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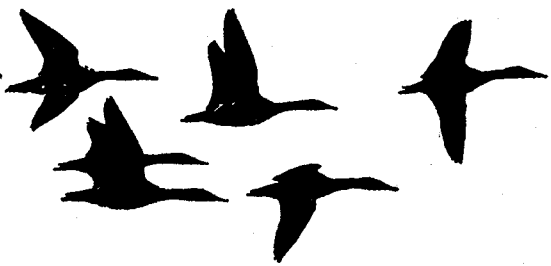
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CANADA GOOSE HARVEST AND HUNTER ACTIVITY IN THE SOUTHERN ILLINOIS QUOTA ZONE DURING THE 1974 SEASON

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Abstract: During the 1974 Canada goose season in the southern Illinois quota zone hunters made 49,971 trips to harvest 24,673 birds for an average daily success rate of .49. Hunting pressure was stable throughout the year with heaviest pressure on weekends. Average number of hunters per day was 1,315. Hunter success was very good late in the season, averaging .63. Public hunting areas accounted for 26 percent of the total hunting effort and 19 percent of the harvest with a daily success average of .35. Alexander county recorded 38 percent of the total hunting effort and 43 percent of the harvest with a success of .57. Union county had 24 percent of the hunter trips, 29 percent of the harvest and a daily success of .56. Williamson/Jackson counties took 42 percent of the trips but only 34 percent of the harvest for a .40 success rate. The population peak in the quota zone was 217,000 on December 18th. There appeared to be an increase in the early migrating segment. Age ratios from the bag were higher to immatures than normal with 1.8 immatures per adult at Horseshoe Lake, 2.5:1 at Union County and 1.6:1 around Crab Orchard NWR.

INTRODUCTION

Canada goose seasons in the southern Illinois quota zone during 1972 and 1973 have been the poorest on record in terms of harvest success (Kennedy, et al 1974). Those seasons ran 52 and 63 days respectively with average daily success ratios of .33 and .41 while previous seasons averaged .61. The 1974 season opened on November 25 and closed January 1, 1975, some 38 days later with somewhat of a return to normality.

This report will review characteristics of hunting pressure, success, harvest and goose population status.

We wish to acknowledge the assistance of Steve Frick, Wayne Adams and the staff at Crab Orchard NWR in issuing information concerning landowner permits and providing harvest information from their public hunting areas. Wayne Wilson, Peter Clarke and Harley Faughn were of great assistance in handling the burden of the free landowners permit. Maxine Powless deserves appreciation for administering the free landowners permits. Vic Hamer assisted in age and sex ratio samples and in compiling daily harvest totals.

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METHODS AND MATERIALS

The system of harvest registration in the quota zone remained the same as was used in 1973 (Kennedy, et al, 1974) with one exception. There was a different interpretation of the law governing the paid clubs. This year only those clubs charging a daily fee were required to have a paid license. This will effect the proportions of free versus paid hunters but does not reflect a changing trend away from day shooting.

The administration of the free quota zone permit for non commercial areas was improved. There were better news releases, distribution of registration of materials and follow-ups on delinquent registers.

All information on hunter trips, harvest and success are derived from the daily register sheets which all clubs must maintain and submit bi-weekly.

Population figures are obtained through bi-monthly aerial inventories by biologists from Crab Orchard Refuge and the Illinois Conservation Department.

Age ratios from the bag are obtained by inspecting tail fans of birds harvested at the Union County and Horseshoe Lake Public Shooting Areas. Also, commercial pickers in Alexander, Union and Williamson counties save tail fans from processed geese. These are placed in individual envelopes and inspected by biologists when convenient.

RESULTS AND DISCUSSION

The 1974 goose season in the southern Illinois quota zone began to resemble the normal situation after two rather poor years. To elaborate on this conclusion topics of hunting pressure, success, harvest and population status are discussed in individual sections.

Hunting Pressure

During the 1974 season there were 49,971 hunter trips for Canada geese in the southern Illinois quota zone (Table 1). This represents an 11 percent decrease in total hunter activity from 1973 when the season ran 25 more days. The 1973 season averaged 893 hunters per day for 63 days while the 38 days this year averaged 1,315 hunters per day (Fig. 1). We have previously reported that in recent years there has been an increase in hunter activity, particularly in Williamson county. Direct comparison of the annual use figure cannot be made because of the changing regulations and the increasing intensity with which the regulations are administered. Each year since 1968 there has been increased precision in the registration process and consequently the true increase in hunter activity is somewhat obscured.

Hunting pressure remained fairly constant throughout the season (Fig. 1). Weekends continue to attract the greatest number of hunters and as in 1973 the largest single day was the last Saturday of the season when 2,116 people were afield. The only decrease notable was weekdays during the second and third weeks of the season when hunting was poor. Christmas day recorded 644 hunters, the lowest daily total.

