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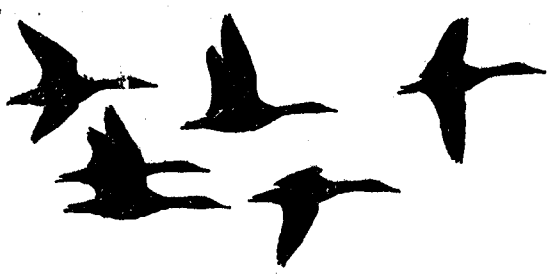
Illinois Department of Conservation

Division of Wildlife Resources

MIGRATORY BIRD SECTION

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HUNTER USE AND HARVEST ON PUBLIC WATERFOWL AREAS DURING 1974

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Abstract: During the 1974 duck season thirty-nine public waterfowl hunting areas in Illinois were surveyed. There were 52,599 ducks harvested during 80,116 hunter trips for an average daily success ratio of .66. This represents a harvest increase of 30 percent, an increase of hunter trips of eight percent and an average daily success increase of 20 percent over the 1973 season. Duck populations were somewhat lower than normal except in southern Illinois which maintained high numbers. The Wednesday noon opening appeared to increase total hunter trips over the first five days of the season.

INTRODUCTION

This past waterfowl season was the second season in which waterfowl harvest data and hunter use data were collected for all major public hunting areas in Illinois and it will be the first year these data have comparative value. In comparing last years harvest on public areas to the U. S. Fish and Wildlife Service projection for the total harvest from Illinois indicates that 12 percent of the harvest and 12 percent of waterfowl hunting takes place on publically managed lands. Consequently these data from the public areas provide a substantial and readily obtainable sample to gauge the success of the season in general and the effectiveness of the individual areas.

An effort of this type requires the interest and cooperation of a considerable number of people who spent long and often boring hours on car counts, bag checks, or checking stations. We wish to thank area and district biologist and their staffs for their participation.

Personnel of the U. S. Fish and Wildlife Service at the Crab Orchard and Chautauqua National Wildlife Refuges kindly provided estimates of harvest and use data from their areas. The U. S. Forest Service made available their estimates of Oakwood Bottoms and LaRue Scatters.

METHODS

Hunter use and harvest data were obtained by four methods. The most accurate is of course check stations where complete tallies of hunters and their bag is required. On certain areas daily car counts are conducted and randomly selected access points are bag checked. A combination of the bag checks and car counts provide the basis for projecting daily hunter number, harvest and success. A third

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method uses the car count in conjunction with windshield mail cards. The cards yield hunters per car, number and species of ducks taken and these become the vehicle of projection. Generally this technique was employed at prescribed intervals throughout the season on representative weekends and weekdays. On smaller areas simple estimates were made based on general knowledge of the area, past surveys or partial checks. Techniques utilized for each area are identified in Table 1.

Both car counts and mail surveys have the disadvantage of being less reliable than a check station. These problems arise from never knowing for certain if all cars were indeed counted. Also, there is a memory and/or prestige bias for those responding by mail. Apparently those responding have been more successful than others and many tend to inflate their harvest reports. This is offset to an unknown degree by those who would hide their success by not responding (Personnel Communication from Bob Williamson). For the purpose of this report, no efforts were made to adjust the figures to compensate for these factors since the sampling error and reporting bias is not known. The complete description of projection formulas for sample data are not presented here but are on file at the Union County Field Office.

Population data are taken from aerial inventories. The primary census is financed by this Department and conducted by personnel of the Illinois Natural History Survey. This weekly count covers the Mississippi River from Rock Island to Alton and the Illinois from Spring Valley to the mouth. Counts in southern Illinois are more random and usually in conjunction with Canada goose inventories.

RESULTS AND DISCUSSION

For simplicity of discussion this section is broken into: hunter use, harvest, hunter success, population and migration and the mid-week opening.

Hunter Use

The results of the 1974 survey indicated there were 80,116 man days of hunter effort expended hunting waterfowl on 39 public areas in Illinois (Table 1). This is an eight percent increase in use over 1973 (Kennedy et al, 1974) primarily as a result of a migration favorable to Illinois and subsequent good hunting.

