

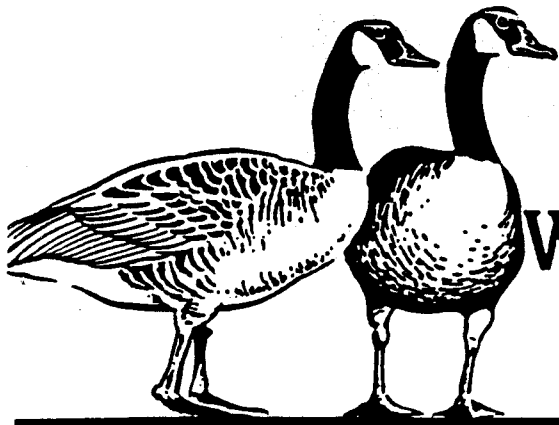


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WATERFOWL PROGRAM

ILLINOIS DEPARTMENT OF CONSERVATION

DIVISION OF WILDLIFE RESOURCES

WATERFOWL HARVEST AND HUNTER USE IN THE REND LAKE QUOTA ZONE DURING THE 1991 WATERFOWL SEASON

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Abstract: Rend Lake and the surrounding area in Franklin and Jefferson counties comprise the Rend Lake Quota Zone. Hunter use and harvest at Rend Lake are determined from hunter registration sheets. Hunters are required to register before and after each day's hunt. The known goose harvest is then used as a percentage to project total harvest in the two counties. Rend Lake is assigned a harvest quota equal to 15% of the statewide Canada goose harvest allocation. The statewide Canada goose harvest allocation was 142,200 in 1990 and increased 2% to 144,800 in 1991. The Rend Lake quota was 21,300 in 1990 and increased 2% to 144,800 in 1991. The Rend Lake quota was 21,300 in 1990 and increased 2% to 21,700 in 1991. The goose season at Rend Lake opened 9 November and closed 84 days later on 31 January 1992. The daily bag limit was 3 Canada geese per day for the entire season. In 1991, the duck season at Rend Lake opened 9 November and closed 30 days later on 8 December. A total of 7,545 ducks (4,159 mallards), 5,032 Canada geese and 54 snow geese were harvested by waterfowl hunters on the public hunting areas. A projected harvest estimate of 14,377 Canada geese or 66% of the assigned quota was harvested in the Rend Lake Quota Zone. Waterfowl hunters spent a total of 18,553 days afield (27% greater than 1990) on the public hunting areas at Rend Lake. The duck harvest increased 78% while the goose harvest increased 64%. Bag limits (conventional) and season length did not change in 1991, however, shooting hours changed from sunrise to one-half hour before sunrise. Duck hunters reported a success rate of .96 ducks per trip while goose hunters reported a .39 success rate after the close of the duck season. Access areas which recorded the highest duck harvest included: Cottonwood (1,445), Waltonville East (922), Silo (902), Dareville (857), Bonnie Camp (755), and Casey Fork Dam (519). Goose hunters were the most successful at Turnip Patch (1,031), Cottonwood (636), Jackie Branch (612), Ina Boat Ramp (382), Casey Fork Dam (342), and Whistling Wings (301). Canada goose numbers at Rend Lake in 1991 reached a record December high of 165,000 compared to 125,000 in 1990 and 18,000 in 1989. Canada goose numbers peaked at 165,000 on 10 December 1991.

INTRODUCTION

Rend Lake is one of the largest and most diverse waterfowl management areas in Illinois, offering excellent hunting opportunities for both ducks and Canada geese. Waterfowl harvest at Rend Lake has been monitored annually since 1975. In 1979, waterfowl hunters using Rend Lake public access areas were required to register and report their daily harvest. The registration system was developed to determine hunter use and harvest at Rend Lake. This technique has proven to be reliable and accurate since its inception. Commercial goose clubs on private lands in Jefferson and Franklin counties are required to obtain a license and submit daily hunter registration and harvest sheets at the end of the hunting season. Prior to the 1982 season, noncommercial goose hunting areas were also required to register hunters and report harvest. Since 1982, the Canada goose harvest on private land in the surrounding area has been derived from the Illinois Waterfowl Hunter Questionnaire Survey. This statewide survey has been conducted since 1981 and will continue on an annual basis.

