

NEW MEXICO BAND-TAILED PIGEON HARVEST SUMMARY—2004

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Abstract. Responses from post-season harvest survey questionnaires returned by Band-tailed Pigeon, *Patagioenas fasciata*, hunters at the close of the 2004 hunting season were summarized and used to project season harvest. Two hundred and twenty-two permits were issued. From the responses, it is projected that 183 pigeons were bagged by 106 hunters resulting in an overall mean harvest of 1.4 pigeons per hunter. Hunters in the field saw a reported total of 1,483 pigeons.

Two populations of Band-tailed Pigeons reside in North America north of Mexico. Each population represents a subspecies (race) of the superspecies *Patagioenas fasciata*. One subspecies, *P. f. monilis*, inhabits the coniferous forest zone along the Pacific Coast from Alaska to Baja California while an interior subspecies, *P. f. fasciata*, inhabits forests of the southern Rocky Mountains centered around the Four-Corner states of Arizona, Utah, Colorado, and New Mexico (Jarvis and Passmore 1992).

New Mexico first began hunting Band-tailed Pigeons in 1968. At that time, a permit system was developed to provide a roster of all pigeon hunters. A post-season card survey was used to gather information used to estimate harvest. In addition, banding efforts and sightings accounts were initiated to further contribute to the understanding of the biology of this species.

Beginning in 1975, Band-tailed Pigeons were included in the New Mexico Random Mail Card Small Game Harvest Survey. For the period 1975-1978, pigeon harvest was monitored by both surveys. The Band-tailed Pigeon program was discontinued after the 1978 season. Harvest of these pigeons continues to be monitored by the Small Game Harvest Survey.

In 1992, concerns over a possible decline in the Pacific Coast population prompted the U. S. Fish and Wildlife Service (USFWS) to focus attention on the status of the interior population. As a result, a directive was issued in July 1992 requiring New Mexico to re-implement the permit system for hunting Band-tailed Pigeons. The purpose of this directive was to provide a method to more closely monitor harvest of the Four-Corners population. This directive has remained extant through the 2004 season. Furthermore, as part of the Migratory Harvest Information Program (MHIP), if a state desires to hunt Band-tailed Pigeons, it must retain the state permit system and provide the USFWS names of hunters for use in their survey. The federal survey will assist the states two surveys for this species. New Mexico implemented MHIP in 1998; therefore, the state permit system remains in place for the 2004 season.

In February 1993, biologists from Arizona, Utah, Colorado, and New Mexico, representing state conservation agencies from both the Pacific and Central Flyways, and the USFWS, met in Monticello, Utah to ascertain whether specific management guidelines should be developed to manage the interior population. This group decided it was first necessary to gather current information regarding the status of this population before further actions should be taken. The Pacific and Central Flyway Councils officially recognized the formation of a Four-Corner Band-tailed Pigeon sub-committee at their spring meetings. A revised management plan was developed and approved by both Flyway Councils in 2001 (Sanders 2001).

METHODS

New Mexico utilizes a split season format for hunting Band-tailed Pigeons. A 'Regular' season is scheduled early in September while a later 'Southwest' season is scheduled for October. Split seasons are warranted based upon documentation indicating that pigeons breeding in the southwest quadrant of New Mexico remain in various stages of nesting behavior throughout early September. For the purposes of this report, references to hunting seasons will be identified as Regular, Southwest, or 2004 (Regular and Southwest combined). Season parameters are described below.

All individuals who desired to hunt Band-tailed Pigeons during the 2004 season were required to apply for a special permit available through any Department office. Each permit was good for both seasons. The permits were at no charge and everyone who applied received one. This procedure provided the Department with a roster of all pigeon hunters with which information could be gathered on harvest and hunter effort. This information was provided to the USFWS for use in HIP harvest surveys.

