



ILLINOIS

UNIVERSITY OF ILLINOIS AT URBANA-CHAMPAIGN

PRODUCTION NOTE

University of Illinois at
Urbana-Champaign Library
Large-scale Digitization Project, 2007.

18.4
R6P
10.23

NAT. HIST. SUR.

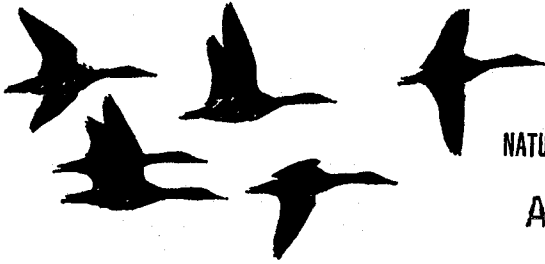
Illinois Department of Conservation
Springfield

Division of Wildlife Resources

MIGRATORY BIRD SECTION

PERIODIC REPORT NO. 23

June 21, 1978



NATURAL HISTORY SURVEY

AUG 31 1978

LIBRARY

CANADA GOOSE HARVEST AND HUNTER ACTIVITY IN THE
SOUTHERN ILLINOIS QUOTA ZONE DURING THE 1977 SEASON

Fred Roetker, Waterfowl Staff Assistant
Norma Jean Foltz, Technical Assistant
William L. Anderson, Staff Waterfowl Biologist

The Library of the
AUG 29 1978
University of Illinois
at Urbana-Champaign

Abstract: During the 1977 goose season in the southern Illinois quota zone, hunters made 57,472 trips to harvest 30,747 Canada geese for a success rate of 0.53. The mean number of hunters per day was 1,306 during the 44-day season. Public hunting areas accounted for 21 percent of the total hunting effort, 12 percent of the harvest, and had a success rate of .30. Alexander county recorded 34 percent of the total hunting effort, 36 percent of the harvest, and had a success rate of 0.56. Union county had 20 percent of the hunter-trips, 13 percent of the harvest, and a success of 0.35. Williamson/Jackson counties took 46 percent of the trips and accounted for 51 percent of the harvest; success in these counties was 0.59. The population in the quota zone peaked on December 12th when 405,000 geese were recorded, which exceeds the previous record set in 1976. Age ratios among harvested geese were the lowest obtained in several years, with 1.7 immatures per adult at Horseshoe Lake and 1.3 immatures per adult at Union County.

INTRODUCTION

Illinois' system of a quota zone and daily registration of hunters and the kill offers more precision and flexibility for managing the harvest of Canada geese than any known method. This system has been in effect since 1960. The counties of Alexander, Union, Williamson, and Jackson in southwestern Illinois comprise, for purposes of managing Canada geese, the southern Illinois quota zone.

The purpose of this report is to document hunting pressure, hunting success, harvest, and population status of Canada geese in the quota zone during the 1977 season. Hunting began on November 21 and ended 44 days later on January 3rd. The return to a season lasting more than 35 days was welcomed after comparatively short seasons in 1975 and 1976.

Numerous people are to be commended for their efforts in the management of the 1977 segment of this project. Union County and Horseshoe Lake Site Superintendent Dennis Thornburg provided assistance throughout the season. Conservation Police Officers Wayne Wilson, Peter Clarke, James Synowiec, Robert Van Hamme, and Harley Faughn assisted in the distribution of free landowner permits. Maxine Powless in the Union County office contributed many long hours issuing free permits and tabulating the harvest on free areas throughout the State. Ross Adams and staff at the Crab Orchard NWR contributed information regarding age ratios, landowner permits, and harvest information from their public hunting areas. The Canada Goose Harvest and Population Study in Illinois is a Federal Aid Project, Number W-43-R(S1)-26.

METHODS

The system of harvest registration in the quota zone remained unchanged from the 1976 season. Distribution of both the paid and free quota zone permits and registration materials was handled smoothly in the Union County field office. As in past years, all clubs submitted daily register sheets twice a week. Hunter-trips, harvest, and success were derived from these daily reports.