The number of hunting areas decreased by six percent from 308 in 1973 to 290 in 1974. The length of the season probably was the difference since a number of free permits were issued late in the season last year. As mentioned in methods section, the interpretation of requirement for licensed clubs was restricted to

daily fee areas only. There were 101 licensed (paid) clubs in 1973 and only 60 in 1974 while the free permit areas went from 207 to 230.

The area of heaviest use was Williamson/Jackson counties surrounding the Crab Orchard National Wildlife Refuge. These counties accounted for 42 percent or 21,216 man-days of hunting followed by Alexander county, around Horseshoe Lake Refuge, with 38 percent and Union County, around the Union County Refuge, with 20 percent (Table 1). This is the second year that the Crab Orchard complex has recorded the heaviest hunter use. This is due primarily to new regulations requiring free permits and registration on all properties. Before last year many marginal area hunters fell outside of the registration regulations. The new regulations do not obscure a trend of increasing hunter activity in Williamson/Jackson counties.

Public hunting areas in the quota zone attracted 13,179 man-days of effort or 26 percent of the total effort (Table 2). Public land hunters in Williamson/Jackson counties accounted for 36 percent of the total hunter days in the counties while Alexander county public lands attracted only 14 percent of the total hunter efforts there.

Hunter Success

The average daily hunter success in the quota zone was .49 during 1974 (Table 1). This is a 20 percent improvement over 1973 when the daily success average was .41. Although this success figure is somewhat lower than those of 1969 through 1972 it must be remembered that in those years only the licensed clubs and public shooting area harvest was considered (Table 3). Using the same formulas to attain a success ratio for 1974 as was used in earlier years, the quota zone success for paid clubs would be .62. In 1973, it would have been .49.

Best success was found at paid clubs in Williamson county with .74 followed by paid clubs at Union county and Alexander county (Table 1). Free permit areas did not fair as well and a reverse order of counties has Alexander county leading with .47 average daily success.

Hunting success was better late in the season than early (Fig. 2). Most hunting after December 15 was above the daily average.

Success rates for the individual areas followed similar patterns. Hunting around Crab Orchard, as indicated by the average success, was lower throughout the year than Horseshoe Lake and Union county. This lower success in Williamson county is primarily due to the large numbers of hunters using public areas and marginal free permit areas. Commercial clubs maintained success comparable to the other counties. Alexander and Union county hunters had five days, from December 23 through the 27th, with success rates of one bird per hunter.

Hunter success on the public areas was comparable to licensed clubs in Alexander and Union counties but in Williamson/Jackson county public land success was substantially lower than club success. (Tables 1 and 2). The two state areas showed almost 100 percent improvement from 1973 while the federal areas showed only a slight improvement. This improvement was basically the result of improved corn crops on the state areas.

Harvest

Total Canada goose harvest in the southern Illinois quota zone was 24,673. This was a 2,673 over-run of the 22,000 bird quota. Harvest by county and per-

centages are presented in Table 1.

The quota was exceeded by 12 percent. The system of season closure as the quota is reached is somewhat imprecise by nature. It takes a minimum of three days from the time the closure decision is made until the season can be closed. The federal closing order must appear as a legal notice in three newspapers at least 48 hours prior to the closing hour. Even though these documents are prepared in advance, except for date, the physical act of getting them into the paper takes a day. If this procedure falls on a weekend the chore is further complicated in that federal offices are closed and often papers will not print on one day of a weekend. Consequently a harvest projection is involved so that the season closure and the quota climax together.

A six day projection was required in 1974. A harvest of about 15,000 was tallied through December 22 but the mail and counting procedure did not make this figure available until the 24th. The next scheduled mailing date was the 26th with the count to be completed on Saturday the 28th. Since the harvest rate had been high the previous week, it was probable that the decision for closure may need to be made on Friday the 27th or on Monday the 30th. On Friday the 27th, without the benefit of all registers from Monday the 23rd through Thursday on the 26th, a count was made by calling club operators and estimating harvest on unreported areas. This count indicated that approximately 18,000 birds had been taken through the 26th. A long range weather forecast predicted ideal goose harvest weather through Saturday the 28th with clearing, sunny, cold and a full moon for the following week. Based on this forecast and previous harvest in relation to the weather a closure date of January 1st was set with a predicted harvest of 4,300 birds as follows: 27th, 1,000; 28th, 1,200; 29th, 600; 30th 500; 31st, 500; and January 1st, 500. In reality the weather stayed rainy and mild through the 31st and finally cleared the last day and the actual harvest for that period was: 27th, 1,009; 28th, 1,425; 29th, 1,299; 30th, 682; 31st, 1,073 and January 1st, 452. In addition some 700 harvested geese on delinquent registers dated prior to the 26th were received on the 30th.