The pattern of hunting pressure was about the same as most years in that it started high, remained substantial until the first of December when freezing weather began to limit the habitat in northern Illinois. In southern Illinois pressure remained high as duck populations and success kept many hunters afield.

Notable changes in hunting pressure occurred at Rend Lake and Oakwood Bottoms where harvest was much increased from 1973 primarily as a result of good food crops. Carlyle retained a high use but dropped some 14 percent from the previous year. Of the 39 areas 20 had increase in pressure from 1973. (Table 1) The decline in hunter use was on some areas not necessarily due to poor hunting but often low water as was the case in Pool 13.

Added to the list this fall were Sangchris Lake where hunting was permitted for the first time (to be the subject of a later report) and the lands near Baldwin Reservoir. Both proved to supply a demand for waterfowl hunting in their respective areas.

Harvest

The 1974 harvest of 52,599 ducks from public waters was an increase of 30 percent from 1973 (Table 1). Rend Lake, Oakwood Bottoms, Carlyle and Batchtown, the four leaders in ducks harvested, took 21,412 birds or 41 percent of the public area harvest. The 10 best areas accounted for 62 percent of this harvest. Twenty three of the 39 areas showed an increase in harvest from 1973.

The importance of food on an area is well demonstrated by the increases in harvest of some areas. In 1973 Oakwood Bottoms and Mermet had little food and similar harvest. But in 1974 a good crop of acorns helped account for a 217 percent increase in harvest at Oakwood. Mermet personnel were able to get in a good crop of millet and sorghum and their harvest increased 141 percent.

The migration, food and water conditions favored southern Illinois areas. Proportionately there are more public waterfowl acres per hunter in southern Illinois than upstate. Therefore, the increase in harvest came mostly from the south. We would not expect the statewide harvest projected by the Fish and Wildlife Service to reflect this much increase.

Hunter Success

Hunter success per man days effort of public areas was .66, 20 percent better than the .55 recorded in 1973 (Table 1)

This figure of average daily success is misleading to the extent that almost all areas of the state had periods of extremely good hunting. The statistic does reveal the best place to harvest ducks, day in and day out in Illinois. The leader in this category for the second year was Potters Marsh. Other areas worthy of mention and their respective average daily success ratios are: Pool 17 - 1.00, Grass Lake - .98, Pool 18 and Sparland - .97. The success ratio of .86 at Rend Lake is also note worthy because of the volume of hunters.

It is generally regarded that areas with the greatest amount of restriction in the form of limits on hunter numbers, spacing and etc. will sustain the greatest success and quality experience per hunter. Areas such as Rend Lake, Carlyle Lake and Oakwood Bottoms, that have the least amount of restriction may be cause to question this theory.

Populations and Migration

In comparing the 1974 migration (Figure 1) to the recent five year average (Kennedy and Arthur, 1973) this fall appeared to have fewer mallards during the last half of the season on the Illinois and Mississippi Rivers. Other puddle ducks were about normal in number but remained on the river areas longer than normal. Diving duck flights were down. Table 2 reflects the sporadic nature of the southern Illinois counts. Ducks in southern Illinois are almost impossible to count as indicated by the back to back flights on November 21 and 22 (Table 2). The general consensus is that there were a substantial number of ducks in southern Illinois from early November until the end of the season.

Sex ratios in the bag continued high to drakes as a point system preference and although no data were available the vulnerability of birds suggest a high percentage of immatures in the population.

Mid-Week Season Opening

An option was accepted in 1974 that allowed five extra days of season length provided the season began on Wednesday noon. The purpose of the option was to lessen the volume of hunters found with a weekend opening and to distribute pressure evenly over the five day period.