As in 1975 and 1976, an "electronic secretary" was installed in the telephone system at the Union County office. Each day that a harvest count was made the automatic recording was updated to give the latest harvest tabulation and season information. Interested goose hunters and club operators could call the number to obtain the most recent information on the progress of the 1977 goose season. This device greatly reduced the lag time in reporting the "state of the harvest" to the public.

Population data for Canada geese in the quota zone were obtained by aerial inventories, which were conducted weekly or biweekly by biologists with the Illinois Department of Conservation and the U.S. Fish and Wildlife Service.

Age ratios of geese were obtained by inspecting tail fans from birds harvested at the Union County, Horseshoe Lake, and Crab Orchard public hunting areas. Additional tail fans were collected from geese processed by commercial pickers in Alexander, Union, and Williamson counties. The fans were stored individually in envelopes until such time they could be inspected by biologists.

RESULTS AND DISCUSSION

Hunting Pressure

During the 1977 goose season in the southern Illinois quota zone, 57,472 hunter-trips were recorded (Table 1). This represents a 30 percent increase in total hunter activity from 1976 when the season was 17 days shorter. The 1977 season averaged 1,306 hunters per day for 44 days. The 1976 season averaged 1,633 hunters per day for 27 days, and the 1975 season averaged 1,477 hunters per day for 30 days. Comparison of 1977's hunting intensity to 1976's shows little change in Alexander and Union counties, where 34 and 20 percent, respectively, of the hunting trips occurred.

The number of hunting areas increased from 357 in 1976 to 419 in 1977. Seventy-two licensed (paid) clubs were registered during the 1977 season. The remaining 347 areas were issued free licenses. In terms of hunter-trips, Williamson/Jackson counties--i.e., the land surrounding the Crab Orchard NWR--recorded the heaviest use with 26,461. Alexander County was second with 19,668 hunter-trips. Union County followed with 11,343 hunter-trips during the 1977 season.

Public hunting areas in the quota zone accounted for 12,293 hunter-trips, or 21 percent of the total hunting effort in 1977 (Table 2). Twenty-three percent of the hunting in Williamson/Jackson counties took place on public lands. Public hunting areas attracted 33 percent of the effort in Union County and 12 percent of the effort in Alexander County.

Hunter Success and Harvest

The success rate of all hunters in the quota zone was 0.53 during the 1977

season (Table 1). This is a 7 percent decrease from the 1976 success rate of 0.57. The highest success rate recorded in 1977 occurred on paid clubs in Williamson/Jackson counties where hunters averaged 0.98 geese per trip. Paid clubs in Alexander County followed with a success rate of 0.58. Union County hunters averaged 0.37 birds per trip on paid clubs. Hunters on free permit areas averaged 0.44 birds per trip in Alexander County, 0.36 birds per trip in Williamson/Jackson Counties, and 0.24 birds per trip in Union County (Table 1).

The most pronounced change in hunter success between the 1976 and 1977 seasons was the marked decrease (from 0.62 to 0.35) in Union County (Table 3). The success rate in Williamson/Jackson County decreased from 0.65 to 0.57, whereas the success rate in Alexander County increased from 0.49 to 0.56.

Hunters on public lands in Union County experienced a 0.28 success rate in 1977, which is less than the success experienced by hunters on nearby commercial clubs. However, success on public lands in Union County in 1976 was 0.60. Public lands in Alexander County and in Williamson/Jackson counties changed little between 1976 and 1977.

Harvest by county and percentages are presented in Table 1. A total of 23,524 geese was harvested on commercial clubs. This accounts for 77 percent of the total harvest, which is slightly less than the 81 percent taken by commercial clubs in 1976.

The daily goose harvest ranged from a low of 124 birds on December 25 to a high of 1,963 geese on December 15; the average was 699. This represents a 27 percent decrease in the average daily harvest, 1977 compared to 1976.

Harvest on the public hunting areas in the entire quota zone was 3,635 birds or 12 percent of the total take (Table 2). Williamson/Jackson counties public areas surpassed the other counties with 1,914 geese or 17 percent of the total take in the vicinity of Crab Orchard NWR. A total of 1,043 geese was harvested on public areas in Union County or 27 percent of the Union County total take. A comparison of the harvest by county for the past 5 years is presented in Table 4.

