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CANADA GOOSE HARVEST AND HUNTING ACTIVITY IN THE SOUTHERN ILLINOIS QUOTA ZONE DURING THE 1973 SEASON

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Abstract: During the 1973 Canada goose season in the southern Illinois quota zone hunters expended 56,245 man days effort in harvesting 22,871 birds for an average daily success rate of .41. Hunting pressure remained stable throughout the year while daily success was very low early in the season and was better but spotty later in the season. Public lands in the quota zone accounted for 30 percent of the total hunting effort and recorded an average daily success of .21. Alexander county recorded 36 percent of the hunter efforts, 41 percent of the harvest and had daily success of .46. Union county had 24 percent of the hunter efforts, 29 percent of the harvest and a daily success of .49. Williamson and Jackson took 40 percent of the hunter trips but only 30 percent of the harvest for a .27 daily success rate. Population peak in the quota zone was 209,500 geese reached on December 14th. The proportion of immature to adults in the harvest was below average.

INTRODUCTION

The Illinois system of quotas, daily registration of hunters and harvest, although not perfect, offers more precision and management flexibility for Canada geese than any known system. This method of harvest regulation has been in effect since 1960. The counties of Alexander, Union, Williamson and Jackson in southwestern Illinois comprise, for goose management purpose, the southern Illinois quota zone.

The Mississippi Valley Canada goose concentrations in southern Illinois have been the subject of numerous reports. Hanson and Smith (1950), Reeves, Dill and Hawkins (1968) and Kennedy and Arthur (1974) provide history, biological background and recent evaluations of this population and its management program.

The purpose of this report is to begin an annual series detailing the traditional parameters of a management system: hunting pressure, success, harvest and population status. This report will provide a summary of past data to serve as a base for comparisons.

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We acknowledge the aid of Wayne Wilson, Peter Clarke, John Yates, Ron Cross, Leonard Devers, Harley Faughn, Gene Droge and many other Illinois Conservation Inspectors who have been of assistance in administration of the harvest regulation system. Arch Merhoff, Ed Nichols and the clerical staff at the Crab Orchard National Wildlife Refuge have shouldered the burden of the registration system in Williamson county. Federal Game Management Agents Miles Camery, Joe Hopkins, Wayne Cord, Ed Bozak and particularly Dave Purington have been of great assistance to the program. Periodic aerial inventories were through the capable efforts of Walt Reeves, Bill Mestel and Dennis Thornburg of the Illinois Department of Conservation and Bob Rice of the Crab Orchard NWR. We thank all those members of the Department of Conservation technical and clerical staff who have been involved with various aspects of this program over the years.

QUOTA ZONE REGISTRATION METHOD

Since 1960 the procedure of registration of harvested Canada geese has gone through a series of changes but the backbone of the system, the daily harvest register, has remained the same. Very briefly, in the four counties any property over which money has changed hands, annually or daily, for the purpose of goose hunting, must have a wild goose hunting club licenses. This licenses requires that all hunters on the property covered by this license must register their name and address prior to going into the field and immediately record their harvest upon leaving. Each club is required to mail these registers twice weekly to the Union County Refuge office where figures are tabulated by county and zone totals. As the quota is approached more frequent daily pickup of registers could be employed, but generally sufficient projections of harvest are made and a closing date is selected. The procedure for Federal closure is begun three days prior to the projected time of quota closure.

Over the years a number of additional techniques have been employed: kill slips for each goose; Canada goose permits for individual hunters; windshield card surveys for areas not covered by quota zone regulations; and percentage estimate for unregistered birds. Also there are spacing requirements for pits or blinds, limitations on number of hunters per pit, minimum distances from property lines and refuge boundarys, exemptions from club licenses, etc. A complete file of past rules and regulations would be too lengthy for inclusion or discussion.

The current regulations require a club licenses for only those areas which annual or daily fees for hunting are charged. On all other areas, regardless of economic considerations, if hunting for geese takes place the land must be covered by a free quota zone permit. Both the club licenses and the free permit areas must comply with daily registration and bi-weekly mailing. With careful enforcement this system allows for no exemption to the harvest registration.

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

Age ratios from the bag are obtained by inspecting tail fans of birds reported to the Union County and Horseshoe Lake Public Shooting Areas. Also a commercial picking plant in Union County saves tail fans from processed geese. These are placed in individual envelopes and inspected by biologists when convenient.