Rend Lake and the surrounding area in Franklin and Jefferson counties were designated as a Mississippi Valley Population (MVP) Canada goose harvest quota zone in 1986. The creation and protection provided by the quota zone has allowed for liberalization of harvest regulations while preventing an overharvest in a high concentration goose area.

The Rend Lake Wildlife Management Area is a cooperative project between the U.S. Army Corps of Engineers (COE) and the Illinois Department of Conservation (DOC). The project consists of approximately 16,000 acres of land and water in Jefferson and Franklin counties. Implementation of the waterfowl harvest and hunter use survey was partially funded by Pittman-Robertson Project W-83-D.

Employees of the Division of Wildlife Resources, Division of Lands, and the COE assisted in the distribution and collection of hunter registration sheets in 1991.

METHODS

Waterfowl harvest and hunter use at all Rend Lake public access areas (40) were monitored using the mandatory registration system. A registration box was placed at each hunter access area around the lake as well as the Big Muddy and Casey Fork Management Areas. Hunters were required to register before hunting and report their daily harvest by number and species following each hunt. Registration sheets were collected daily and the number of hunters and harvest by species were totaled for individual access areas and for each day of the season.

Canada goose harvest and hunter activity on private land surrounding Rend Lake were estimated using three different methods. Commercial licenses were issued for all areas where payment was received for goose hunting privileges. On these commercial clubs, all hunters were required to register before hunting and report their harvest at the end of each hunt. Registration sheets were submitted by club owners at the end of the season to the Union County Refuge Office for tabulation of harvest and hunter use. The goose harvest on other private lands surrounding Rend Lake in Franklin and Jefferson counties was determined from the Statewide Waterfowl Hunter Questionnaire Survey. This was conducted after the 1991 waterfowl season (Anderson 1992). Finally, the projected total harvest in the quota zone was estimated using the mean reported harvest on the public hunting areas in past years. Analysis of the Canada goose population and harvest data at Rend Lake over the past five years revealed that hunters on the public hunting areas have reported a consistent 35% of the total goose harvest in the Rend Lake Quota Zone. This percent was then used as a base to project total harvest throughout the season in the quota zone. Goose harvest on the public hunting areas was tabulated daily by DOC staff at the Mt. Vernon Game Farm. Projected harvest in the zone was determined and harvest update information was forwarded to the Rend Lake COE office, where it was provided to the public throughout the season by a recorded telephone message.

Canada goose populations at Rend Lake and other wintering areas in southern Illinois were monitored weekly by aerial inventories starting 15 October and continuing to 5 February. DOC biologists conducted the inventories using Department of Transportation aircraft (Cessna 210 or 337).

RESULTS AND DISCUSSION

The projected fall flight for MVP Canada geese in 1991 was estimated at 1.3 million (1.3 million in 1990) which resulted in continued liberalization of harvest regulations. The Canada goose harvest allocation for Illinois increased from 142,200 in 1990 to 144,800 in 1991. Season length in the quota zone increased from 70 days in 1990 to 84 days in 1991. Similarly, season length outside the quota zone (southern zone) increased from 70 days in 1990 to 84 days in 1991. The daily bag limit for Canada geese was 3 per day for the entire season.

The Rend Lake Quota Zone annually receives 15% of the statewide Canada goose harvest allocation. The harvest quota assigned to Rend Lake increased (2%) from 21,300 in 1990 to 21,700 in 1991. The goose hunting season opened 9 November and closed 31 January.

Above normal spring precipitation resulted in improved habitat conditions throughout most of the production areas in the parklands

and prairie. Many wetland basins were recharged while others had soil moisture deficits reduced so that future precipitation would flood wetland basins. Although many basins were recharged, the lack of upland nesting cover surrounding many wetlands will reduce their value to nesting waterfowl. Several years of normal precipitation should result in an increase in the number of wetland basins and adjacent nesting cover. Reduction of agricultural activities as a result of increased precipitation will also contribute to restoring high quality waterfowl production areas. The July pond index in prairie Canada increased 98% and 64% from the 1990 estimate and 1961-90 average, respectively. Pond numbers in the northcentral United States also increased 30% and 15% from the 1990 estimate and 1974-90 average, respectively. The estimated breeding population of all ducks in surveyed areas was estimated at 26.5 million in 1991. This was 6% greater than 1990 (24.8 million), but well below (-19%) the 1950-90 average and the sixth lowest estimate on record. The mallard breeding population increased 1% from 5.3 million in 1990 to 5.4 million in 1991. Overall, the mallard breeding population is -27% below the 1955-90 average (Bortner et al 1991). Of the 10 major species, only 3 (wigeon, blue-winged teal and scaup) increased greater than 10% from 1990. Six species decreased from 1990 and 1 increased less than 10%. This year's fall flight index (60 million) is slightly greater than the forecast (57 million) in 1990.