To evaluate its effects we compared areas, Rend and Carlyle Lakes, with no limit on hunter numbers and no afternoon hunting to areas, Batchtown and Godar/Diamond, which have a fixed limit on hunters and afternoon shooting (Table 3 and Fig. 2). It should be pointed out that comparing a sequence of seasons is difficult because of changes in migrations and habitat conditions. All areas show an increase in hunters for the comparable first four or five days of the season (Table 3). Some of the differences from previous years can be attributed to success as with Batchtown in 1972 (Fig. 2). The daily distribution suggests that the Wednesday or Thursday opening attracts hunters slightly less than a Saturday opening but does not appreciably reduce the pressure on Saturday or Sunday. Consequently this type of opening accounts for more man days of hunting opportunity than does a comparable number of days with a Saturday opening. During the first few days the harvest appears to be a function of the numbers of hunters in the field and therefore would be somewhat higher than the mid week opening. This early increase in harvest and opportunity plus five additional days makes this a more liberal option.

Literature Cited

- Kennedy, D. D. and G. C. Arthur. 1973. Criteria for selection of Illinois waterfowl season dates. Illinois Dept. Conservation, Migratory Bird Sect., Periodic Rpt. No. 5. 32pp.
- _____, G. J. Senn and G. C. Arthur. 1974. Hunter use and harvest on public waterfowl areas during 1973. Illinois Dept. Conservation, Migratory Bird Sect., Periodic Rpt. No. 6. 6pp.

Table 1. Hunter Use, Harvest and Success from Public Waterfowl Areas in Illinois during 1974.

| Area | Hunting Pressure | | Harvest | | Success Per Hunter Efforts | |
|-------------------------------|------------------|-------------------------|-----------|-------------------------|-----------------------------|-------------------------|
| | Hunters | % Change From 1973 Rank | Harvested | % Change From 1973 Rank | Average Daily Success Ratio | % Change From 1973 Rank |
| Rend Lake ² | 8,485 | +41 | 7,331 | +93 | .86 | +37 |
| Oakwood Bottoms ² | 8,003 | +92 | 5,651 | +217 | .71 | +65 |
| Carlyle Lake ^{2,5} | 7,076 | -14 | 4,418 | -22 | .62 | -09 |
| Batchtown ¹ | 5,682 | +19 | 4,012 | +19 | .71 | +01 |
| Stump Lake ¹ | 3,715 | -10 | 1,871 | -27 | .50 | -19 |
| Miss. R. Blinds ³ | 3,437 | +06 | 1,546 | +89 | .45 | +80 |
| Godar/Diamond ¹ | 3,434 | +33 | 2,862 | +36 | .83 | +02 |
| Marshall County ¹ | 2,332 | -09 | 1,007 | +02 | .43 | +34 |
| Mermet ¹ | 2,293 | +55 | 1,394 | +141 | .61 | +56 |
| Pool 18 ³ | 2,168 | -28 | 2,095 | +41 | .97 | +94 |
| Sangchris ¹ | 2,115 | --- | 1,431 | --- | .68 | --- |
| Pool 13 ³ | 2,058 | -03 | 1,651 | -34 | .80 | -32 |
| Crab Orchard NWR ⁴ | 2,000 | +300 | 1,200 | +860 | .60 | +140 |
| Glades ¹ | 1,965 | +38 | 1,076 | +96 | .55 | +41 |

1. Check station
2. Car counts/bag check
3. Car counts/mail cards
4. Estimate
5. Preliminary figures
6. Adjusted to compensate for new areas added in 1974

Table 1. Hunter Use, Harvest and Success from Public Waterfowl Areas in Illinois during 1974. (Continued)