RESULTS AND DISCUSSION

Generally 1973 was a poor goose hunting season in which the harvest quota of 24,000 was not reached. The season ran 63 days, the longest in recent years, from November 19, 1973 to January 20, 1974.

Hunting Pressure

In the four county quota zone there were 56,245 man days of effort expended hunting Canada geese (Table 1). This is the largest use recorded in recent years, primarily because of the longer season and increasing interest.

The area of heaviest use was Williamson and Jackson Counties surrounding the Crab Orchard National Wildlife Refuge. These counties accounted for 40 percent or 22,469 man days of hunting followed by Alexander County, around Horseshoe Lake Refuge, with 36 percent and Union County, around the Union County Refuge, with 24 percent (Table 1). This is the first year that the Crab Orchard complex has recorded the heaviest hunter use. This is due primarily to the new regulation requiring free permits and registration on all properties. Before this year many marginal area hunters fell outside the registration regulations. The new regulations do not obscure a trend of increasing hunter activity in Williamson and Jackson counties. On licensed clubs and public hunting areas the use has increased from 10 percent of the total hunter days in 1968 to 37 percent in 1973 (Table 2). Horseshoe Lake, of national prominence, and Union County seems to be maintaining their clientel, but are not showing the increase in activity as is Jackson and Williamson Counties. The latter counties are attracting hunters due to increasing goose populations at Crab Orchard NWR and consequently better hunting (Kennedy and Arthur, 1974). Success between these areas in recent years is presented in Table 3. Hunter success on licensed clubs around Crab Orchard since the population increases in the mid-60's, described by Kennedy and Arthur (1974), has been comparable to or better than the other two concentration areas.

Hunter pressure remained fairly constant through the season (Fig. 1). Opening day and weekends attracted the greatest activity but the largest single days use came on the last Saturday of the season. Kennedy and Arthur (1973 a and b) show that duck hunters lose interest as seasons progress. Goose hunters traditionally remain fairly active throughout the season.

Alexander and Union Counties has far more licensed club hunting activity than does Williamson and Jackson Counties (Table 1). Hunting pressure and use patterns are very similar for each county and for the licensed club hunters and the free permit area hunters.

Public hunting areas in the quota zone attracted 16,963 man days of effort or 30 percent of the total effort (Table 4). Public land hunters in Union County accounted for 41 percent of the total hunter days while Alexander County public lands attracted only 14 percent of the total hunter efforts.

Hunter Success

Canada goose hunter success in the quota zone was .41 birds per effort (Table 1). This is better than the .33 success rate recorded in 1972 but is still the second poorest in the last decade (Table 3).

Overall success was best at Union County and Horseshoe Lake while hunting around Crab Orchard was poor (Table 1). Club hunting is better than the free permit areas, particularly in Jackson and Williamson counties where club hunters had a success of .49 while the free permit hunters were successful at a .18 rate (Table 1).

Success was better late in the season than early (Fig. 2). Between November 23 and December 11 was considered by many club operators the poorest period of goose hunting they could remember.

Success rates for the various counties throughout the season were very similar. Notable exceptions to this were on December 23 through 27th and on January 13th through 18th when daily success was well over 1.0 in Alexander and Union counties. These "good days" did not occur in Williamson and Jackson counties.

Hunter success on public areas was poorer than licensed clubs or free permits (Tables 1 and 4) with a .21 rate.

Harvest

Total Canada goose harvest in the southern Illinois quota zone was 22,871 during the 63 day season. This was 1,129 short of the 24,000 bird quota. Harvest by county and percentage of total harvest is presented in Table 1.

Of the total harvest, 19,409 or 85 percent was taken on licensed club areas while the remaining 15 percent (3,462 birds) came from areas under free permit. As can be seen in Table 1 the greatest effort and harvest from areas hunted under the free permit comes in Williamson and Jackson counties. Some 69 percent of the free permit harvest came from these counties. Also 35 percent of the total harvest in these counties is taken from free permit lands.

Harvest on public hunting areas in the entire zone was 3,590 or 16 percent of the total take (Table 4). Union county public areas led with 1,720 birds or 26 percent of the county harvest.