Population Status

The greatest number of geese in the quota zone (405,000) was recorded on December 12. This count, which represented an all-time high, was 89,000 more geese than was reported during the peak count in 1976 (Fig. 1). On this same date, December 12, 1977, there were 70,000 geese at Rend Lake, located 30 miles north of Crab Orchard, and 50,000 at Ballard County, Kentucky, located 15 miles east of Horseshoe Lake. Peak populations at each of the refuges were 120,000 at Crab Orchard NWR, 155,000 at Horseshoe Lake, and 115,000 at Union County (Fig. 2).

For the first time since 1973 the age ratio of geese harvested on the public hunting area in Union County was below the long term mean (Table 5). The 1977 age ratio at the Horseshoe Lake Public Hunting Area was lower than in 1976 but higher than long term average. Generally speaking, age ratios were high early in the 1977 season, declined substantially during the middle of the season, and were high again towards the end of the season (Table 6). The ratio among all 4,941 geese identified as to age during the 1977 season was 1.37 immatures per adult.

The 85,700 Canada geese counted in southern Illinois (quota zone, Rend Lake, and Ballard County, Kentucky combined) on October 11, the first inventory of the

season, was approximately twice the number counted during the same week in 1973 and 1976 (Fig. 3). However, the first inventory in 1974 and 1975 revealed the presence of 82,300 and 107,800 geese, respectively. The increase in numbers of geese through the third week in November 1977 was similar to, or slightly greater than, the buildup during the 4 previous years. Inventories conducted from the last week in November 1977 to the last week in January 1978 indicated that more geese were wintering in southern Illinois than in previous years. A record 525,000 geese was counted on December 12; the three inventories in January resulted in tabulations of 464,000, 485,000, and 445,000 geese, respectively.

LITERATURE CITED

- Kennedy, D. D., G. C. Arthur, and N. J. Foltz. 1974. Canada goose harvest and hunting activity in the southern Illinois quota zone during the 1973 season. Illinois Dept. Conservation, Migratory Bird Sect., Periodic Rpt. No. 10. 14pp.
- _____, Roetker, F. H., N. J. Foltz, and G. C. Arthur. 1975. Canada goose harvest and hunter activity in the southern Illinois quota zone during the 1974 season. Illinois Dept. Conservation, Migratory Bird Sect., Periodic Rpt. No. 12. 15pp.
- Thornburg, D. D., V. Hamer, and N. J. Foltz. 1976. Canada goose harvest and hunter activity in the southern Illinois quota zone during the 1975 season. Illinois Dept. of Conservation, Migratory Bird Sect., Periodic Rpt. No. 15. 12pp.
- Roetker, F., N. J. Foltz, and W. L. Anderson. 1977. Canada goose harvest and hunter activity in the southern Illinois quota zone during the 1976 season. Illinois Dept. of Conservation, Migratory Bird Sect., Periodic Rpt. No. 19. 12pp.

Table 1. Hunter-trips and harvest of Canada geese in the southern Illinois quota zone during the 1977 season.

County	Hunter- Trips	Percent		Harvest	Percent		Success Rate
		By Permit	By Counties		By Permit	By Counties	
Alexander (Horseshoe Lake) Licensed Club ^a (24) ^b	17,902	91		10,338	93		.58
Free Permits (44)	1,766	09		773	07		.44
Total	19,668	100	34	11,111	100	36	.56
<u>Union County</u>							
Licensed Clubs (15)	9,541	84		3,492	89		.37
Free Permits (32)	1,802	16		435	11		.24
Total	11,343	100	20	3,927	100	13	.35
Williamson/Jackson (Crab Orchard NWR)							
Licensed Clubs (33)	9,853	37		9,694	62		.98
Free Permits (271)	16,608	63		6,015	38		.36
Total	26,461	100	46	15,709	100	51	.59
Grand Total	57,472		100	30,747		100	.53

^aLicensed clubs are those areas that charge a daily fee for hunting. Free permits represent all other areas where goose hunting takes place. Each type of permit requires the same type of registration.