Of the total harvest, 19,409 or 79 percent was taken on licensed club areas (Table 1). This represents a decrease from 85 percent in 1973 and is probably accounted for by the shift of some areas from a license to a free permit.

An important aspect in a quota zone is the harvest per day which is a function of the number of people hunting and the conditions of the day. The average daily harvest in the zone was 649 birds but this varied from 107 birds on December 2nd to 1,425 on December 27th (Fig. 3). There were 10 successive days from December 20th through December 29th where the harvest per day averaged over 1,000 birds. When good goose harvest days fall on a weekend and there is a high number of hunters afield large harvests occur. Such was the 28th of December when the heaviest hunter use (Fig. 1) produced the largest goose take of the season (Fig. 3).

Harvest on public hunting areas in the entire zone was 4,613 or 19 percent of the total take (Table 2). Union County public areas led with 1,964 birds or 36 percent of that counties harvest.

Table 4 depicts the relationship of the total registered harvest over recent years. The apparent trend toward an increase around Crab Orchard is continuing but the change in registration regulations make the trend appear more dramatic.

Population Status

The population peak for the three refuge areas was reached on December 18th when 217,000 birds were inventoried. This is 7,500 more than at the same time in 1973 (Fig. 4). On this same date there were 18,000 birds in Ballard County, Kentucky and 32,000 at Rend Lake. Individual refuge population peaks were Crab Orchard NWR, 87,000; Horseshoe Lake Refuge, 77,000; and Union County Refuge 53,000 (Fig. 5). This is the first year that Crab Orchard has produced a higher December peak than Horseshoe Lake. Since 1970, there has been a marked increase in the December birds at Crab Orchard and a seeming decline at Horseshoe Lake.

The progress of the migration from Horicon NWR was more gradual than in past years with a noticeable number arriving around the 12th of December (Fig. 5). The early segment, prior to the Horicon segment (Kennedy and Arthur, 1974) was a minimum of 124,000 birds recorded on November 11th. This is an increase of 10 percent. The October peak shows 115,000 birds in 1974 versus 83,000 in 1973 or a 39 percent increase.

Age ratios from the harvest were substantially higher than the previous two years (Table 5). At Horseshoe Lake the ratio was the highest since 1966 and at Union County the highest since 1971.

Age ratios, as expected, were high early in the season and declined later as the number of vulnerable young were reduced from the population (Table 6). Ratios recorded during the last week of the season showed that there were still a substantial number of immatures in the population.

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.
- _____, and G. C. Arthur. 1974. Subflocks in Canada geese of the Mississippi valley population. Wildl. Soc. Bull. 2(1):8-12.

Table 1. Man days of hunter use and Canada goose harvest in the southern Illinois quota zone during the 1974-1975 season.

County	Hunter		Percent		Harvest		Percent		Success	
	Days	Days	By Counties	By Counties	By Counties	By Counties	By Counties	By Counties	By Counties	Rate
<u>Alexander (Horseshoe Lake)</u>										
Licensed Clubs (25)	16,722		.89		9,671		.91			.58
Free Permits (31)	2,029		.11		953		.09			.47
Total	18,751		1.00	.38	10,624		1.00	.43		.57
<u>Union County</u>										
Licensed Clubs (8)	8,322		.83		5,087		.91			.61
Free Permits (39)	1,682		.17		504		.09			.30
Total	10,004		1.00	.20	5,591		1.00	.23		.56
<u>Williamson/Jackson (Crab Orchard NWR)</u>										
Licensed Clubs (27)	6,319		.30		4,679		.55			.74
Free Permits (160)	14,897		.70		3,779		.45			.25
Total	21,216		1.00	.42	8,458		1.00	.34		.40
Grand Total	49,971			1.00	24,673			1.00		.49

Licensed clubs are those which charge a daily fee for hunting. Free permit are all other areas where goose hunting takes place. Each type of permit requires the same type of registration.

Table 2. Contribution of public hunting areas to the quota zone effort and harvest during the 1974 Canada goose season.

County	Hunter Days	Percent of Total	Harvest	Percent of Total	Success Ratio
Alexander ¹	2,624	.14	1,527	.14	.58
Union ²	3,385	.34	2,015	.36	.60
Williamson/Jackson ³	7,575	.36	1,122	.13	.15
Total	13,179	.26	4,613	.19	.35

¹ Horseshoe Lake Public Shooting Area, a licensed club.

² Union County Public Shooting Area, a licensed club, and an area on Forest Service land, a free permit.

