

## **2005-06 NJ Firearm Hunter Harvest, Recreational and Economic Survey**

### **Summary**

Mail questionnaires were sent to 4,438 firearm hunters licensed during the 2004 calendar year (5.8 percent of all firearm license sales) requesting harvest, recreational and economic information for the 2005-06 hunting season. Survey results indicate that firearm hunters are aging and that retention of younger hunters is low. The mean age of licensed firearm hunters sampled is  $44.3 \pm 0.4$  years of age. Resident firearm hunters live in every county of the state, and 79.8 percent of non-resident firearm hunters reside in the neighboring states of Pennsylvania, New York and Delaware. Firearm license sales (72,604 in 2005) have declined to their lowest point since 1914. Nearly one-half of survey respondents actively pursued at least one of the 14 small game species open to hunting. An estimated 35,411 small game firearm hunters spent in excess of 11.1 million dollars (US, excluding license, permit and stamp fees), enjoyed 420,228 recreation-days and harvested an estimated 61,811 northern bobwhite, 6,481 crows, 27,546 chukar partridge, 711 ruffed grouse, 155,238 pheasants, 3,794 woodcock, 198 eastern coyotes, 79 gray fox, 18,140 gray squirrels, 30,431 rabbits and hares, 435 raccoons, 790 red fox and 4,031 woodchucks during the 2005-06 season.

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-8, New Jersey Wildlife Research and Management: Project III. Upland Wildlife and Furbearers**.

### **Remarks**

Harvest, recreational and economic data has been collected through mail surveys of 5,500 to 6,500 resident and non-resident, firearm license buyers. Since fiscal year 2000 (1999-2000), the survey has been conducted biennially. The mailing database for the 2005-06 Hunter Harvest Survey was compiled from a random sample of 2004 firearm hunting license buyers. Excluded from the potential sample are members of the New Jersey National Guard, Disabled Veterans, Youth Hunters and qualified farmer exempt from licensing requirements on their own property.

### **Methods**

A questionnaire designed to illicit demographic, hunter retention and participation, harvest, effort and economic data was mailed to 5.8 percent of the known firearm hunting population (4,438 purchasers of resident and non-resident firearm licenses). The survey database was randomly developed from license stub books supplied by the NJ Division of Fish and Wildlife's licensing section. A number between 1 and 10 was chosen at random and licenses were pulled from each series of license types beginning with the random number in the first book and proceeding with every 11-15<sup>th</sup> subsequent license (depending on license type, based on responses to the 2003-04 survey) until completed. The completed database was reviewed for errors before mailing labels were prepared. Questionnaires were color-coded by license type and packets mailed within six weeks of the end of the small game season (February 20, 2006). Return data were entered into a MS Access database and analyzed using MS Excel.

The total small game hunter population estimate was based on all survey respondents and is not additive in relation to the 14 game species for which harvest information was requested.

For northern bobwhite and ring-necked pheasants, respondents were asked whether they hunted for released, pen-reared birds (on Division stocked wildlife management areas, semi-wild properties,

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commercial preserves, or individually purchased), or for presumed wild birds on non-stocked public or private lands. All efforts expended toward hunting chukar partridge were presumed a result of released, pen-reared, regardless of location hunted. For American woodcock, respondents were asked whether they hunted in the North or South Zone. The estimated number of hunters, mean hunter harvest and harvest for these species was based on all respondents who pursued these species, regardless of location.

Survey analyses were combined where target species were similar, such as canines (eastern coyote, gray fox and red fox) and rabbits or hares, or where hunting occurred only at night (opossum or raccoon).

### Discussion

#### License Sampling

Five types of firearm licenses were offered for sale in New Jersey during 2004 (Resident Firearm [RF], All-Around Sportsmen [AA], Senior Resident Firearm [SF], Non-Resident Firearm [NF] and Non-Resident Two-day Small Game [NRSG]). License sales (2004) from all firearm licenses totaled 76,458. The object was to obtain information from approximately 2 percent of each license type, based on the 2003-04 NJ Firearm Hunter Harvest Survey response rate for each license type. A summary of the survey scheme is presented in Table 1.

*Table 1. Sampling scheme for the 2005-06 NJ Firearm Hunter Survey*

License Type	2004 response rate	Number sold (2004)	2006 Sample size needed (2%)	Number of surveys sent in 2006	2006 Sample size realized	Percent of license type sampled
RF	0.3091	50,188	1,004	3,152	602	1.2
AA	0.4198	15,437	309	741	191	1.2
SF	0.4552	6,538	131	287	99	1.5
NF	0.3652	3,330	67	191	40	1.2
NRSG	0.2836	965	19	67	11	1.1
Total	0.3435	76,458	1,529	4,438	943	1.2

Of the 4,438 survey forms mailed, 341 (7.7 percent) were returned as undeliverable compared to 627 (11.6 percent) of the 5,424 surveys mailed in 2004. If a given license was illegible, the next sequentially legible license was selected, which may explain the reduction in the number of undelivered surveys in 2006. Reasons for non-delivery in 2006 are presented in Table 2.