^bNumbers of permits issued.

Table 2. Contribution of public hunting areas to the hunting effort and harvest of Canada geese during the 1977 season.

County	Hunter-Trips	Percent of Total	Harvest	Percent of Total	Success Rate
Alexander ^a	2,439	12	678	19	.28
Union ^b	3,045	27	962	24	.32
Union ^c	659	6	81	2	.12
Williamson/Jackson ^d	2,713	10	791	5	.29
Williamson/Jackson ^e	<u>3,437</u>	13	<u>1,123</u>	7	.33
All counties	12,293	21	3,635	12	.30

^aHorseshoe Lake Public Hunting Area, a licensed club.

^bUnion County Public Hunting Area, a licensed club.

^c"Firing Line" on U.S. Forest Service Land, a free permit.

^dCrab Orchard NWR Public Hunting Area, a licensed club.

^e"Free-Lance Hunting" on Crab Orchard NWR Land, a free permit.

Table 3. Success rates for Canada goose hunters in the southern Illinois quota zone, 1972 to 1977.

County	1972	1973	1974	1975	1976	1977
Alexander	0.33	0.46	0.57	0.55	0.49	0.56
Union	0.37	0.49	0.56	0.80	0.62	0.35
Williamson/Jackson	0.28	0.27	0.40	0.43	0.65	0.59
All counties	0.33	0.41	0.49	0.57	0.59	0.53

Table 4. Harvest of Canada geese by county in the southern Illinois quota zone, 1973 to 1977,^a

County	1973		1974		1975		1977			
	Number	Percent	Number	Percent	Number	Percent	Number	Percent		
Alexander	9,438	41	10,624	43	9,176	37	7,613	30	11,111	36
Union	6,626	29	5,591	23	8,629	34	5,984	23	3,927	13
Williamson/Jackson	6,807	30	8,458	34	7,270	29	12,268	47	15,709	51
Total	22,871	100	24,673	100	25,075	100	25,865	100	30,747	100

^aThese harvest data are from daily registers of licensed clubs and permit areas, and regulations pertaining to these have changed through the years. In 1973, data came from licensed clubs, public hunting areas, and free permit areas. A licensed club was any area on which money changed hands for hunting either daily or annually. All goose hunting areas that were not licensed clubs or public hunting areas were required to have a free permit. Beginning in 1974, licensed clubs were only those areas that charged a daily fee and all others were required to have a free permit.

Table 5. Age ratios, expressed as immatures per adult, among Canada geese harvested on the Horseshoe Lake and Union County public hunting areas, 1965 to 1977.

Year	Horseshoe Lake	Union County
1965	--	3.7
1966	1.1	2.6
1967	0.8	1.7
1968	1.2	2.2
1969	0.9	1.2
1970	0.9	3.4
1971	1.4	2.8
1972	0.8	1.1
1973	0.8	1.6
1974	1.8	2.5
1975	2.6	4.1
1976	2.5	2.7
1977	<u>1.7</u>	<u>1.3</u>
MEAN	1.38	2.38

Table 6. Age ratios, expressed as immatures per adult, among Canada geese harvested each week of the 1977 season in the southern Illinois quota zone. Sample sizes are in parentheses.

Date	Public Hunting Areas			Public Hunting Areas		
	Crab Orchard	Union County	Horseshoe Lake	Crab Orchard	Union County	Alexander Co.
Nov. 21-27		4.54(72)	3.61(83)	3.00(24)	-----	1.75(402)
Nov. 28-Dec. 4		3.18(46)	2.16(60)	.64(41)	1.00(58)	-----
Dec. 5-11		1.25(54)	1.05(39)	-----	-----	1.56(415)
Dec. 12-18		.93(178)	1.31(294)	.78(237)	1.04(231)	1.55(470)
Dec. 19-25		.94(184)	1.97(113)	-----	.95(72)	.97(413)
Dec. 26-Jan. 3		1.11(152)	2.42(89)	-----	1.38(169)	1.89(407)
Entire Season	1.22(658)	1.32(666)	1.74(678)	.84(302)	1.12(530)	1.50(2107)