Each applicant was mailed a harvest survey questionnaire. A separate questionnaire was provided for each season along with a pre-addressed return envelope included in the permit package. Hunters were instructed to complete the questionnaire for each season, whether or not they hunted, and forward the surveys to the Department's post office box in Santa Fe at the close of the 2004 season. Those not returning the survey form within three weeks from the close of the season were mailed a second survey form.

The questionnaires requested information on various aspects of the hunter's activities in the field. This information included numbers of pigeons bagged and seen, county, locality (as specific as possible), and date(s) hunted. In addition, space was provided for comments.

Data gathered from the questionnaires were summarized and evaluated by separate seasons. Estimates of total harvest and total number of hunters were calculated by applying corresponding ratios of parameters (dates hunted, numbers bagged, etc.) from those who responded to those who did not respond. A statewide projection of harvest was made by summing the two season's projections. Biases due to memory error, prestige, and non-response were not accounted for in this analysis. This was the second year a contractor (Disc Info) was used to gather the survey data.

RESULTS

A total of 222 permits were issued for the 2004 Band-tailed Pigeon season. Sixty-five percent (n=145) of the permittees responded to the harvest survey by returning the Regular, Southwest or both surveys. Of these respondents, 51.7% (n=75) indicated they hunted. One hundred and thirty hunters responded to the Regular season survey with 39.2% (n=51) indicated they hunted. One hundred and thirty-two responded to the Southwest season survey with 18.2% (n=24) indicated they hunted. The following are summaries of these responses separated according to season.

Regular Season:

The Regular season was scheduled from September 1 through September 20, 2004. All areas north of U.S. Highway 60 as well as all areas east of Interstate 25 were open to hunting pigeons during this period. The daily bag and possession limits were 5 and 10 respectively.

Of the 69 respondents who hunted, 75.4% (n=52) indicated they hunted the Regular season. Only 26.9% (n=14) of those who hunted were successful. Seventy-seven pigeons were reported bagged resulting in a mean bag of 1.45 pigeons per hunter. Applying these ratios to the number of non-respondents, it was estimated that 87 hunters bagged 131 pigeons (Table I).

Table I. Reported and estimated success of hunters; Regular season.

Reported			Projected	
Number bagged	Number of Hunters	Total Bagged	Number of Hunters	Total Bagged
0	37	0	63	0
1	2	2	3	3
2	3	6	5	10
3	2	6	3	10
4	1	4	2	7
5	2	10	3	17
6	1	6	2	10
7	0	0	0	0
8	1	8	2	14
9	0	0	0	0
10	1	10	2	17
11	0	0	0	0
12	0	0	0	0
>14	1	25	2	43
TOTAL	51	77	87	131

Hunters were asked to respond on their hunting activity for each day they hunted. From these data, the Department was able to determine how many days each hunter hunted. Table II presents a summary of this hunter activity.

Table II. Band-tailed Pigeon hunter activity; Regular season.

Number of days Hunted	Number of Hunters	Number Bagged
0 ¹	0	0
1	30	17
2	10	21
3	6	6
4	2	0
5	3	33
>5	0	0
TOTAL	51	77

¹ Hunters did not indicate number of dates hunted.

A total of 1,232 Band-tailed Pigeons were reported seen by hunters in the field. Rio Arriba County recorded the highest number of pigeons seen with 536 followed by San Miguel County with 215. Rio Arriba County reported the highest bag at 25 followed by San Miguel and Sandoval counties at 18 birds each (Table III).

Table III. Reported number of pigeons bagged and seen by county; Regular season.

County	Number Seen	Number Bagged
Not reported	0	0
Bernalillo	40	0
Catron	0	0
Cibola	65	10
Colfax	14	1
Lincoln	86	2
Los Alamos	0	0
Mora	0	0
Otero	61	3
Rio Arriba	536	25
San Miguel	215	18
Sandoval	214	18
Santa Fe	0	0
Taos	0	0
Torrance	40	0
Valencia	1	0
Total	1,232	77

Southwest Season:

The Southwest season was scheduled from October 1 through October 20, 2004. All areas south of U.S. Highway 60 and west of Interstate 25 were open to hunting pigeons during this period. The daily bag and possession limits were 5 and 10 respectively.