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Table 2. Reasons for non-delivery of 2005-06 NJ Firearm Hunter Survey

Reason for return	Number	Percent of total
Insufficient address	15	4.4
Attempted not known	25	7.3
No such number/street	54	15.8
Undeliverable as addressed, unable to forward	193	56.6
Forwarding time expired	44	12.9
Moved, no forwarding address	2	0.6
Other	5	1.5
Undetermined	3	0.9
Total	341	100.0

Non-delivery will be further improved through the computerization of the Division's license sale process (Point-of-Sale, POS), schedule for full implementation in 2007. POS will eliminate issues of handwriting legibility and insufficient address. The mailing database will be available more readily, thereby saving Division personnel time and effort, and would therefore likely reduce the number of surveys returned due to recipient mobility.

Of the 4,097 questionnaires delivered, 943 (23.0 percent) were completed and returned within the acceptable period. Note: three surveys were returned completely blank and two contained no usable information. Survey response rates from previous surveys were approximately 30 percent. The intentional omission of a pre-paid reply envelope as a cost-saving measure may explain the low survey response rate.

### Age

Survey recipient ages were calculated based on the date of birth provided on their 2004 hunting license. Ages ranged from 12 to 100 with a mean of  $44.3 \pm 0.4$  years ( $n = 4,413$ ), as of 01 January 2005. Table 3 illustrates recipient age classes. Similar information from the 1995-96 survey is provided for comparison.

Table 3. Age class of 2005-06 NJ Firearm Hunter Harvest Survey recipients

Age Class (years)	Frequency (2005)	Percent (2005)	Frequency (1995)	Percent (1995)
< 16	Not sampled	0.0	299	4.9
16 to 24	385	8.7	786	12.8
25 to 29	286	6.4	631	10.3
30 to 34	423	9.5	799	13.0
35 to 39	552	12.4	762	12.4
40 to 44	637	14.3	665	10.8
45 to 49	605	13.6	593	9.7
50 to 54	465	10.5	466	7.6
55 to 59	398	9.2	353	5.8
60 to 64	302	6.8	274	4.5
> 65	349	7.9	505	8.2
Unknown	25	0.6	0	0.0
Total	4,438	100.0	6,133	100.0

New Jersey's hunters are aging, but are also continuing to hunt longer in life. Recruitment of younger hunters (less than 34 years of age) and retention of existing hunters will present future challenges to the NJ Division of Fish and Wildlife.

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### Residence

Just over 94 percent of New Jersey firearm hunters are residents, and nearly all (99.9 percent) provided information on their county of residence. The information is provided in Table 4. Residency information from the 1995-96 survey is presented for comparison. The neighboring states of Pennsylvania, New York and Delaware accounted for 79.8 percent of non-resident hunters in 2004 (55.8, 13.9 and 10.1 percent each, respectively).

*Table 4. County of New Jersey resident firearm hunters (2004)*

County	Sample freq.	Sample pct.	Estimated number of hunters (2004)	Estimated number of hunters (1994)
Atlantic	290	6.9	5,007	5,966
Bergen	212	5.1	3,660	4,854
Burlington	366	8.8	6,319	6,472
Camden	210	5.0	3,625	4,045
Cape May	165	3.9	2,849	2,123
Cumberland	153	3.7	2,641	5,966
Essex	91	2.2	1,571	2,528
Gloucester	206	4.9	3,556	4,955
Hudson	59	1.4	1,019	1,820
Hunterdon	181	4.3	3,125	4,955
Mercer	199	4.8	3,436	2,528
Middlesex	302	7.2	5,214	5,966
Monmouth	231	5.5	3,988	7,180
Morris	275	6.6	4,748	5,865
Ocean	334	8.0	5,766	8,899
Passaic	138	3.3	2,382	5,157
Salem	102	2.4	1,761	4,146
Somerset	115	2.8	1,985	3,539
Sussex	287	6.9	4,995	6,573
Union	73	1.7	1,260	2,730
Warren	188	4.5	3,246	5,056
Unknown	3	0.1	52	0
Total	4,180	100.0	72,163	101,122

### Gender

Gender information was not requested in the current survey. Prior surveys have shown hunting to be a male dominated activity. Outreach programs such as Becoming an Outdoor Woman (BOW) may be encouraging participation by females. According to the 2004 survey, 95.2 percent of hunters are male and 4.8 percent are female. In comparison, males constituted 98.7 percent of hunters in the 2002 survey.

### Hunting Club Membership

Survey recipients were not asked if they belonged to a New Jersey hunting club in the current survey. An estimated 24,274 sportsmen belonged to a New Jersey hunting club in 2004 according to that year's survey.