| Area | Hunting Pressure | | Harvest | | Success Per Hunter Efforts | |
|------------------------------|------------------|-------------------------|-----------|-------------------------|-----------------------------|-------------------------|
| | Hunters | % Change From 1973 Rank | Harvested | % Change From 1973 Rank | Average Daily Success Ratio | % Change From 1973 Rank |
| Sanganais ¹ | 1,814 | -30 | 1,270 | -9 | .70 | +30 |
| Woodford County ¹ | 1,789 | +33 | 894 | -13 | .50 | -35 |
| Calhoun Point ¹ | 1,620 | -05 | 721 | -29 | .45 | -24 |
| Pool 17 ³ | 1,523 | -01 | 1,030 | -05 | .68 | -03 |
| Quincy Bay ^{1,5} | 1,500 | +15 | 900 | +13 | .60 | -03 |
| Spring Lake ¹ | 1,428 | +02 | 638 | +56 | .45 | +55 |
| Will-Grundy ³ | 1,296 | +14 | 896 | +136 | .69 | +82 |
| Pool 16 ³ | 1,273 | -04 | 760 | -20 | .60 | -13 |
| Sparland ³ | 1,207 | +16 | 1,171 | +174 | .97 | +137 |
| LaRue ⁴ | 1,200 | +15 | 400 | +48 | .33 | +32 |
| Pool 20 ⁴ | 1,100 | +10 | 330 | +65 | .30 | +50 |
| Pool 12 ³ | 1,038 | +18 | 1,042 | +96 | 1.00 | +64 |
| Baldwin ³ | 1,020 | --- | 686 | --- | .67 | --- |
| Rice Lake ¹ | 967 | -61 | 318 | -60 | .33 | -34 |

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Table 1. Hunter Use, Harvest and Success from Public Waterfowl Areas in Illinois during 1974. (Continued)

| Area | Hunting Pressure | | Harvest | | Success Per Hunter Efforts | | |
|----------------------------------|------------------|-------------------------|-----------|-------------------------|-----------------------------|-------------------------|----|
| | Hunters | % Change From 1973 Rank | Harvested | % Change From 1973 Rank | Average Daily Success Ratio | % Change From 1973 Rank | |
| Illinois R. Blinds ³ | 950 | +10 | 456 | +111 | .48 | +92 | 20 |
| Grass Lake ³ | 880 | -51 | 859 | +141 | .98 | +390 | 3 |
| Anderson Lake ¹ | 871 | +05 | 430 | +65 | .49 | +29 | 19 |
| Wm. Powers ³ | 853 | -22 | 410 | +49 | .48 | +92 | 20 |
| Potters Marsh ³ | 725 | -52 | 901 | -51 | 1.24 | ne | 1 |
| Bluff Lake ⁴ | 525 | +75 | 368 | +268 | .70 | +112 | 9 |
| Chautauqua ⁴ | 500 | -03 | 200 | -04 | .40 | -02 | 23 |
| Kankakee State Park ⁴ | 410 | +07 | 70 | +40 | .17 | +31 | 28 |
| Lake Smississippi ⁴ | 400 | ne | 80 | ne | .20 | ne | 27 |
| Shelbyville ³ | 384 | -52 | 204 | -31 | .53 | +43 | 17 |
| Pool 14 ⁴ | 80 | -05 | 20 | -05 | .25 | ne | 26 |
| Total | 80,116 | +08 ⁶ | 52,599 | +30 ⁶ | .66 | +20 | |

1. Check station
2. Car counts/bag check
3. Car counts/mail cards
4. Estimate
5. Preliminary figures
6. Adjusted to compensate for new areas added in 1974

Table 2. Aerial inventories of ducks on southern Illinois areas during 1974.

| Area | Date | | | | | |
|----------------|-------|--------|--------|--------|--------|--------|
| | 10/30 | 11/7 | 11/21 | 11/22 | 12/2 | 12/3 |
| Horseshoe Lake | | | 29,000 | 8,700 | | |
| Mermet | | | 3,500 | 1,800 | | |
| Rend Lake | | | 20,000 | 7,795 | 20,000 | |
| Baldwin Lake | | | | 11,700 | | |
| Carlyle Lake | | | 18,000 | 9,160 | 45,000 | |
| Sangchris Lake | 9,341 | 18,290 | | 22,000 | | 78,000 |
| Union County | | | 10,000 | 1,020 | | |
| Crab Orchard | | | 8,800 | 4,625 | | |

Table 3. A summary of hunter numbers for comparable opening days of the season from 1972 through 1974.

| Area | Year 1972 | Year 1973 | Year 1974 |
|----------------------------|--------------|--------------|--------------|
| Rend Lake ¹ | ---- | 796 | 912 |
| Carlyle Lake ¹ | 2,325 | 1,592 | 1,855 |
| Batchtown ² | 940 | 552 | 963 |
| Godar/Diamond ² | 453 | 314 | 498 |