Of the 69 respondents who indicated they hunted, 34.8% (n=24) hunted the Southwest season. Only 29.2% (n=7) of those who hunted were successful. Thirty-one pigeons were reported bagged resulting in a mean bag of 1.29 pigeons per hunter. From these figures, it is estimated that 40 hunters bagged 52 pigeons (Table IV).

Table IV. Reported and estimated success of hunters; Southwest season.

Number bagged	Reported		Projected	
	Number of Hunters	Total Bagged	Number of Hunters	Total Bagged
0	17	0	29	0
1	0	0	0	0
2	1	2	2	3
3	2	6	3	10
4	1	4	2	7
5	2	10	3	17
6	0	0	0	0
7	0	0	0	0
8	0	0	0	0
9	1	9	2	15
10	0	0	0	0
11	0	0	0	0
12	0	0	0	0
13	0	0	0	0
14	0	0	0	0
>14	0	0	0	0
TOTAL	24	31	40	52

Information gathered from the Southwest season questionnaire regarding hunter activity in the field is presented in Table V.

Table V. Band-tailed Pigeon hunter activity; Southwest season.

Number of days Hunted	Number of Hunters	Number Bagged
0 ¹	0	0
1	11	17
2	5	11
3	5	3
4	1	0
5	2	0
>5	0	0
TOTAL	24	31

¹ Hunters did not indicate number of dates hunted.

There were 251 pigeons reported seen by hunters in the field. Grant County recorded the highest number of pigeons seen with 104. Socorro Count recorded the highest bag at 10 (Table VI).

Table VI. Reported number of pigeons bagged and seen by county; Southwest season.

County	Number Seen	Number Bagged
Catron	33	8
Dona Ana	4	4
Grant	104	9
Hidalgo	0	0
Sierra	50	0
Socorro	60	10
Total	251	31

Statewide Total

Based upon the hunter responses and the response rate to the survey, a statewide projected harvest of 108 pigeons were bagged by 75 hunters resulting in an overall mean bag of 1.44 pigeons per hunter.

Hunters saw a reported total of 1,483 pigeons. Six respondents indicated they hunted both seasons.

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Based upon the hunter responses 91 hunter days were spent afield during the Regular season with 77 birds harvested for an average of 0.85 birds/hunt day. Fifty hunter days were spent afield during the Southwest season with 31 birds harvested for an average of 0.62 birds/hunt day. For the combined seasons 141 hunter days were spent afield with 108 birds harvested resulting in an average of 0.77 birds/day. Table VII presents a summary of this hunter activity.

Table VII. Reported bag/day; Regular, Southwest & Combined Seasons

Regular		Reported	
Number of Days Hunted	Number of Hunters	Total Bagged	Average Bag Per Day
1	30	17	0.57
2	10	21	1.05
3	6	6	0.33
4	2	0	0.00
5	3	33	2.20
6	0	0	0.00
Total	51	77	0.85

Southwest		Reported	
Number of Days Hunted	Number of Hunters	Total Bagged	Average Bag Per Day
1	11	17	1.55
2	5	11	1.10
3	5	3	0.20
4	1	16	0.00
5	2	0	0.00
6	0	0	0.00
Total	24	31	0.62

Combined		Reported	
Number of Days Hunted	Number of Hunters	Total Bagged	Average Bag Per Day
1	41	34	0.83
2	15	32	1.07
3	11	9	0.27
4	3	0	0.00
5	5	33	1.32

	6	0	0	0.00
Total	75	108	0.77	

DISCUSSION

The 2004 projected harvest of Band-tailed Pigeons in New Mexico represents the third lowest harvest since hunting for this species began in 1968. The 2004 reported mean bag of 1.4 was the below the 22 year long-term average mean bag (2.3) and below the 1.7 mean bag average since 1992. The projected harvest has ranged from a high of 5,010 in 1979 to the low of 128 in 1998. During the period when both surveys were used (1975-1978 and 1992--2002), the projected harvest estimated by the Small Game Survey was consistently higher than that of the Band-tailed Pigeon Survey (Table VIII).