### Firearm License Sales

New Jersey firearm license sales reached its historical apex in 1930 when 199,234 licenses were issued. Following the Depression-era low of 80,484 (1933), sales increased to its post-World War

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II peak of 190,418 (1971). Eligible National Guard personnel have been entitled to free licenses, permits and stamps since 1994. Disabled Veterans have been similarly entitled since 2000. Youth hunters in the 10 through 15-year old age class have received a firearm license upon completion of a hunter safety course since 2000. Youth licenses are valid through the calendar year in which the holder reaches the age of 16 years. The Jr./Sr. Firearm License was discontinued in 2000 and replaced by the Senior Firearm License (2000). A summary of New Jersey firearm hunting license sales for the last eleven years is provided in Table 5. Firearm license sales have declined 31.2 percent during the period 1995-2005, inclusive.

Survey recipients were asked if they had a 2005 New Jersey hunting license. An overwhelming majority of respondents (92.8 percent) indicated having a 2005 hunting license (n = 875). In addition, recipients were also asked if they possess a current (2006) hunting license. Eighty percent of respondents (n = 759) indicated having a current license. Over eighty percent (80.4) of respondents purchased licenses for both 2005 and 2006. Seven respondents (0.7 percent) who did not have a license in 2005 purchased a 2006 license.

Forty-six respondents (4.9 percent) did not purchase a firearm, hunting license for either 2005 or 2006. Asked to give the primary reason for not purchasing a hunting license, the most common answers were Health (23.9 percent); No Time (19.6 percent); and, Out-of-state (15.2 percent). Six respondents (13.0 percent) did not provide a reason for not purchasing a license. Only 4.3 percent of respondents (n = 2) cited increased license fees as their primary reason for non-purchase. These results are consistent with those of Duda (1998).

*Table 5. New Jersey hunting licenses sales by category and calendar year (1995 – 2005).*

Year	All Around Sportsman	Resident Firearm	Juvenile Firearm	Jr./Sr. Hunting	Total Resident Licenses	Non-Res. Small Game	Non-Resident Hunting	Total Firearm Licenses
1995	14,778	73,942	3,692	9,511	101,923	969	2,602	105,494
1996	15,064	70,185	3,734	9,206	98,189	876	2,715	101,780
1997	15,623	66,863	3,812	8,936	95,234	1,097	2,816	99,147
1998	17,174	63,897	4,110	9,083	94,264	1,114	3,098	98,476
1999	16,915	59,707	3,991	8,764	89,377	1,038	3,109	93,524
2000	17,123	60,085		6,727 <sup>1</sup>	83,935	968	3,251	87,186
2001	16,424	56,574		6,364	79,362	1,026	3,158	83,546
2002	15,663	54,106		6,319	76,088	939	3,207	80,234
2003	15,628	52,315		6,418	74,361	851	3,299	78,511
2004	15,437	50,188		6,538	72,163	965	3,330	76,458
2005	14,622	47,225		6,517	68,364	935	3,305	72,604

### Hunting Activity

Hunters possessing a 2005 or 2006 license (n = 896) were asked if they pursued any of the 14 small game species of interest. Based on survey results, there were an estimated 35,411 small game hunters active during the 2005-06 season, compared to an estimated 63,597 active small game hunters during the 1995-96 season. Declines were noted for deer hunters (25.2 percent), waterfowl

<sup>1</sup> Junior Firearm License discontinued. Figure represents sales of Senior (age 65+) Firearm Licenses only.

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hunters (31.5 percent) and small game hunters (46.6 percent) compared to the 1993-94 hunter harvest survey. A summary of activity by license type (2003) is presented in Table 6.

*Table 6. Estimated number of active, small game licensed New Jersey firearm hunters, by license type*

<b>Small game</b>					
<b>License Type</b>	<b>Sample (n)</b>	<b>Yes (n)</b>	<b>No (n)</b>	<b>Percent Yes</b>	<b>Percent No</b>
Resident Firearm	575	286	289	49.7%	50.3%
All-Around Sportsmen	187	96	91	51.3%	48.7%
Senior Resident Firearm	91	44	47	48.4%	51.6%
Non-Resident Firearm	36	10	26	27.8%	72.2%
Non-Resident 2-Day Small Game	7	1	6	14.3%	85.7%
	896	437	459	48.8%	51.2%
Estimated Active Hunters (2005)	72,604	35,411			

### Recreation days

Respondents who indicated pursuing small game were asked to provide the total number of days spent hunting the 14 species for which a hunting season was authorized during 2005-06. Statewide opening dates and season lengths varied by species. Woodcock had the shortest season (21 days in each zone [North and South], 41 days total) and woodchuck had the longest season (299 days). Sunday hunting is prohibited except on semi-wild properties and commercial shooting preserves for northern bobwhite, pheasants and chukar (124 and 243 days, respectively). The majority (62.2 percent) were active for 10 days or less. Only 14.6 percent of respondents were active for more than 20 days. Mean time afield was 11.9 days  $\pm$  1.1 per hunter. A summary small game hunting activity is presented in Table 7. Based on survey results, small game hunting generated 420,228 days of recreation for 35,411 sportsmen during the 2005-06 season. In comparison, small game hunting generated 763,164 recreation-days for an estimated 63,597 hunters whose mean time afield was 12.0 days during the 1995-96 season.