As mentioned earlier there has been an increase in use around Crab Orchard (Table 2). This trend is also apparent in the harvest since 1968 when percentage composition of the harvest at Crab Orchard was 18 percent and since then has increased to 30 percent (Table 5). Union County remains about the same while the decrease in percentage of harvest is apparent at Horseshoe Lake.

Population Status

In recent years population status has been reviewed looking at the whole Mississippi Valley Population. This includes birds in Kentucky, Missouri and perhaps Indiana. In evaluating quota zone activities only those concentration areas within the zone are considered. The population peaks for these areas since 1956 are presented in Figure 3.

The population peak for the three refuge areas was reached on December 14th when 209,500 Canada geese were inventoried (Figure 4). At the same time there were 18,000 birds in Ballard county, Kentucky and 500 at Rend Lake. The migration from Horicon NWR in Wisconsin was about a week later than normal with the bulk of the birds arriving by the 10th of December.

Age ratios from the harvest were lower than normal (Table 6). The age ratio was variable throughout the season as seen in Table 7. It is not within the scope of this paper to analyze the relationship of age ratios and population conditions. This report will present annual findings subject to more complete analysis and incorporation with trapping and banding data.

Literature Cited

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Table 1. Man days of hunter use and Canada goose harvest in the southern Illinois quota zone during the 1973-1974 season.

County	Hunter Days	Percent		Percent		Success Rate
		By Counties	Harvest	By Permit	By Counties	
<u>Alexander (Horseshoe Lake)</u>						
Licensed Clubs	19,667	.97	9,112	.97		.46
Free Permits	664	.03	326	.03		.49
Total	20,331	1.00	9,438	1.00	.41	.46
<u>Union County</u>						
Licensed Clubs	11,133	.83	5,869	.89		.53
Free Permits	2,312	.17	757	.11		.33
Total	13,445	1.00	6,626	1.00	.29	.49
<u>Williamson/Jackson (Crab Orchard NWR)</u>						
Licensed Clubs	9,108	.41	4,428	.65		.49
Free Permits	13,361	.59	2,379	.35		.18
Total	22,469	1.00	6,807	1.00	.30	.27
Grand Total	56,245	1.00	22,871	1.00	1.00	.41

Table 2. Man days of Canada goose hunter effort by counties in the southern Illinois quota zone from 1968 through 1973.

County	<u>Hunter Numbers and Percent by County</u>											
	1968	%	1969	%	1970	%	1971	%	1972	%	1973	%
Alexander	16,842	.52	15,522	.58	18,357	.47	17,838	.39	17,171	.37	19,667	.40
Union	12,324	.38	7,615	.29	12,823	.33	13,313	.29	13,232	.28	11,133	.23
Williamson/Jackson	3,219	.10	3,466	.13	7,706	.20	15,016	.33	16,167	.35	18,358 ¹	.37
Total	22,385	1.00	26,603	1.00	38,886	1.00	46,167	1.00	46,570	1.00	49,158	1.00

¹ Adjusted to conform with figures from previous years.

Table 3. Success ratios for Canada goose hunters in the southern Illinois quota zone counties from 1968 through 1973.

County	Success Ratio					
	1968	1969	1970	1971	1972	1973
Alexander	.66	.60	.60	.70	.33	.46
Union	.53	.68	.64	.54	.37	.49
Williamson/Jackson	.75	.72	.61	.38	.28	.27
All	.62	.64	.61	.54	.33	.41

Table 4. Contribution of public hunting areas to the quota zone effort and harvest during the 1973 Canada goose season.

County	Hunter Days	Percent of Total	Harvest	Percent of Total	Success Ratio
Alexander ¹	2,857	.14	875	.09	.31
Union ²	5,516	.41	1,720	.26	.31
Williamson/Jackson ³	8,590	.38	995	.11	.12
Total	16,963	.30	3,590	.16	.21

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 5. Canada goose harvest by county in the southern Illinois quota zone from 1968 through 1973.

County	1968		1969		1970		1971		1972		1973	
	Harvest	%	Harvest	%	Harvest	%	Harvest	%	Harvest	%	Harvest	%
Alexander	11,104	.52	9,608	.47	11,123	.40	11,865	.48	6,042	.38	9,438	.41
Union	6,527	.31	5,591	.28	8,430	.31	7,456	.30	5,236	.33	6,626	.29
Williamson/Jackson	3,746	.18	5,109	.25	7,927	.29	5,251	.21	4,544	.29	6,807	.30
Total	21,377	1.01	20,308	1.00	27,480	1.00	24,572	.99	15,822	1.00	22,871	1.00

Table 6. Age ratios of Canada geese harvested on the Horseshoe Lake and Union County public hunting area 1965 through 1973.