1 No limit on hunter numbers and did not hunt the opening 1/2 day of 1974. Figures cover 4 days.

2 Limit on hunter numbers and did hunt afternoon of first day, 1974. Figures cover 5 days.

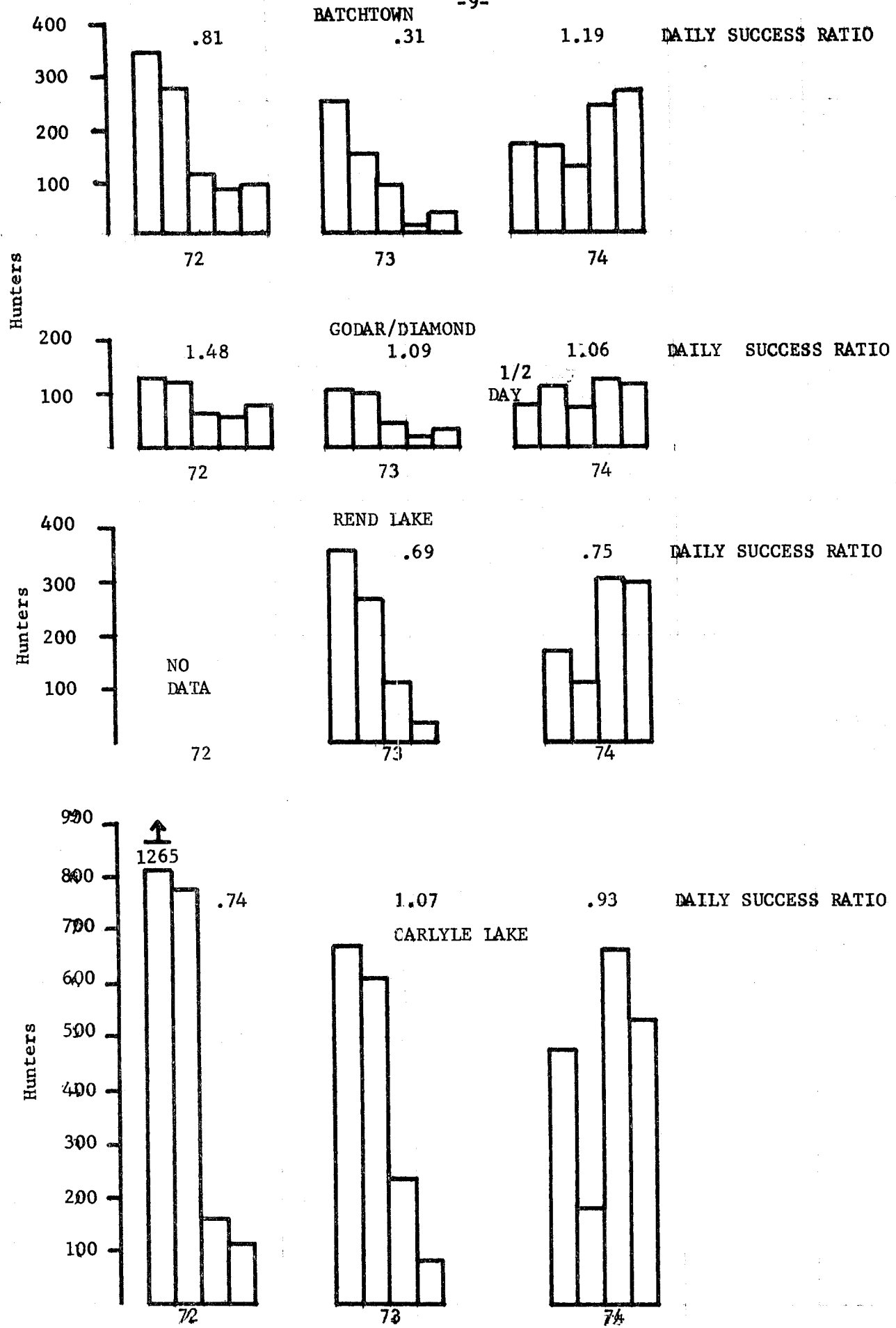


Figure 2. A comparison of hunter use for the first five days of the season for Batchtown, Godar/Diamond, (limited hunters) Carlyle and Rend Lakes (unlimited hunters) for 1972 through 1974.