*Table 7. Recreation days realized by small game hunters in New Jersey during 2005-06.*

Number of days	Number of respondents	Percent response	Est. hunters	Cumulative hunters	Percent cumulative hunters
1 to 5	165	37.8%	13,370	13,370	37.8%
6 to 10	107	24.5%	8,670	22,041	62.2%
11 to 15	56	12.8%	4,538	26,578	75.1%
16 to 20	42	9.6%	3,403	29,982	84.7%
21 to 25	24	5.5%	1,945	31,926	90.2%
26 to 30	21	4.8%	1,702	33,628	95.0%
31+	22	5.0%	1,783	35,411	100.0%
Total	437		35,411		

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### 2005-06 Harvest

Active small game hunters were asked whether they specifically pursued each of the various small game species available, the number of days spent hunting, the primary county in which they hunted and the number of each species harvested. A summary of the estimated harvest is presented in Table 8. Based on survey results the 2005-06 harvest consisted of an estimated 61,811 northern bobwhite, 6,481 crows, 27,546 chukar, 711 ruffed grouse, 155,238 pheasants, 3,794 woodcock, 198 eastern coyote<sup>2</sup>, 79 gray fox, 18,140 gray squirrel, 30,431 rabbits and hares, 435 raccoon, 790 red fox and 4,031 woodchuck.

Table 8. Estimated 2005-06 harvest by species in New Jersey, based on survey results

Small Game Species	Season length (days)	Estimated number of hunters	Mean hunter harvest	95% CI (low)	95% CI (high)	Estimated harvest
Bobwhite quail, Division stocked	62	1,067	9.7	5.3	14.2	10,394
Bobwhite quail, semi-wild stocked	124	830	34.0	13.2	54.9	28,257
Bobwhite quail, commercial preserve	243	869	12.5	9.1	15.8	10,829
Bobwhite quail, hunter stocked	62-79	632	17.4	6.3	28.6	11,026
Bobwhite quail, wild (public land)	62-79	395	0.9	0.1	1.5	316
Bobwhite quail, wild (private land)	62-79	316	1.5	-0.3	3.3	474
<b>Bobwhite total*</b>	<b>79-244</b>	<b>3,280</b>	<b>18.8</b>	<b>11.2</b>	<b>26.4</b>	<b>61,811</b>
Crow	124	1,067	6.1	3.1	9.0	6,481
Chukar partridge	79-243	2,371	11.6	8.0	15.2	27,546
Ruffed grouse	56	1,225	0.6	0.1	1.0	711
Pheasant, Division stocked	79	6,560	7.4	6.7	8.1	48,294
Pheasant, semi-wild stocked	124	3,794	17.7	15.9	19.4	66,988
Pheasant, commercial preserve	243	2,411	11.9	10.4	13.4	28,732
Pheasant, hunter stocked	79	1,146	7.8	6.8	8.9	8,971
Pheasant, wild (public land)	79	474	0.6	0.5	0.6	277
Pheasant, wild (private land)	79	632	3.1	2.6	3.7	1,976
<b>Pheasant total*</b>	<b>79-243</b>	<b>12,251</b>	<b>12.7</b>	<b>11.0</b>	<b>14.3</b>	<b>155,238</b>
Woodcock, North Zone	21	790	3.1	2.6	3.6	2,450
Woodcock, South Zone	21	435	1.6	1.5	1.8	711
Woodcock, both Zones	41	79	8.0	7.3	8.7	632
<b>Woodcock total</b>	<b>41</b>	<b>1,304</b>	<b>2.9</b>	<b>2.5</b>	<b>3.3</b>	<b>3,794</b>
Eastern coyote	86	948	0.2	0.2	0.3	198
Gray fox	86	553	0.1	0.1	0.2	79
Red fox	86	751	1.1	0.9	1.2	790
<b>Canine total</b>	<b>86</b>	<b>1,502</b>	<b>0.7</b>	<b>0.6</b>	<b>0.8</b>	<b>1,067</b>
Gray squirrel	121	2,687	6.8	6.2	7.3	18,140
Opossum	123	0	0.0			0
Raccoon	123	237	1.8	1.8	1.9	435

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<b>Opossum and Raccoon total</b>	<b>123</b>	<b>237</b>	<b>1.8</b>	<b>1.8</b>	<b>1.9</b>	<b>435</b>
Rabbits / hares	79	5,454	5.6	4.6	6.6	30,431
Woodchuck	299	909	4.4	4.1	4.8	4,031
<b>Grand Total*</b>		<b>35,411</b>				<b>309,685</b>