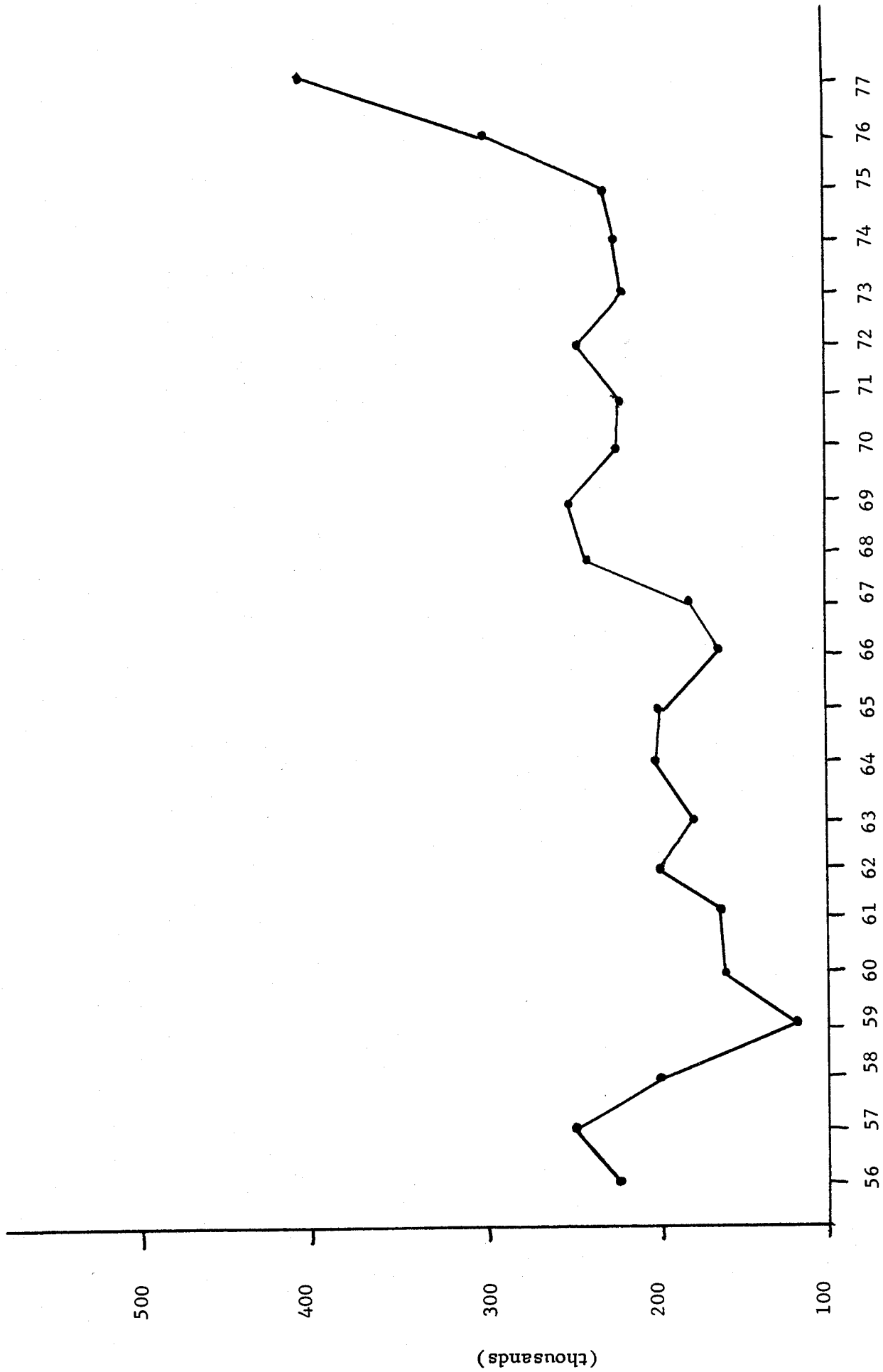


Figure 1. Peak populations of Canada geese in the southern Illinois quota zone, 1956 to 1977.