³ Public hunting lands on Crab Orchard NWR, free permit.

Table 3. Success ratios for Canada goose hunters in the southern Illinois quota zone counties from 1969 through 1974.

	Success Ratio					
	1969	1970	1971	1972	1973	1974
Alexander	.60	.60	.70	.33	.46	.57
Union	.68	.64	.54	.37	.49	.56
Williamson/Jackson	.72	.61	.38	.28	.27	.40
All	.64	.61	.54	.33	.41	.49

Table 4. Canada goose harvest by county in the southern Illinois quota zone from 1969 through 1974.

County	Harvest ¹											
	1969	1970	1971	1972	1973	1974						
	%	%	%	%	%	%						
Alexander	9,608	.47	11,123	.40	11,865	.48	6,042	.38	9,438	.41	10,624	.43
Union	5,591	.28	8,430	.31	7,456	.30	5,236	.33	6,626	.29	5,591	.23
Williamson/Jackson	5,109	.25	7,927	.29	5,251	.21	4,544	.29	6,807	.30	8,458	.34
Total	20,308	1.00	27,480	1.00	24,572	.99	15,822	1.00	22,871	1.00	24,673	1.00

¹ These harvest figures are from daily registers of licensed clubs and permit areas and the regulations pertaining to these have changed. From 1969 through 1972 data come from licensed clubs and public shooting areas. A licensed club was any area in which money changed hands for hunting either daily or annually. In 1973, the same interpretation was used plus all areas where geese were hunted were required to have a free permit. In 1974 licensed clubs were only those who charge a daily fee and all others were required to have a free permit.

Table 5. Age ratios of Canada geese harvested on the Horseshoe Lake and Union County public hunting area 1965 through 1974.

Year	Horseshoe Lake Adults:Immatures	Union County Adults:Immatures
1965	-----	1:3.7
1966	1:1.1	1:2.6
1967	1:0.8	1:1.7
1968	1:1.2	1:2.2
1969	1:0.9	1:1.2
1970	1:0.9	1:3.4
1971	1:1.4	1:2.8
1972	1:0.8	1:1.1
1973	1:0.8	1:1.6
1974	1:1.8	1:2.5

Table 6. Progression of age ratios from the bag throughout the season at Horseshoe Lake, Union County and Crab Orchard from commercial picking shed and public hunting areas.

Date	Public Hunting Areas		Commercial Picking Shed			
	Union County Adults:Imm. n	Horseshoe Lake Adults:Imm. n	Crab Orchard Adults:Imm. n	Union County Adults:Imm. n	Alexander County Adults:Imm. n	
11/25-12/1	1:4.4 275	1:5.4 167	---	1:5.0 24	1:4.1 187	
12/2-12/8	1:2.5 162	1:2.4 189	---	---	---	
12/9-12/15	1:3.3 130	1:1.7 126	---	---	---	
12/16-12/22	1:2.2 553	1:2.0 505	---	1:2.3 178	---	
12/23-1/1/75	1:1.8 305	1:1.1 536	1:1.6 472	1:1.3 185	1:2.4 610	
Total	1:2.5 1425	1 1.8 1523	1:1.6 472	1:1.8 387	1:2.7 797	