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

Table 7. Age ratios of Canada geese harvested in Union County at the Public Shooting Area and from private clubs for various periods throughout the 1973 season.

Union County Hunting Area			Commercial Picking Plant		
Date	Sample Size	Adults:Immatures	Date	Sample Size	Adults:Immatures
11/19-12/11	274	1:3.35	11/19	134	1:2.12
			11/20	94	1:1.81
12/13-12/21	230	1:1.25	11/21-12/17	203	1:0.78
12/21-12/30	198	1:1.75	12/17-1/3/74	228	1:0.54
1/1/74-1/20	233	1:0.94	1/4/74-1/20	161	1:1.01
Total	935	1:1.62		820	1:0.95

Weekends and Holidays

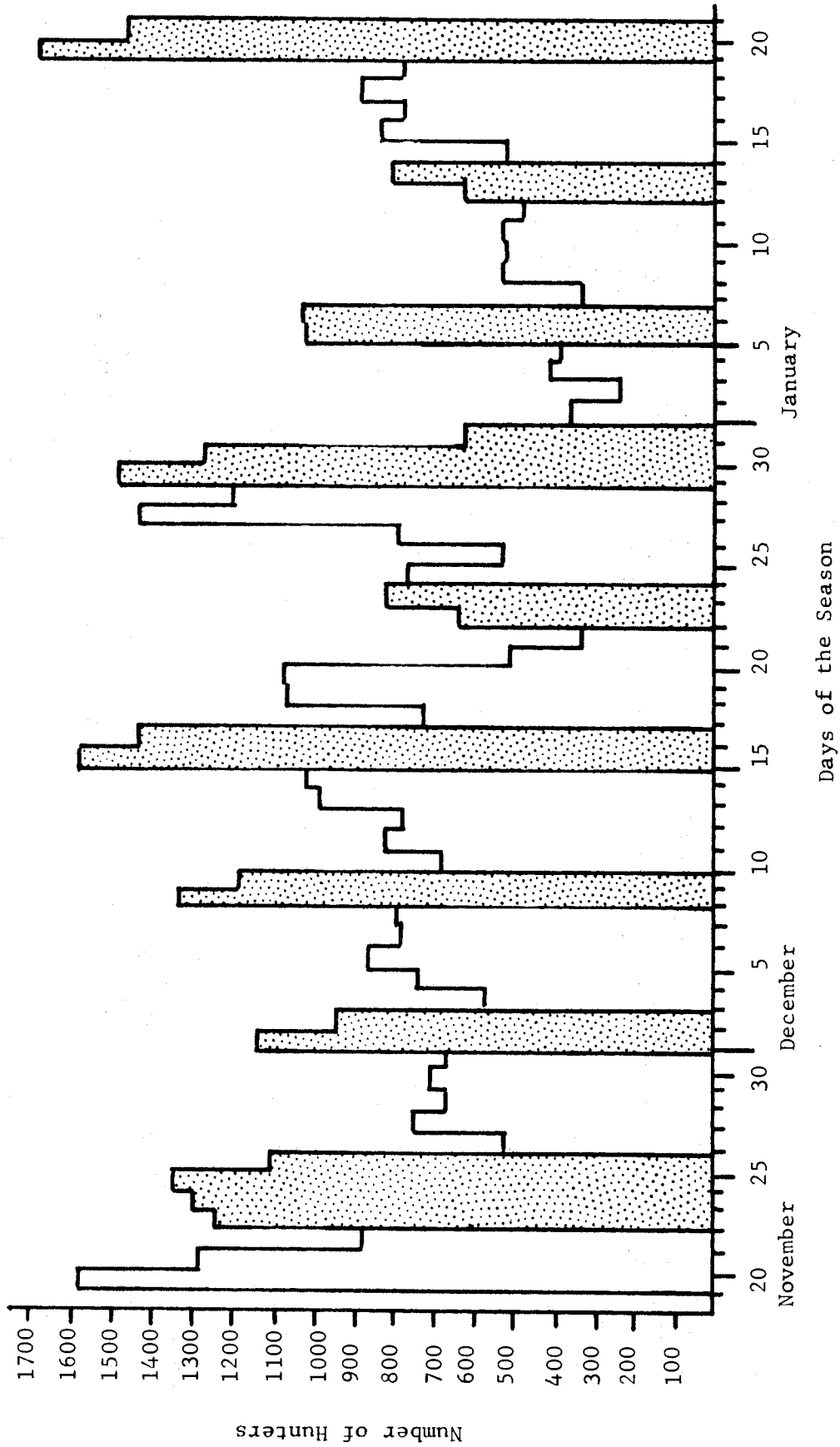


Figure 1. Progression of daily hunting pressure in all counties of the southern Illinois quota zone during the 1973 Canada goose season.

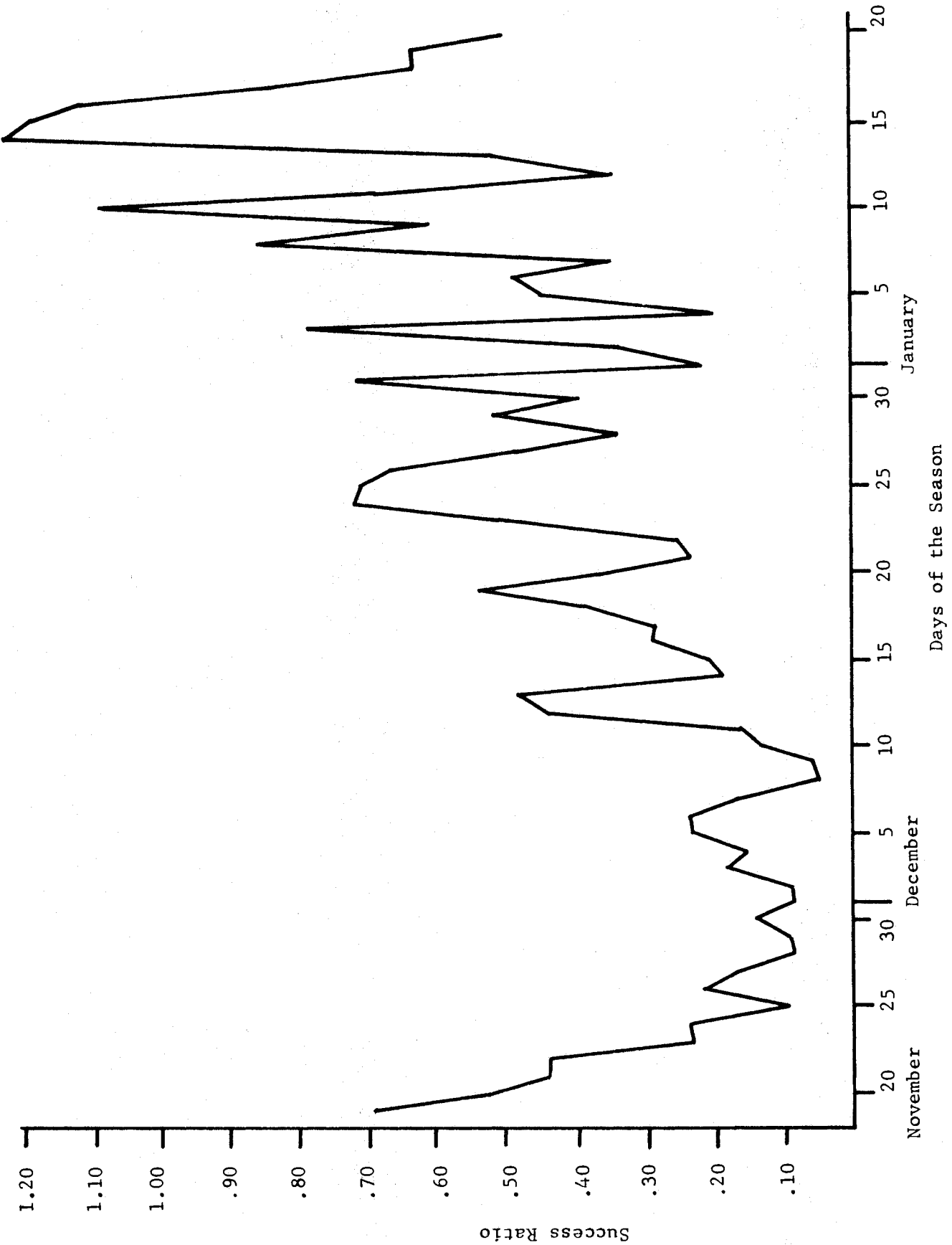


Figure 2. Progression of hunter success ratio for all counties in the southern Illinois quota zone during the 1973 Canada goose season.