\* Total figures for northern bobwhite and pheasant were for all respondents who pursued these two species regardless of location. Categorical breakdowns are not additive in relation to the total figure provided. The total, small game hunter population was based on all survey respondents and is not additive in relation to each separate species. **Results should be viewed cautiously considering the lower than desired survey sample size (1.2 percent realized vs. 2.0 percent of firearm license buyers).**

The NJ Division of Fish and Wildlife purchased 6,000 northern bobwhite for the 2005-06 hunting season (80 released pre-season at each of 10 Wildlife Management Areas [WMA]; 2,600 released in-season at each of 2 WMA). The higher than expected bobwhite harvest estimate on WMA may be a function of the survey (low sample size, hunter bias), natural reproduction of hold-over birds, or independent releases by individual hunters. Low survey sample size and hunter bias may also explain the higher than expected bobwhite harvest estimate on semi-wild properties, however the estimated bobwhite harvest on commercial preserves is comparable to harvest reports submitted to the Division (see Semi-wild and Commercial Shooting Preserves, below). A reduction was noted in the estimated harvest of presumed wild bobwhite compared to the 2004 survey estimate (3,264), and may be indicative of a continued population decline. The reduced season length and bag limit in the southern half of the state may also be a contributing factor.

The NJ Division of Fish and Wildlife's Rockport Pheasant Farm pen-reared an estimated 55,000 pheasants during calendar 2005. These birds were released on 23 Wildlife Management Areas statewide in order to provide recreational sport hunting opportunities for the 11,532 sportsmen that purchased a Pheasant and Quail Stamp in 2005. The 2005-06 WMA harvest rate (87.8 percent) is comparable with Carlson (1973) (82.8 percent). Low sample size and hunter bias may explain the higher than expected pheasant harvest estimate on semi-wild properties and the lower than expected estimate on commercial preserves (see Semi-wild and Commercial Shooting Preserves, below). The estimated harvest of wild pheasants in 2005-06 was slightly higher, but comparable, to the 2004 estimate (1,920).

Preliminary estimates by the U.S. Fish and Wildlife Service indicated there were  $1,400 \pm 30\%$  active woodcock hunters who expended  $4,900 \pm 32\%$  days afield and harvested  $2,400 \pm 40\%$  woodcock in New Jersey during 2005-06 (Kelley and Rau 2006). Additional information on the New Jersey's woodcock resource can be found in the Federal Aid in Wildlife Restoration Report **Job III-A. Migratory Upland Game Bird Surveys**. This job is included within **Grant Number W-68-R-10, New Jersey Wildlife Research and Management: Project III. Upland Wildlife and Furbearers**.

All successful coyote hunters were required by law to report their harvest to a Division Regional Law Enforcement Office within 24 hours. The reported hunter harvest was 91 (bow and arrow – 18; shotgun – 61; muzzleloading rifle – 12). Additional information on the New Jersey's coyote resource can be found in *Attachment 2 (2005-06 NJ Trapper Harvest, Recreational and Economic Survey)*, *Attachment 3 (2005-06 NJ Coyote and Fox Hunter Survey)* and in the Federal Aid in Wildlife Restoration Report **Job III-D. Occurrence and Distribution of the Eastern Coyote in New Jersey**. This job is included within **Grant Number W-68-R-10, New Jersey Wildlife Research and Management: Project III. Upland Wildlife and Furbearers**.



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Additional information on the New Jersey's opossum and raccoon resources can be found in *Attachment 2 (2005-06 NJ Trapper Harvest, Recreational and Economic Survey)*.

### Semi-wild and Commercial Shooting Preserves

A semi-wild shooting preserve is defined as an area of land, 50 acres or more, with the boundary clearly defined and posted along all boundary line at intervals of not more than 200 feet with signs containing the following wording: **Semi-Wild Shooting Preserve – Licensed Under N.J.S.A. 23:3-29** along with the name and address of the licensee. Two hundred forty-eight semi-wild shooting preserves totaling 55,974 acres were licensed for the 2003-04 hunting season. Stocking and harvest reports were received by the Division's Permit Section from 83.5 percent of current licensees (207 of 248). Stocking reports received from 163 properties (35,678 acres) totaled 50,628 pheasants, 11,548 chukar partridge and 4,529 northern bobwhite. Reported harvests totaled 29,569 pheasants (58.4 percent), 6,181 chukar partridge (53.5 percent) and 2,367 northern bobwhite (52.3 percent) during 2005-06.