Season length (30 days) and bag limits (conventional) did not change in 1991. Illinois selected one-half hour before sunrise shooting hours option for the first time since the sunrise shooting hours option was rescinded in 1989. The duck season at Rend Lake opened 9 November and closed 8 December.

Blizzard like conditions in late October and early November in Minnesota and Wisconsin resulted in large migrations of waterfowl to Illinois which significantly elevated the existing numbers of ducks. Large numbers of waterfowl were present in the southern zone during the opening weekend and entire season. A major cold front pushed through the area on opening weekend which left many areas covered with a thin layer of ice. As a result of the unusually cold weather in early November, the mallard migration through Illinois was slightly earlier than normal in recent years. Temperatures and weather patterns returned to normal later in November. Good food availability and water conditions at Rend Lake resulted in the mallard and total duck harvest increasing 43% and 78% from 1990, respectively. The major migration of Canada geese to Illinois occurred during the period of 4-10 December.

Hunter Use

Waterfowl hunters reported a record total of 18,553 days afield in 1991 (27% greater than 1990) (Table 1). The 5-year (1987-91) average was 15,379 days afield, with a minimum of 6,555 in 1976 and a maximum of 18,553 in 1991. Goose hunters were given

the opportunity to harvest geese 54 days after the close of the duck season in 1991.

Daily registration sheets revealed that 7,844 hunters (10% greater than 1990) were afield during the duck season and an additional 10,709 hunters (44% greater than 1990) pursued geese after the close of the duck season. During the duck season, the mean number of hunters per day was 262 (238 in 1990) and an average of 199 (186 in 1990) goose hunters per day were active on Rend Lake after the close of the duck season.

Public access areas receiving the highest hunting pressure included: Cottonwood (1,870), Turnip Patch (1,682), Dareville (1,113), Casey Fork Dam (986), Ina Boat Ramp (968) and Whistling Wings (956) (Figure 1).

Fourteen licensed commercial goose clubs in the Rend Lake Quota Zone reported a total of 2,796 days afield in 1991 (52% greater than 1990). The Statewide Waterfowl Hunter Questionnaire Survey indicated that a total of 6,500 hunters (7% less than 1990) spent 43,800 days afield (11% less than 1990) in the Rend Lake Quota Zone (Anderson 1992).

Harvest

Hunters reported a total harvest of 7,545 ducks (78% greater than 1990) at Rend Lake during the 1991 season (Table 2). Mallards comprised 55% of the harvest, wood ducks 21%, green-winged teal 6%, and black ducks 4%. The 1991 mallard harvest (4,159) was 48% greater than the 1990 harvest (2,803) and 30% greater than the 5-year (1987-91) average of 3,190. Harvest trends for dabbling ducks and diving ducks from 1987-91 are shown in Figures 2 and 3.

Access areas with the highest total duck and mallard harvest included: Cottonwood (1,445, 983), Waltonville East (922, 415), Silo (902, 569), Dareville (857, 497), Bonnie Camp (755, 466) and Casey Fork Dam (519, 256) (Figure 4). These areas accounted for 72% of the total duck harvest on the public hunting areas in 1991.

A total of 5,032 Canada geese (64% greater than 1990) were harvested on the public hunting areas at Rend Lake in 1991 (Table 3). The goose harvest is often incidental to duck hunting during the duck season. Hunters reported a harvest of 906 geese or 18% of the total during the 1991 duck season. The majority of the harvest (82%) occurred in late December and January after the close of the duck season when 10,709 hunters harvested 4,126 Canada geese. Public access areas with the highest goose harvest included: Turnip Patch (1,031), Cottonwood (636), Jackie Branch (612), Ina Boat Ramp (382), Casey Fork Dam (342), and Whistling Wings (301) (Figure 5).

