting season, 55.6 percent of respondents indicated they had previously hunted coyotes or fox in New Jersey or in other states.

¹ Atlantic, Camden, Cape May, Cumberland, Gloucester and Salem counties.

² Burlington, Mercer, Middlesex, Monmouth and Ocean counties.

³ Bergen, Essex, Hudson, Hunterdon, Morris, Passaic, Somerset, Sussex, Union and Warren counties.

⁴ Prior experience was requested for coyote only (1999 and 2000), and coyote or fox (2002-2006).

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

County	Number of hunters (2006-07)	Number of hunters (2005-06)	Estimated number of hunters (2004-05)	Estimated number of hunters (2003-04)
Atlantic	118	24	15	17
Bergen	27	19	13	17
Burlington	149	40	46	25
Camden	65	19	27	17
Cape May	72	27	15	2
Cumberland	146	76	29	17
Essex	21	11	7	4
Gloucester	56	29	22	12
Hudson	10	6	0	4
Hunterdon	78	31	40	37
Mercer	45	22	24	12
Middlesex	45	29	24	19
Monmouth	81	26	18	19
Morris	42	40	35	12
Ocean	174	48	42	13
Passaic	41	26	24	21
Salem	50	26	9	12
Somerset	26	15	13	2
Sussex	122	44	46	25
Union	12	6	7	4
Warren	70	68	53	39
Arkansas	1	0	0	0
Connecticut	2	0	0	0
Florida	1	0	0	0
Iowa	1	0	0	0
Maryland	1	1	0	0
New York	4	1	2	0
Pennsylvania	24	20	18	12
Unknown	3	0	7	0
Total	1,487	639	537	341

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 2002-2006. 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 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 ⁵	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 ⁶	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
Total	7,250	14,500.00

Active Hunters

Over two-fifths (44.4 percent) of respondents did not hunt coyote/fox during the 2006-07 seasons. Primary reasons for non-participation included no time (48.4 percent), health (12.7 percent) and hunted other game (11.9 percent). Based on survey responses, 660 permit holders were inactive and 827 specifically hunting for coyote or fox between 30 September 2006 and 19 February 2007.

Based on survey responses, 137 hunters pursued coyote/fox from 30 September to 10 November 2006 (bow and arrow only), spent a mean 12.3 days afield and enjoyed 1,680 recreation-days while harvesting an estimated 2 coyotes, 2 gray fox and 5 red fox. Hunterdon, Sussex and Atlantic were the most popular counties hunted in during this period.

Based on survey responses, 290 hunters pursued coyote/fox from 11 November 2006 to 14 January 2007 (firearm or bow and arrow), spent a mean 9.1 days afield and enjoyed 2,650 recreation-days while harvesting an estimated 6 coyotes and 46 red fox. Burlington, Sussex and Hunterdon were the most popular counties hunted in during this period.

Based on survey responses, 774 hunters pursued coyote/fox from 15 January to 19 February 2007, spent a mean 5.6 days afield and enjoyed 4,304 recreation-days while harvesting an estimate 15 coyotes, 20 gray fox and 232 red fox. Sussex, Burlington, Hunterdon and Ocean were the most popular counties hunted in during this period.

For all periods combined, an estimated 827 hunters enjoyed 8,633 recreation-days of coyote/fox hunting during the 123-day season, and averaged 10.4 days afield per hunter while harvesting an estimated 22 coyotes, 21 gray fox and 283 red fox.

Active respondents reported 148 coyote sightings and 190 instances of finding coyote sign (tracks, scat) in 19 New Jersey counties during 2006-07 compared to 167 sightings and 207 signs reported in 19 during 2005-06. No reports of coyote evidence were received from Hudson or Union counties. Coyote presence as reported by survey respondents was highest in Ocean (51), Sussex (50), Burlington (34) and Cumberland (30) counties.

⁵ Permit valid for harvesting coyote only 1997-2000.

⁶ 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 2006-07. 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.

2007 Special Coyote/Fox Season (15 January to 19 February 2007)

The following information pertains only to the Special Permit Coyote/Fox season. Based on survey responses (n = 147), 774 sportsmen pursued coyote/fox in New Jersey during this period, spent a mean 5.6 days afield and enjoyed 4,304 recreation-days while harvesting 15 coyotes, 20 gray fox and 232 red fox.

Hunting Activity

Information on hunter activity by 12-hour period was solicited. An estimated 293 participants (35.4 percent) hunted at night only, 338 (40.8 percent) hunted during daylight only and 180 (21.8 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 726 (87.8 percent) hunted one, land ownership class, exclusively. An estimated 96 hunted two (11.6 percent) and 6 (0.7 percent) did not provide the requested information. Most hunters (56.5 percent) hunted on private land, and 49.0 percent hunted this land ownership class exclusively. Reasons for selection were not solicited.

Table 4. Hunter activity by land ownership 15 January to 19 February 2007 based on responses (n = 147) to the 2006-07 New Jersey Coyote/Fox Hunter Survey

Land owner	Estimated number of hunters	
	Total	Exclusive
Private	467	405
Federal (military bases, national wildlife refuge)	17	6
State Wildlife Management Area	225	174
Utility Right-of-way	17	11
State Park or Forest	135	101
County or Municipal	56	28
Unknown	6	6
Total	827	726

Equipment

Special season permit holders could hunt coyote and fox with bow and arrow (minimum 35-lb draw or peak weight), muzzleloading rifle (minimum .44 caliber) and shotgun (10 or 12 gauge only, #4 ≤ shot size ≤ "T") between the hours of ½ hour before sunrise to ½ hour after sunset. Authorized weapons were restricted to shotguns from ½ hour after sunset to ½ hour before sunrise. The use of dogs or bait was prohibited.

Based on survey responses, a shotgun was more often (85.0 percent) than a muzzleloading rifle (15.0 percent) or bow and arrow (2.0 percent) during the special season. Shotgun hunters favored #4 fine shot (42.2 percent) over "T" (20.4 percent) or #2 fine shot (15.6 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 2006-07 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 (1997-2006) is presented in Table 5. Three (60.0 percent) of the coyotes harvested in 2006 were taken after sunset. The 2006 coyote hunter success rate was 1.3 percent compared to 1.3 percent, 1.1 percent and 1.7 percent in 2006, 2005 and 2004, respectively.

Table 5. Summary of NJ hunter harvests during the special, permit coyote/fox seasons (1997-2007)

Year	Permit issuance	Estimated active hunters	Reported coyote harvest	Estimated gray fox harvest	Estimated red fox harvest	Estimated other harvest
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		20	232	Not solicited
Total	7,250		51	78	589	110 crows

Additional Information

Additional information on coyote and fox is provided in Attachment 2 of the Federal Aid in Wildlife Restoration Report W-68-R-11 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.

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Dear Fellow Hunter:

This is a copy of the 2006-07 Coyote/Fox Hunter Questionnaire. This survey contains questions about your coyote and fox hunting activities in New Jersey this past (2006-07) 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 2007 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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2006-07 New Jersey Coyote/Fox Hunter Survey Questionnaire

1. Prior to 2006-07, have you hunted coyotes or fox in the past? (Check one) YES NO
2. Between Sep 30 to Feb 19, 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 2006-07 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 2006-07 seasons:

	Township	County	Township	County	Township	County
Coyote seen						
Tracks/scat						

8. Please check the time period(s) you hunted during the 2007 **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 2007 Special Permit Coyote/Fox Season, what size(s) shot did you use?: _____

10. Where did you do *most* of your hunting during the 2007 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 15, 2007**.