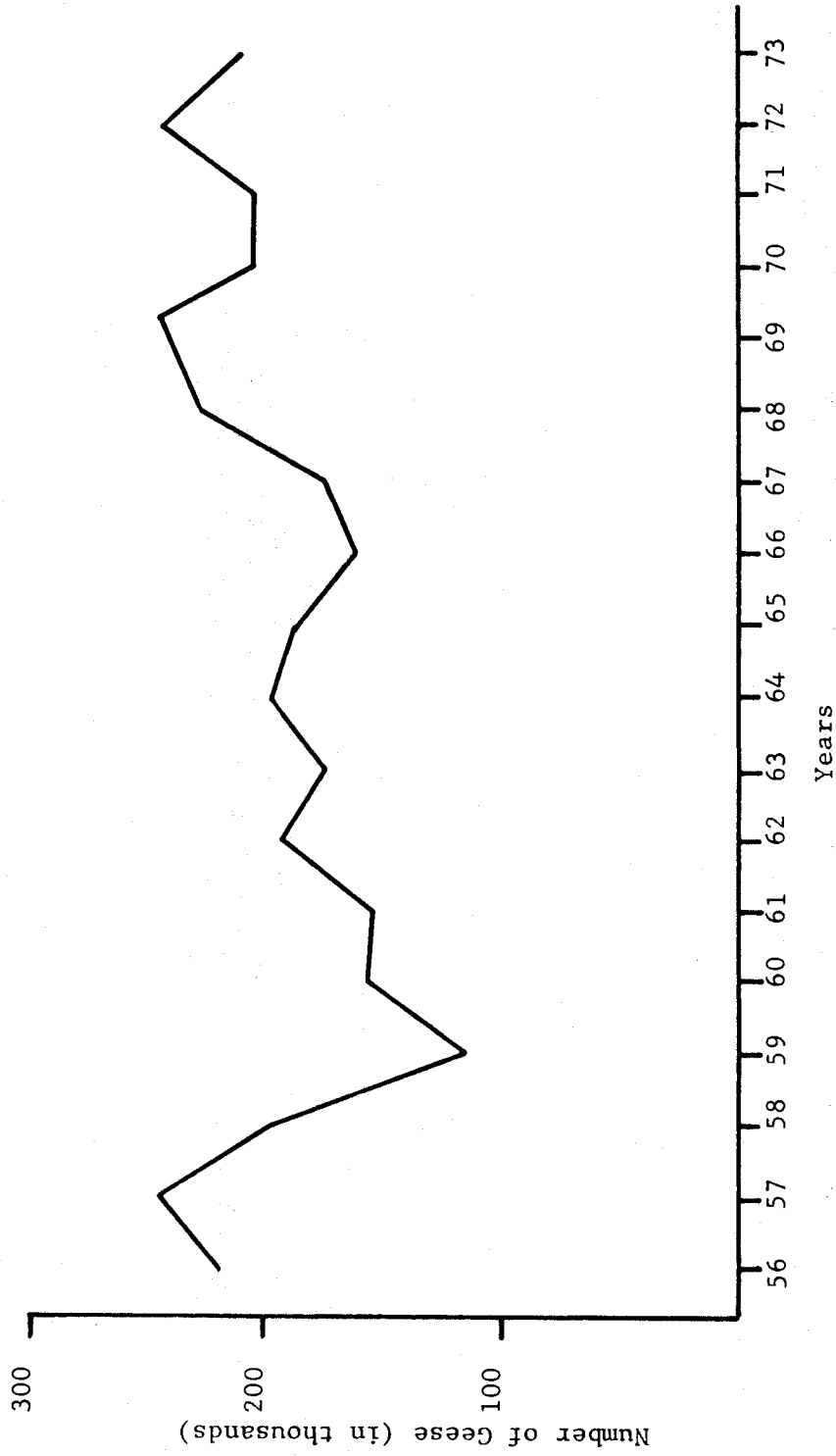


Figure 3. Peak populations of Canada geese at the southern Illinois quota zone concentration areas of Horseshoe Lake, Union County and Crab Orchard NWR from 1956 through 1973.