Using the reported harvest rate on public hunting areas (5,032) as 35% of the total Rend Lake Quota Zone goose harvest revealed a projected harvest estimate of 14,377 Canada geese or 66% of the assigned quota. This was 7,323 geese less than the assigned quota of 21,700. The harvest estimate derived from the Statewide Hunter Questionnaire Survey after the season revealed a similar harvest estimate of 12,138 Canada geese in the Rend Lake Quota Zone (Anderson 1992). The U.S. Fish and Wildlife Service waterfowl parts survey revealed a harvest estimate of 13,414 Canada geese in the two county quota zone.

Fourteen commercial goose hunting clubs reported a total harvest of 1,193 Canada geese for the season (73% greater than 1990) (Whitton 1991).

Hunter Success

Duck hunter success at Rend Lake (Table 3) improved significantly in 1991 (.96) compared to 1990 (.59). Goose hunter success on the public hunting areas is influenced by cropping patterns, weather factors, migration chronology, and the current age structure of the population. After the close of the duck season, goose hunters reported a success rate of .39 compared to .31 in 1990. The success rate in the Rend Lake Quota Zone as determined by the Statewide Hunter Questionnaire Survey was .28 goose per hunter in 1991 compared to .18 in 1990. Goose hunter success on commercial clubs in the Rend Lake Quota Zone reported a success rate of .43 goose per hunter-trip in 1991 (.37 in 1990).

Waterfowl Population Status

Canada goose numbers at Rend Lake increased from 15,000 on 4 December to 165,000 on 10 December (Table 4). The peak number of Canada geese was recorded on 10 December when 165,000 (136,000 in 1990-91) were recorded (Table 5, Figure 6). Canada goose numbers in southern Illinois and western Kentucky in 1991-92 peaked on 24 December (583,000) (820,000 in 1990-91).

Goose use-days (GUD) at Rend Lake in 1991-92 (5.8 million) decreased from 1990-91 (7.3 million). In 1991-92, Rend Lake accounted for 5.8 million GUD (23% of the total), Union County Refuge 4.5 million GUD (18% of the total), Horseshoe Lake Refuge 6.9 million GUD (27% of the total), Crab Orchard NWR 6.5 million GUD (26% of the total), and Ballard County, Kentucky 1.7 million GUD (7% of the total). Goose use-days in southern Illinois and western Kentucky decreased from 35.9 million in 1990-91 to 25.7 million in 1991-92.

Four waterfowl surveys were conducted by the Illinois Natural History Survey between 9 October and 10 December. Duck numbers on

Rend Lake increased from 640 on 9 October and reached a peak of 12,040 on 21 November. Total duck numbers surveyed in 1991 decreased 35% from similar surveys conducted in 1990. Waterfowl surveys conducted in the Illinois River Valley revealed that total ducks peaked at 570,210 on 13 November (93% greater than 1990). Similarly, total ducks in the Mississippi River Valley also peaked on 13 November at 316,785 (11% greater than 1990). The peak number of ducks for the two river systems combined (886,995) was 53% greater than 1990 (579,000).

The peak number of mallards was reported on 21 November (7,900) compared to 13 December (13,500) 1990. Mallard numbers totaled 12,550 during the 4 surveys conducted in the fall of 1991 compared to 23,455 for the same survey period in 1990. Mallards in the Illinois River Valley peaked at 474,075 on 13 November (72% greater than 1990) and 227,295 (5% greater than 1990) in the Mississippi River Valley. The peak number of mallards on the two river systems combined (701,300) was 43% greater than 1990 (489,000).

CONCLUSIONS

Good planting conditions allowed site staff and farm tenants to provide a variety of food sources in 1991. The distribution of corn was improved which dispersed waterfowl and hunters. Additionally, the large acreage of jap millet planted on the east side of the refuge provided excellent habitat for ducks and geese. Improved management of clover (mowed 3-5 times) and wheat (combination of aerial seeded wheat over tenant soybeans and fallow wheat) has resulted in greater goose usage at Rend Lake. The Rend Lake Refuge recorded the highest peak goose population (165,000) during the fall-winter period of all the refuges in southern Illinois. Although the total number of goose use-days decreased from 1990-91, the percentage (23%) of goose use-days increased at Rend Lake. For the second consecutive year, Rend Lake ranked third in goose use-days and percentage behind Horseshoe Lake and Crab Orchard National Wildlife Refuges. No outbreaks of waterfowl diseases were detected from Rend Lake in 1991-92.