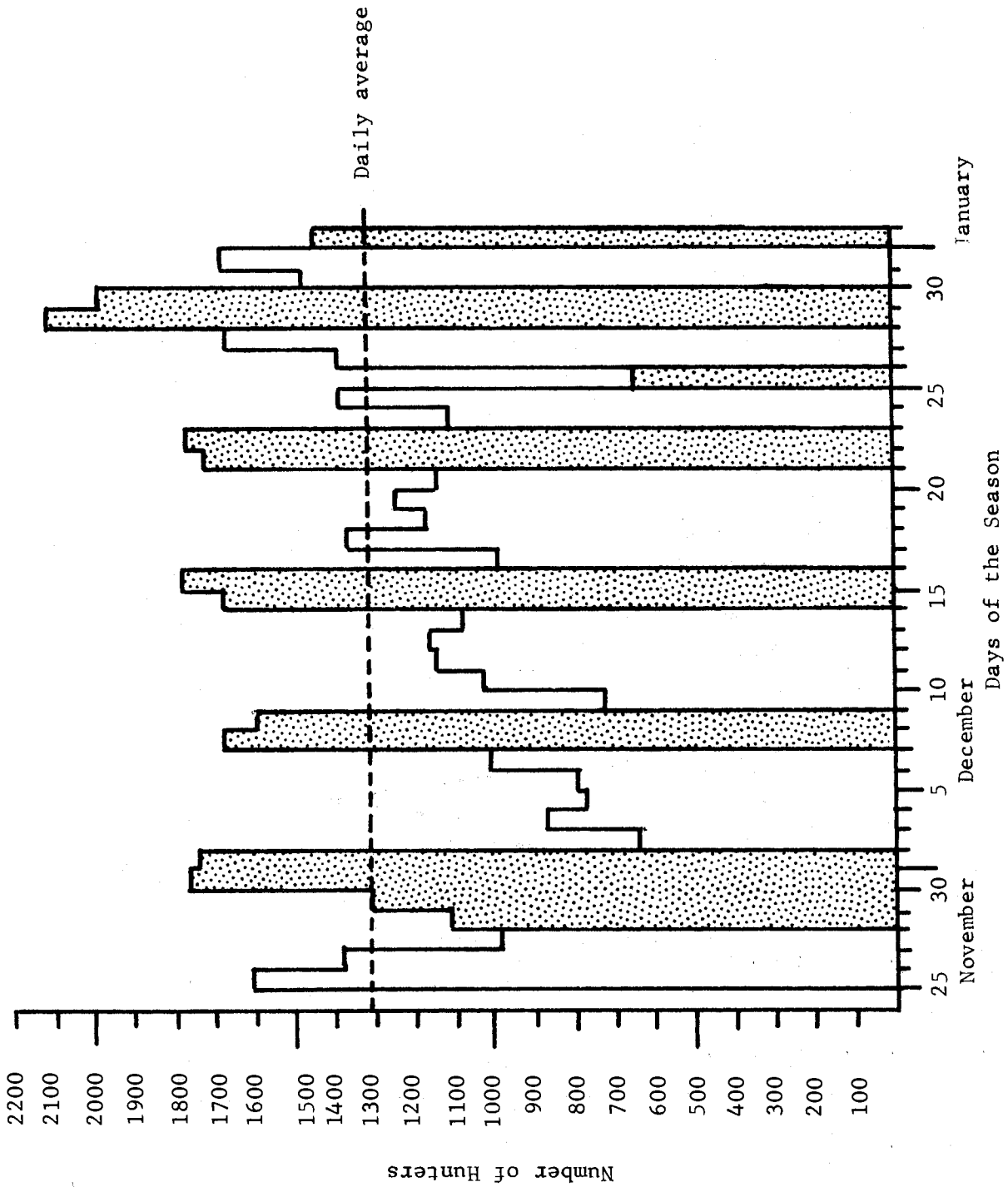


Figure 1. Progression of daily hunting pressure in all counties of the southern Illinois quota zone during the 1974 Canada goose season.