As of the date of this report, harvest projections from the Small Game Survey for 2004 were not available. Because of the different sampling strategies and analysis methodologies employed by each of these surveys, it is anticipated that direct comparisons between the harvest figures will be difficult. However, projections from each survey indicate low levels of harvest over the past few seasons.

The 2004 projected harvest from the post-season questionnaires represents a 28.5% decrease in harvest compared to the previous season. Compared to the previous year's Regular season, there was a 34% decrease in the reported number of birds harvested and a 59.0 % decrease in the number of reported birds sighted. The Southwest season had no change in the reported harvest and an 86.6% decrease in the number of reported birds sighted. During 2004, New Mexico again experienced another year of continued drought during the winter through summer seasons. This has resulted in less suitable habitat across most of the state.

This is the second year harvest per hunter day has been calculated for New Mexico's band-tailed pigeon harvest. For the combined seasons hunters averaged 0.77 birds per day. This is one of the parameters outlined in the Pacific and Central Flyways Four Corners population of Band-tailed Management Plan that will be used to evaluate annual harvest.

It appears that additional efforts should be initiated to more aggressively assess and monitor the status of the Four-corners population of Band-tailed Pigeons. These efforts should include developing the means to better determine the status of this population, its habitat requirements, and mortality factors affecting it. The revised flyway management plan addresses these issues but the matter of funding needs to be resolved. Furthermore, the implementation of MHIP in the other three four-corner states has caused problems in estimating the number of band-tailed pigeon hunters. Thus, harvest estimates aren't as accurate as anticipated among participating states. Requiring the band-tailed pigeon permit has prevented this problem in New Mexico.

Table VIII. Projected Numbers of B-t Pigeon Hunters, Harvest and Mean Bag Per Hunter; 1968-2004

Year	Band-tailed Pigeon Survey ¹			Small Game Survey ²		
	Projected Hunters	Projected Harvest	Mean Bag	Projected Hunters	Projected Harvest	Mean Bag
1968	278	500	1.8			
1969	218	719	3.3			
1970	440	859	2.0			
1971	559	2,027	3.6			
1972	692	2,981	4.3			
1973	828	1,548	1.9			
1974	690	1,501	2.2			
1975	826	1,601	1.9	708	1,983	2.8
1976	449	1,496	3.3	678	2,019	3.0
1977	515	2,455	4.8	716	2,606	3.6
1978	563	1,800	3.2	736	2,156	2.9
1979				965	5,010	5.2
1980				673	2,523	3.7
1981				1,127	2,281	3.7
1982				616	2,432	3.9
1983				678	2,193	3.2
1984				619	3,601	5.8
1985				315	643	2.0
1986				282	741	2.6
1987				175	717	4.1
1988				385	1,533	4.0
1989				408	2,285	5.6
1990				513	1,407	2.7
1991				216	787	3.6
1992	195	261	1.3	103	401	3.9
1993	138	189	1.4	302	519	1.7
1994	134	247	1.8	274	311	1.1
1995	155	274	1.8	331	381	1.1
1996	183	326	1.8	272	481	1.8
1997	144	317	2.2	326	555	1.7
1998	158	128	0.8	132	367	2.8
1999	161	283	1.7	302	441	1.5
2000	159	249	1.6	283	509	1.8
2001	131	149	1.1	181	160	0.9
2002	147	386	2.6	279	689	2.5
2003	131	256	1.9	-	-	-
2004	106	183	1.4	-	-	-

- Data not yet available (Small Game Survey)

¹ Band-tailed Pigeon Population, W-104 & W-139 Fed. Aid Progress Reports 1968-1978 and 1992-2004

² Random Mail Survey of Small Game Harvest, W-104 Fed. Aid Progress Reports 1975-2002

Literature Cited

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