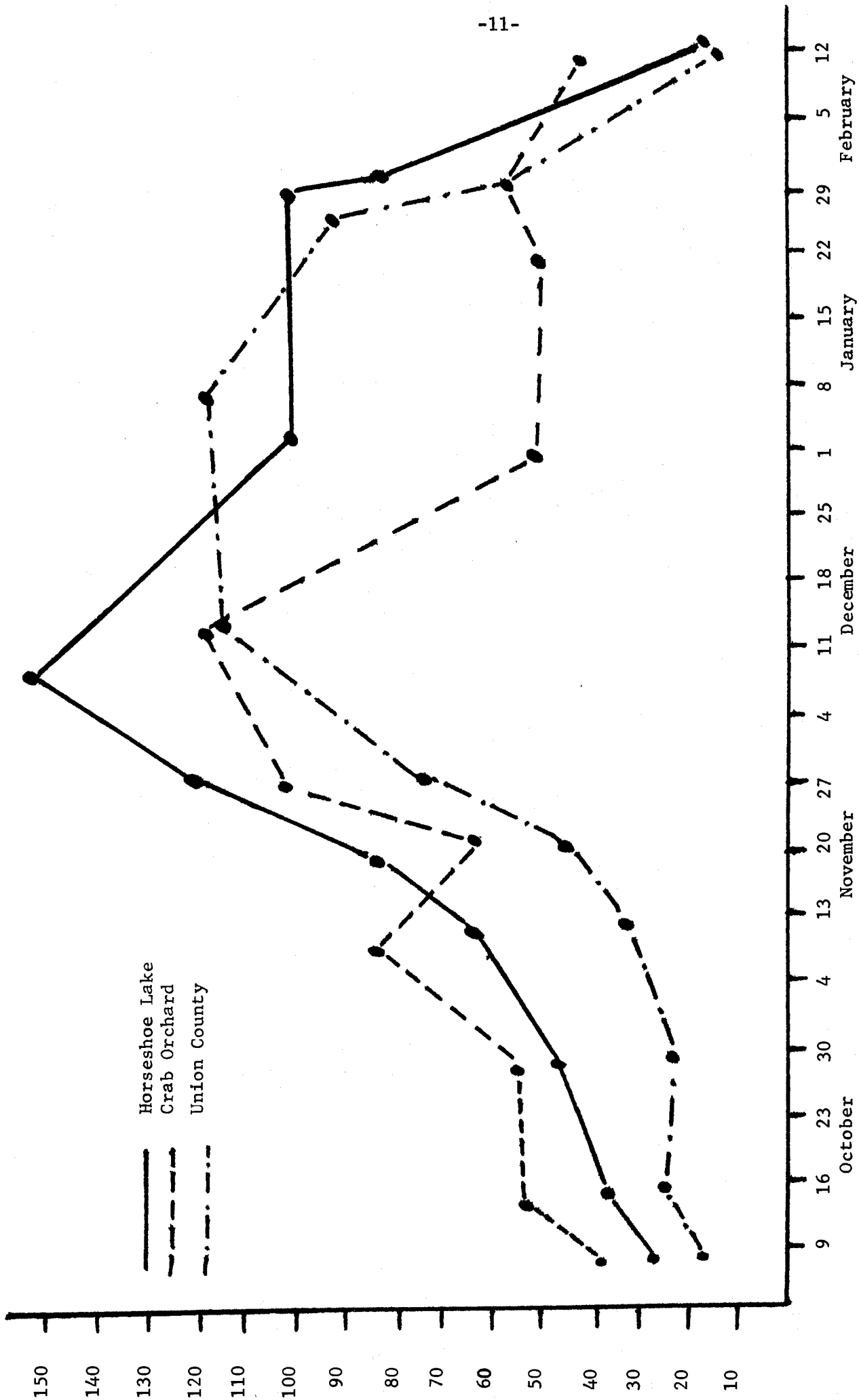


Figure 2. Numbers of Canada geese on the three refuges in the southern Illinois quota zone during fall and winter, 1977-78.