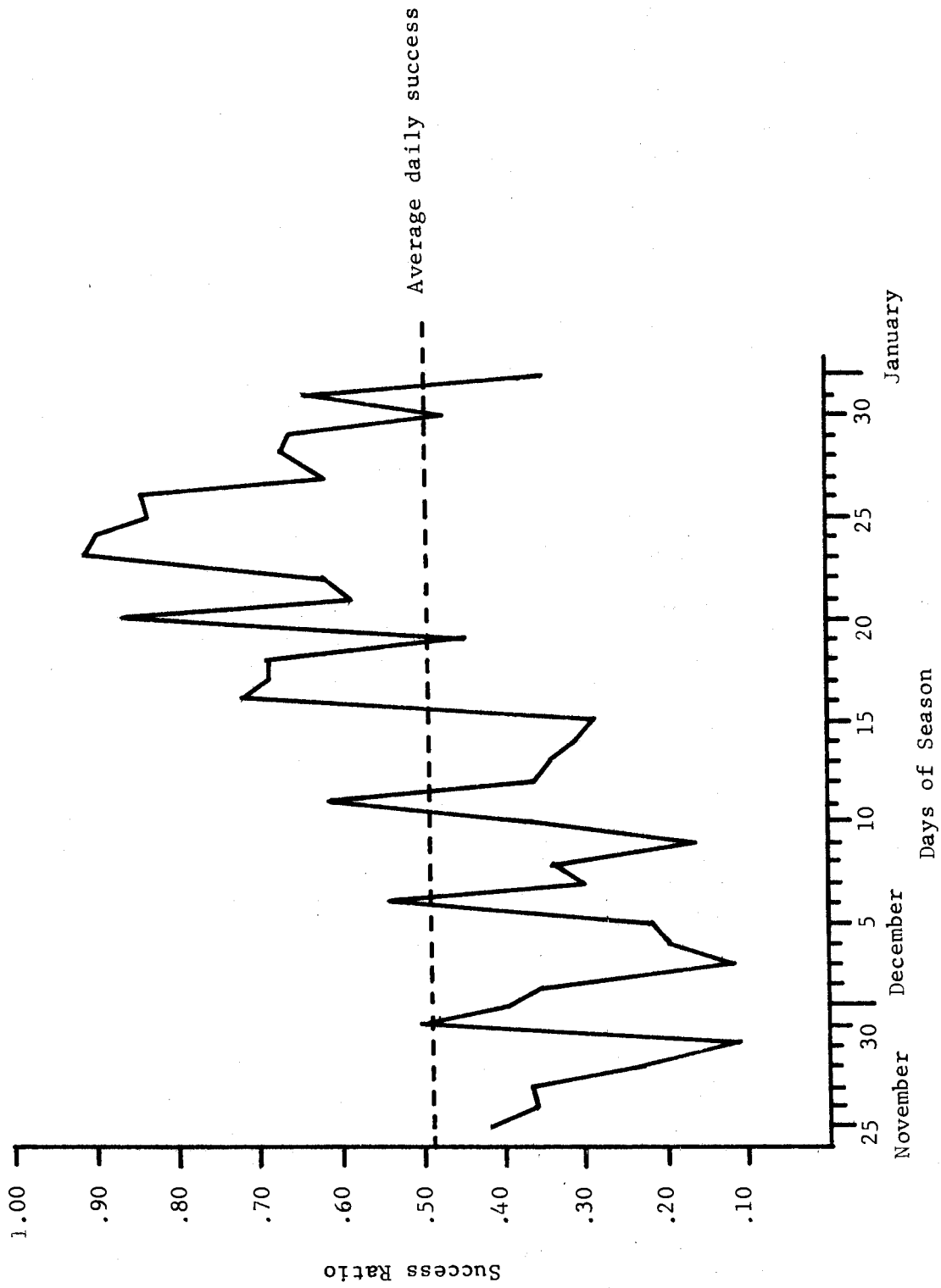


Figure 2. Progression of hunter success ratio for all counties in the southern Illinois quota zone during the 1974 Canada goose season.