Two questionnaires were developed to determine opinions and attitudes of waterfowl hunters regarding overcrowding and the designation of a controlled goose hunting area on COE managed property on the west side of Rend Lake. Two additional questionnaires will be conducted during the fall and winter of 1992-93 to determine if additional or more restrictive regulations are needed.

The Canada goose harvest (5,032) on the state and federally managed area in 1991-92 was the highest ever recorded. Adequate food and water conditions combined with the lack of ice and snow cover precipitated in large numbers of Canada geese throughout the

season at Rend Lake. A northward migration of Canada geese occurred during 5-10 January, which significantly reduced numbers of Canada geese on the refuge, but hunter success remained steady. Approximately 66% of the harvest quota was achieved.

Many wetland basins in Canada and the northcentral United States have been recharged due to increased precipitation. Vegetation recovery and establishment will increase waterfowl (duck) production in the future if this trend continues. Liberalization of harvest regulations should only occur after fall flight estimates for ducks increase and individual species show upward trends for a specific time frame.

The large proportion of adults in the MVP should provide a fall flight in 1992 equal to or greater than 1991.

LITERATURE CITED

- Anderson, W.L. 1992. Preliminary results of the 1991 Illinois waterfowl hunting questionnaire. Illinois Dept. of Conservation, Waterfowl Program, Unpublished Rpt. 8pp.
- Bortner, J.B., F.A. Johnson, G.W. Smith, and J.B. Trost. 1991. Status of waterfowl and fall flight forecast. U.S. Fish and Wildl. Ser. 38pp.
- Whitton, R.M. 1991. Waterfowl harvest and hunter use in the Rend Lake Quota Zone during the 1990 waterfowl season. Illinois Dept. of Conservation, Waterfowl Program Periodic Rpt. No. 70. 7pp.

Table 1. Waterfowl harvest and hunter use on public hunting areas at Rend Lake, Illinois for the 1991 waterfowl season.

Public Access Areas	Hunter Use-days	Mallards	Total Harvest Ducks*	Canada Geese	Snow Geese
1. Bluegill Hole	46	0	3	13	1
2. Bonnie Camp	780	466	755	25	0
3. Bonnie South	821	79	119	153	0
4. Buck Creek	602	127	311	78	0
5. Button Bush Bay	55	2	4	4	0
6. C & E Lot	240	12	21	25	6
7. Casey Fork Dam	986	256	519	342	3
8. Casey Fork West	143	33	61	16	0
9. Cottonwood	1,870	983	1,445	636	12
10. County Line	422	8	23	72	8
11. Cypress View	270	71	143	30	0
12. Dam West	101	15	35	9	0
13. Dareville	1,113	497	857	268	2
14. Elk Prairie	134	29	36	16	0
15. Gun Creek West	151	14	24	16	0
16. Hamilton Branch	28	3	5	0	0
17. Honkers Point	722	7	24	180	4
18. Ina Boat Ramp	968	48	93	382	3
19. Ina Parking Lot	383	9	25	95	0
20. Jackie Branch	806	47	104	612	1
21. Ken Gray	362	3	8	55	0
22. Lambrusco	556	4	22	156	3
23. Mine 21	221	4	5	35	0
24. Nason North	221	58	158	43	0
25. Nason South	81	11	13	32	0
26. Pin Oak	238	143	269	48	0
27. Resort Ramp	55	0	0	21	0
28. River Road	79	22	68	3	0
29. RLCD Boat Ramp	382	15	38	91	3
30. RLCD Maintenance	124	0	4	11	0
31. Ryder Bottoms	66	10	33	0	0
32. Sailboat Harbor	142	3	16	25	0
33. Silo	916	569	902	49	2
34. Turnip Patch	1,682	63	127	1,031	9
35. Waltonville Dam	129	26	51	6	0
36. Waltonville East	882	415	922	14	1
37. Ward Branch	760	27	149	139	0
38. Whistling Wings	956	55	96	301	2
39. Willbanks Woods	3	0	2	0	0
40. Woodcock Ridge	57	25	50	0	0
Totals	18,553	4,159	7,545	5,032	54

* A total of 4 Mergansers and 1 Goldeneye was harvested.