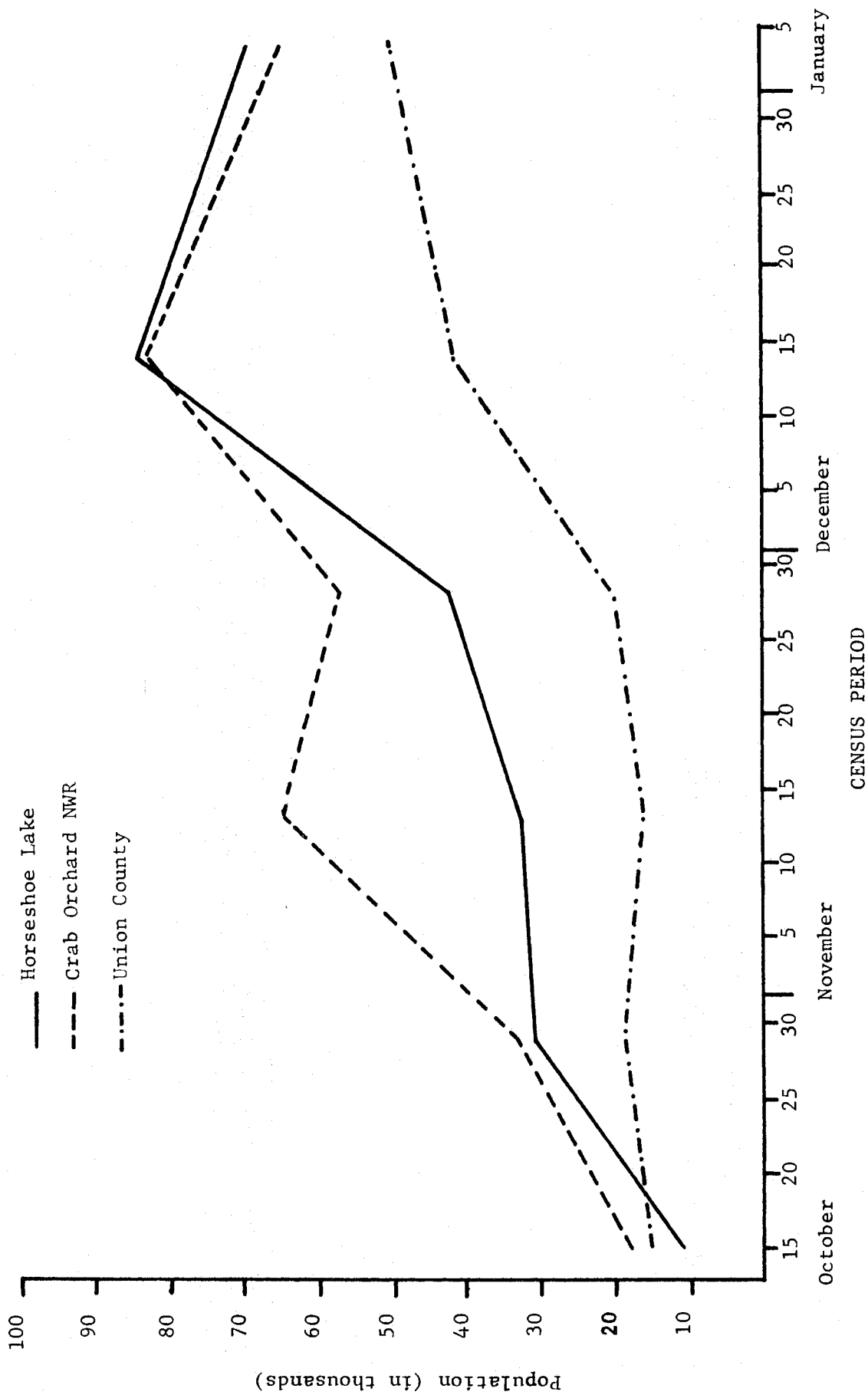


Figure 4. Canada goose populations throughout the fall by refuge areas in southern Illinois, 1973.