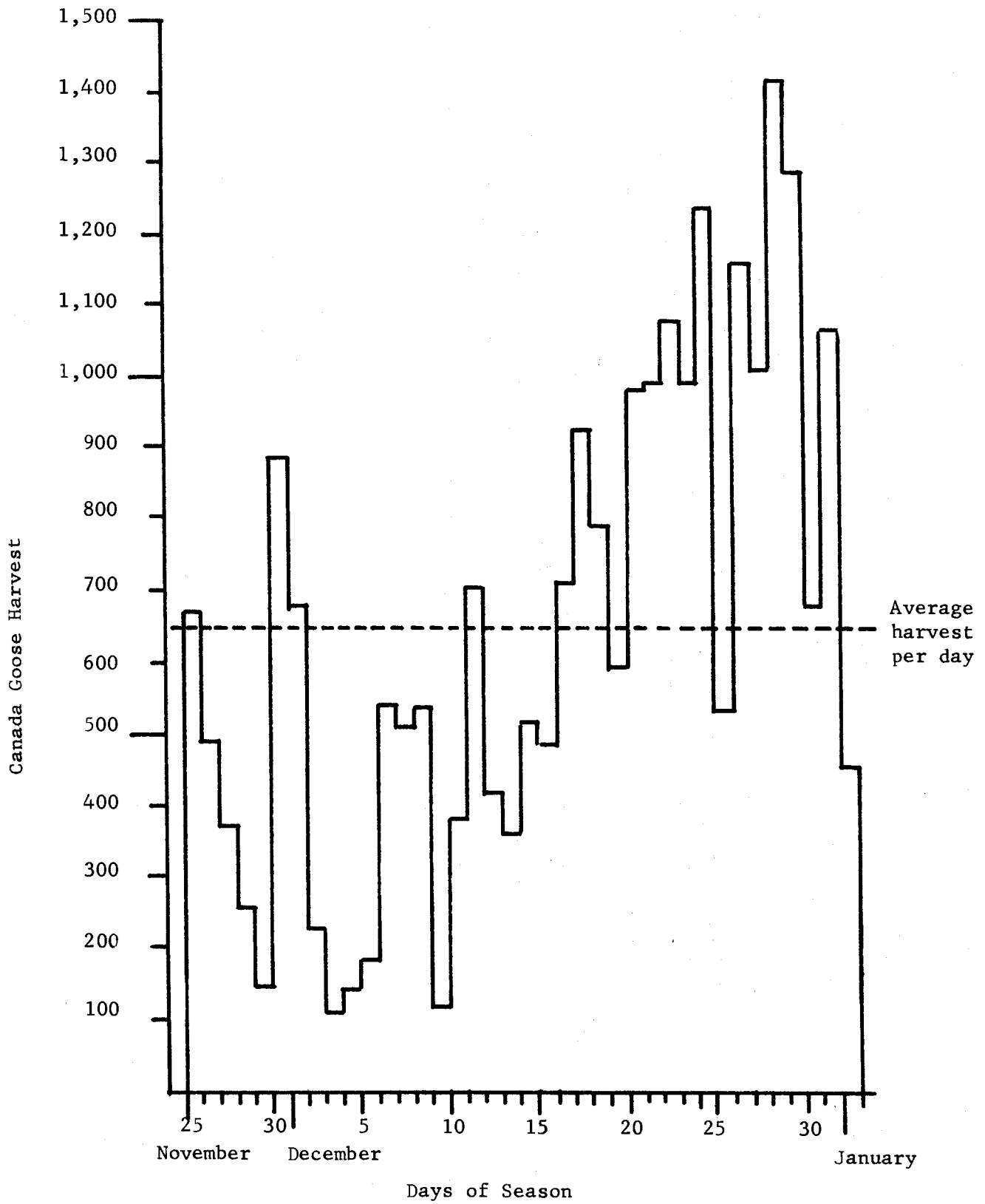


Figure 3. Canada goose harvest by day for the four county quota zone in southern Illinois during the 1974 season.

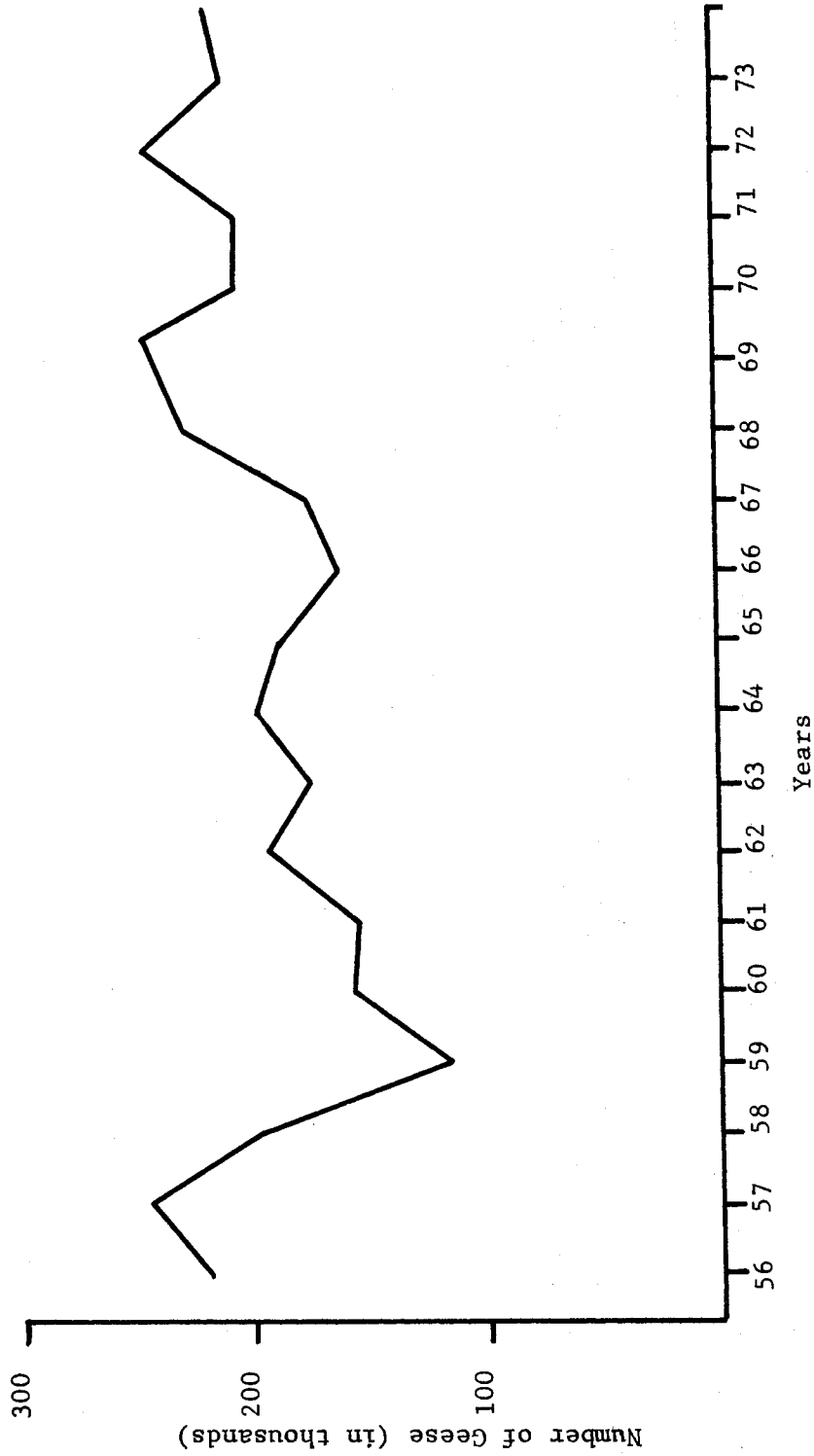


Figure 4. Peak populations of Canada geese at the southern Illinois quota zone concentration areas of Horseshoe Lake, Union County and Crab Orchard NWR from 1956 through 1974.