A commercial shooting preserve is defined as an area of land, 50 acres or more, with the boundary clearly defined and posted along all boundary line at intervals of not more than 200 feet with signs containing the following wording: **Commercial Shooting Preserve – Licensed Under N.J.S.A. 23:3-29** along with the name, address and the license number. Forty-six commercial shooting preserves totaling 21,375 acres were licensed for the 2003-04 hunting season. Stocking and harvest reports were received by the Division's Permit Section from 80.4 percent of current licensees (37 of 46). Stocking reports received from 30 operations (14,824 acres) totaled 75,926 pheasants, 25,423 chukar partridge, 13,995 northern bobwhite, and 5,430 mallards. Reported harvests totaled 44,641 pheasants (58.8 percent), 16,080 chukar partridge (65.6 percent), 6,984 northern bobwhite (50.0 percent), and 2,817 mallards (51.9 percent).

### Hunter Expenditures

Active, small game respondents were asked to select which range of values best represented how much money they expended (excluding license, permit and stamp fees) while hunting small game in New Jersey during 2003-04. Over ninety percent (93.3) of respondents provided a value range for their expenditures. Based on survey results, small game hunting activities provided over \$6.9 million to the State's economy. A summary of sportsmen expenditures is presented in Table 9.

*Table 9. Estimated expenditures (US\$) by licensed New Jersey firearm hunters, 2005-06*

Range (US\$)	# Respondents	Percent Response	Average Hunter Expenditure (US\$)	Estimated Number of Hunters	Total Estimated Expenditure (US\$)
1-100	64	15.9%	50	5,638	281,879
101-200	64	15.9%	150	5,638	845,636
201-300	60	14.9%	250	5,285	1,321,306
301-400	48	11.9%	350	4,228	1,479,863
401-500	31	7.7%	450	2,731	1,228,815
500+	135	33.6%	500	11,892	5,945,877
Total	402	92.0%		35,411	11,103,375

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### 2005-06 Hunting season dates, bag limits and regulations

#### **Chukar partridge** (*Alectoris graeca*), **Northern bobwhite** (*Colinus virginianus*) and **Pheasant** (*Phasianus* spp.)

The statewide season for hunting chukar partridge, pheasants and northern bobwhite north of State Highway 33 was November 12-December 3 and December 12, 13, 15-31, 2005, and January 1-February 20, 2006 (79-days). The season for hunting northern bobwhite south of State Highway 33 was reduced by 17 days during 2005-06 (November 12-December 3 and December 12, 13, 15-31, 2005, and January 1-31, 2006; 62-days) in response to a suspected population decline. The hours for hunting these game birds were 8:00 AM to ½ hour after sunset on November 12 and thereafter from sunrise to ½ hour after sunset. The statewide daily bag limits were 7 chukar, 2 pheasants, 7 northern bobwhite north of Rt. 33 and four northern bobwhite south of Rt. 33. A Pheasant and Quail Stamp was required for hunters over the age of 16 years when pursuing bobwhite on the Greenwood Forest and Peaslee Wildlife Management Areas. There was no possession or season limit. A Pheasant and Quail Stamp was required for hunters over the age of 16 years when pursuing pheasants on designated Wildlife Management Areas (n = 23), the Delaware Water Gap National Recreation Area and Fort Dix Military Reservation. There was no possession or season bag limits for chukar, bobwhite or pheasant.

The season for hunting chukar partridge, northern bobwhite and pheasants on properly licensed semi-wild preserves was November 12, 2005 to March 15, 2006 (124-days). The season for hunting chukar partridge, northern bobwhite and pheasants on properly licensed commercial shooting preserves was September 1, 2005 to May 1, 2006 (244-days). Sportsmen pursuing these species on these properly licensed properties were exempt from daily bag limit restriction.

#### **Crow** (*Corvus* spp.)

The season for hunting crow was August 8, 2005 through March 18, 2006 (Mondays, Thursdays, Fridays and Saturdays), except closed during the six-day firearm deer season on December 5-10, 2005 (124-days). The hours for hunting crows were sunrise to ½ hour after sunset, except on November 12, 2005 when the hours were 8:00 AM to ½ hour after sunset. There were no daily, possession or season bag limits.

#### **Ruffed grouse** (*Bonasa umbellus*)

The season for hunting ruffed grouse was reduced by 33 days (October 20–December 3, and December 12, 13 and 15–31, 2005; 56 days) in response to a suspected population decline, and at the request of several Ruffed Grouse Society state chapters. The hours for hunting ruffed grouse were sunrise to ½ hour after sunset except on November 12, 2005 when legal hunting hours were 8:00 A.M. to ½ hour after sunset. The daily bag limit was reduced from three (3) to two (2) grouse and there was no possession or season bag limit.

#### **American woodcock** (*Scolopax minor*)

New Jersey is the only U.S. state with a North and South Zone for woodcock hunting. The woodcock hunting season was October 20 to November 12, 2005 in the North Zone and November 12-26 and December 23-31, 2005 in the South Zone (21-days in each zone, 41-days overall). The hours for hunting woodcock were sunrise to sunset except on November 12, 2005 when legal hunting hours were 8:00 AM to sunset. The daily bag limit was three (3) birds, with a possession limit of six (6) birds. There was no season bag limit. A Harvest Information Program (HIP) number was required to hunt woodcock.