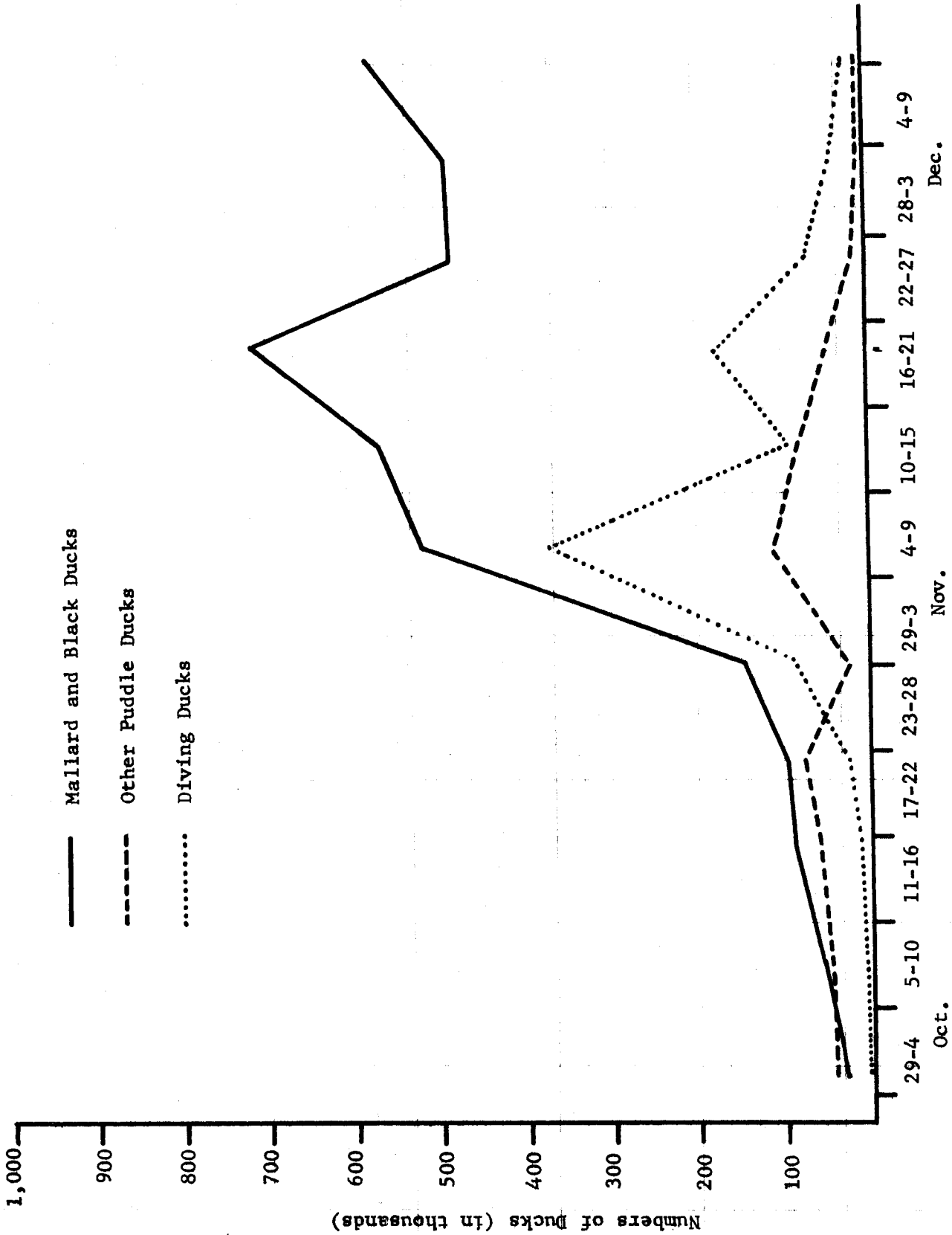


Figure 1. Populations and progression of migration on the Illinois and Mississippi Rivers through the 1974 hunting season.