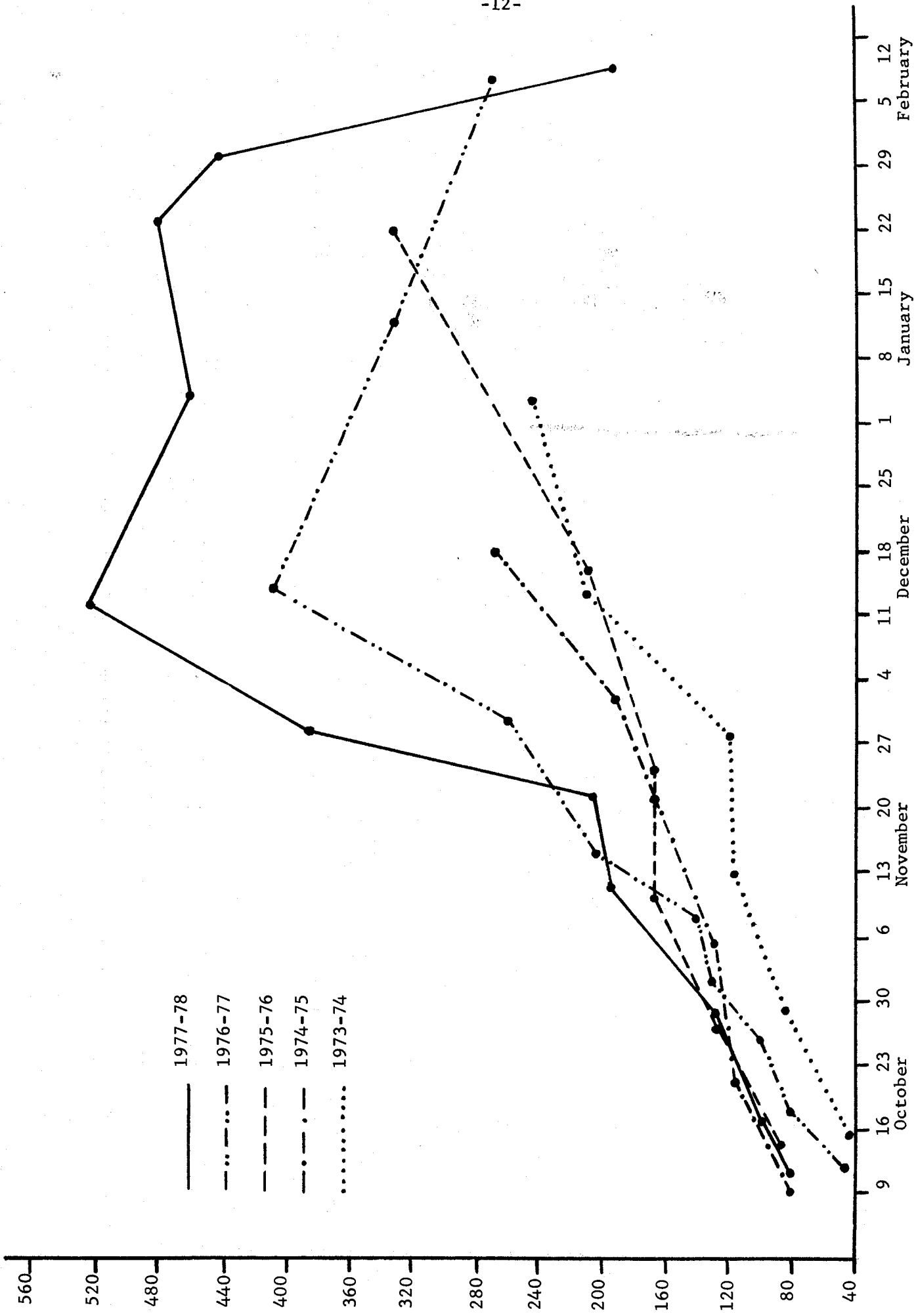


Figure 3. Numbers of Canada geese in southern Illinois (quota zone, Rend Lake, and Ballard County, Kentucky, combined) during fall and winter, 1973-74 to 1977-78.