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### **Eastern coyote** (*Canis latrans*), **Gray fox** (*Urocyon cinereoargenteus*) and **Red fox** (*Vulpes vulpes*)

The season for hunting eastern coyote, gray fox and red fox was October 1–November 11, 2005 (archery only, 36-days) November 12, 2005–February 20, 2006 (firearm or archery, 86-days). The use of dogs for coyote and fox hunting was prohibited during the archery only portion as well as during the six-day firearm deer season (December 5-10, 2005) or on the Wednesday, shotgun permit season day, immediately following the six-day firearm deer season (December 14, 2005). Properly licensed persons hunting deer during the six-day firearm, muzzleloader rifle permit or shotgun permit deer seasons may kill fox or coyote, if the fox or coyote is encountered before said person has taken the season bag limit of deer. The hours for hunting coyote and fox were 8:00 A.M. to ½ hour after sunset on the opening day of the firearm or bow and arrow coyote season and on other days from ½ hour before sunrise to ½ hour after sunset. The coyote daily bag limit was two coyote. There was no possession or season limit for coyote. There was no daily, possession or season limit for gray fox or red fox. Successful hunters were required to report their harvest to a Division regional law enforcement office within 24 hours of harvest.

The special eastern coyote, gray fox and red fox hunting season was extended by two weeks (January 16-February 20, 2006; 31-days) at the request of sportsmen. During the period of special eastern coyote, red fox and gray fox hunting season, exclusively, hunting methods were restricted to calling and stand hunting. No person could stalk or attempt to approach a coyote, red fox or gray fox for the purpose of taking or attempting to take the animal. Possession of a predator call was required while hunting. The use of dogs or bait was prohibited. Portable lights were permitted. Fluorescent, hunters orange was not required on outer clothing for coyote hunting during the special season. A special eastern coyote, red fox and gray fox hunting season permit was required from the Division. During the special season, exclusively, coyotes could be hunted with bow and arrow, shotgun and single barrel muzzleloader rifles between ½ hour before sunrise to ½ hour after sunset. Compound bows had to have a minimum peak weight of 35 pounds. All other bows required a minimum draw pull weight of 35 pounds. Shotguns could be no smaller than 12 gauge nor larger than 10 gauge. No shot size larger than “T” (0.20” in diameter) or smaller than #4 fine shot could be used for coyote hunting with shotgun. Muzzleloader rifles could be no less than .44 caliber. Smoothbore muzzleloaders had to be single barreled. Between ½ hour after sunset and ½ hour before sunrise, only 10 or 12 gauge shotguns and “T”, #2 or #4 fine shot could be used.

### **Eastern gray squirrel** (*Sciurus carolinensis*)

The season for hunting gray squirrel was September 24–December 3, and December 12, 13, 15–31, 2005, and January 1–February 20, 2006 (121-days). Hunters holding a valid rifle permit in addition to a current firearm hunting license could pursue gray squirrels between September 24–November 11, 2005 and January 7–February 20, 2006 using a .36 caliber or smaller muzzleloading rifle (loaded with a single projectile) within designated portions of the state. The hours for hunting gray squirrel were sunrise to ½ hour after sunset except on November 12, 2005 when legal hunting hours were 8:00 A.M. to ½ hour after sunset. The daily bag limit was five (5) squirrels and there was no possession or season bag limit.

### **Virginia opossum** (*Didelphis virginiana*) and **Raccoon** (*Procyon lotor*)

The season for hunting Virginia opossum and raccoon was October 1, 2005 to March 1, 2006 except during December 5-10 and December 14, 2005 (123-days). The hours for hunting were one hour

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after sunset (beginning October 1) to one hour before sunrise. There was no daily, possession or season bag limits for either species.

**Eastern cottontail** (*Sylvilagus floridanus*), **Blacktail jackrabbit** (*Lepus californicus*), **Whitetail jackrabbit** (*L. townsendi*) and **European hare** (*L. europeus*)

The season for hunting cottontail rabbit, blacktail jackrabbit, whitetail jackrabbit and European hare was November 12-December 3 and December 12, 13, 15-31, 2005, and January 1-February 20, 2006 (79-days). The hours for hunting these game animals were 8:00 AM to ½ hour after sunset on November 12 and thereafter from sunrise to ½ hour after sunset. The daily bag limit was one jackrabbit or hare and four cottontail rabbits. There was no possession or season bag limits for any of these species.

New Jersey's native species, other than eastern cottontail, are New England cottontail (*S. transitionalis*), and perhaps the marsh rabbit (*S. palustris*) and the snowshoe hare (*L. americanus*). All other species have been introduced at some point in the past either by the Division or by hunt clubs. The last known record of Division stocking was during 1962-63 when 177 snowshoe hares were obtained from Maine and released in Sussex County. Jackrabbits and hares may continue to persist in New Jersey, but are probably rare.