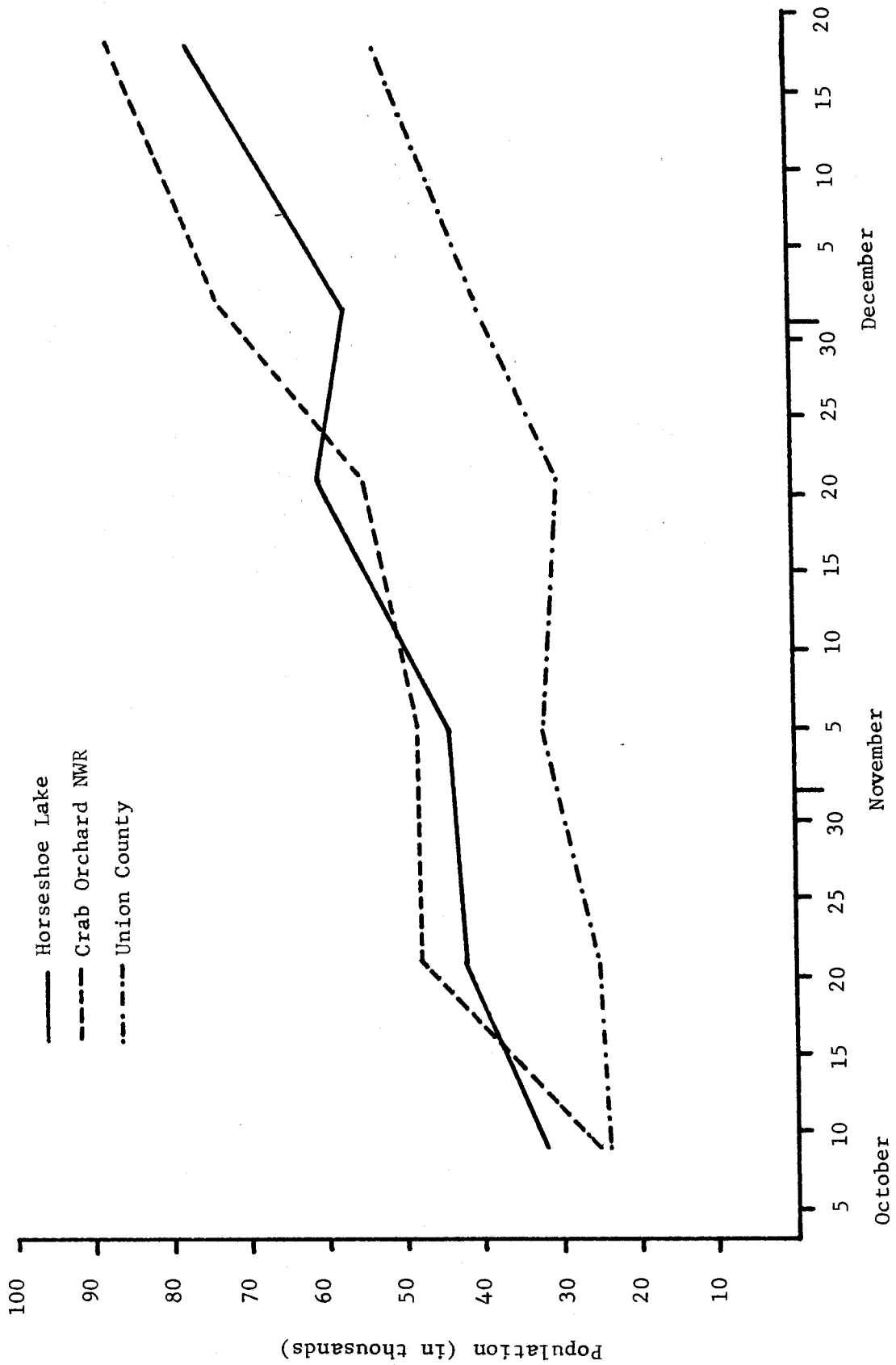


Figure 5. Canada goose populations throughout the fall by refuge areas in southern Illinois, 1974.