**Woodchuck** (*Marmota monax*)

The hunting season for woodchucks with a rifle (including a muzzleloading rifle) was March 1-September 28, 2005. Center-fire rifles larger than .25 caliber were restricted to hollow point, soft point or expanding lead core bullets no exceeding 100 grains in weight. Rim-fire rifles were restricted to .25 caliber or less with hollow point or soft point projectiles. Properly licensed hunters could also take woodchuck with shotgun or long bow and arrow during the regular woodchuck rifle season and during the upland game season September 24-December 3, and December 12, 13, 15-31, 2005, and January 1-February 20, 2006 (total 299-days). A valid rifle permit was required, if applicable, in addition to a firearm license while hunting woodchucks. Rifle hunting is prohibited on all state Wildlife Management Areas. The hours for hunting woodchucks was sunrise to ½ hour after sunset, except on November 12, 2005 when legal hunting hours were 8:00 A.M. to ½ hour after sunset. There was no daily, possession or season limit for woodchucks.

# NJ Division of Fish and Wildlife

## 2005-06 FIREARM HUNTER SURVEY

Dear Fellow Hunter:

This is a copy of the 2005-06 season Firearm Hunter Survey. This survey contains questions about your hunting activities in New Jersey this past (2005-06) season. Kindly take a moment now to complete this survey and return it in the self-addressed envelope provided. Thank you in advance for providing the postage needed. The Division recognizes this inconvenience, but this small act will save us both time and money best directed elsewhere to your benefit.

The information you provide is anonymous. 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 pheasants while you shot only one, you would report 1 pheasant.
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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### 2005-06 New Jersey Firearm Hunter Harvest Survey Form ADM-AA2004

1. If you did not purchase a NJ Firearm Hunting license in either 2005 or 2006, check here
2. If you checked the box in Question #1, why did you not purchase a hunting license?
- A. I'm a farmer hunting my own property     B. Other (reason): \_\_\_\_\_

If you checked "B" in Question #2, STOP HERE and return the survey, otherwise please continue.

3. Please indicate which years you purchased a NJ Firearm Hunting license (check one):
- Both 2005 and 2006                       2005 only                       2006 only

4. In 2005-06, did you hunt small game in NJ? (check one):                       Yes                       No

If you checked "No" to Question #4, GOTO Question #33, otherwise please continue to Question #5.

5. How many *total* days did you spend hunting small game in NJ? \_\_\_\_\_

For Questions #5-29, please provide the information requested for each species you harvested on the following table. There are several parts to each question, so please take your time completing this portion of the survey.

Upland Small Game Species	A. Hunted specifically for species? (Yes/No)	B. Number of days hunted	D. Number of animals harvested	E. Primary county hunted
6. Bobwhite quail – stocked on <i>Public</i> lands by DFW (e.g., Greenwood or Peaslee WMA only)				
7. Bobwhite quail – stocked (on licensed, SEMI-WILD property only)				
8. Bobwhite quail - stocked (on licensed COMMERCIAL shooting preserve only)				
9. Bobwhite quail – stocked privately by hunter (purchased and released by you)				
10. Bobwhite quail - wild birds on non-stocked <i>Public</i> lands (e.g., not stocked by Div. Fish & Wildlife)				
11. Bobwhite quail, wild birds on PRIVATE lands only (e.g., not stocked by landowner or by you)				
12. Chukar partridge				
13. Crow				
14. Grouse				
15. Pheasant – stocked on Public lands by DFW (e.g., any of the 23 WMA where Stamp required)				
16. Pheasant – stocked (on licensed, SEMI-WILD property only)				
17. Pheasant - stocked (on licensed COMMERCIAL shooting preserve only)				
18. Pheasant – stocked privately by hunter (purchased and released by you)				
19. Pheasant - wild birds on non-stocked <i>Public</i> lands only (e.g., not stocked by Div. Fish & Wildlife)				
20. Pheasant - wild birds on PRIVATE lands only (e.g., not stocked by landowner or by you)				
21. Woodcock (North Zone <i>only</i> )				
22. Woodcock (South Zone <i>only</i> )				





## **2005-06 NJ Firearm Hunter Harvest, Recreational and Economic Survey**

The survey is now complete. Thank you for participating in this year's Firearm Hunter Harvest Survey. Please return the survey in the self-addressed envelope provided, or mail to *NJ Division of Fish and Wildlife, Northern Region Office, 26 Rt. 173 West, Hampton, NJ 08827, Attn: Joseph Garris*. Survey results will be posted during Summer 2006 on the Division's website (<http://www.njfishandwildlife.com>). The NJ Division of Fish and Wildlife values your input and the information you provided.