Table 2. Harvest of ducks by species at Rend Lake, (Southern Zone), Illinois, 1984 through 1991. Data collected from hunter registration reports.

Species	1984	1985	1986	1987	1988	1989	1990	1991
<u>Dabbling Ducks</u>								
American Wigeon	198	115	142	145	54	95	77	157
Black Duck	251	113	122	179	182	261	184	304
Blue-Winged Teal	227	38	27	34	10	14	13	13
Gadwall	206	182	291	199	57	126	88	170
Green-Winged Teal	256	152	205	323	168	285	255	481
Mallard	5,002	3,273	2,964	3,915	2,556	2,519	2,803	4,159
Northern Shoveler	109	96	51	107	32	53	35	89
Pintail	98	85	62	82	23	41	35	49
Wood Duck	457	279	531	660	271	310	503	1,596
Total	6,804	4,333	4,395	5,644	3,353	3,704	3,993	7,018
<u>Diving Ducks</u>								
Bufflehead	70	52	54	35	30	27	41	56
Canvasback	42	46	15	0	0	0	1	26
Common Goldeneye	7	4	0	0	0	0	0	1
Redhead	158	70	68	24	21	14	12	36
Ring-Necked Duck	304	161	133	163	92	52	104	204
Ruddy Duck	40	27	20	17	7	13	7	28
Scaup	306	160	174	105	79	58	81	172
Total	927	520	464	344	229	164	246	527*
Total All Species	7,731	4,853	4,859	5,988	3,582	3,868	4,239	7,545

* 4 Mergansers were harvested in 1991.

Table 3. Waterfowl harvest and hunter success on public hunting areas at Rend Lake, Illinois, 1977-1991.

Year	Number of Hunters	Harvest		Hunter Success	
		Duck	C. Geese	Ducks	Geese
1977	8,377	8,748	1,630	1.04	.19
1978	12,622	9,060	4,604	.78	.36
1979	12,978	5,375	1,917	.52	.15
1980	16,134	5,493	3,508	.39	.22
1981	17,873	6,285	2,827	.46	.16
1982	14,682	6,845	1,109	.57	.08
1983	13,352	8,270	1,856	.76	.14
1984	11,050	7,724	610	.70	.06
1985	8,964	4,901	1,214	.55	.14
1986	14,300	4,859	2,042	.52	.32
1987	14,867	5,988	1,676	.63	.28
1988	14,748	3,582	4,177	.49	.43
1989	14,148	3,868	3,971	.54	.45
1990	14,580	4,239	3,068	.59	.31
1991	18,553	7,545	5,032*	.96	.39

.34 last 15 days of goose season after close of duck season

Last 23 days of goose season after close of duck season

Last 28 days of goose season after close of duck season

Last 30 days of goose season after close of duck season

Last 36 days of goose season after close of duck season

Last 40 days of goose season after close of duck season

Last 54 days of goose season after close of duck season

* An additional 54 snow geese were harvested.

Table 4. Canada goose numbers at Rend Lake through the fall and winter of 1988-1991.

Date	1988		1989		1990		1991	
	No. of Geese	Date	No. of Geese	Date	No. of Geese	Date	No. of Geese	Date
10-15-88	4,500	10-23-89	5,000	10-15-90	3,500	10-15-91	5,500	
10-24-88	7,000	10-31-89	8,000	10-22-90	5,000	10-21-91	4,000	
10-31-88	7,500	11-06-89	9,000	10-30-90	12,000	11-04-91	5,000	
11-07-88	9,500	11-13-89	12,000	11-07-90	13,000	11-13-91	6,000	
11-14-88	14,000	11-21-89	14,000	11-13-90	15,000	11-25-91	8,000	
11-21-88	7,500	11-29-89	14,000	11-19-90	12,000	12-04-91	15,000	
11-28-88	7,000	12-06-89	18,000	11-26-89	12,000	12-10-91	165,000	
12-05-88	17,000	12-11-89	14,000	12-05-90	43,000	12-16-91	145,000	
12-12-88	40,000	12-18-89	13,000	12-10-90	70,000	12-24-91	152,000	
12-19-88	72,000	12-26-89	3,000	12-19-90	80,000	01-10-92	15,000	
01-04-89	90,000	01-02-90	40,000	12-31-90	125,000	01-21-92	45,000	
01-10-89	75,000	01-08-90	90,000	01-14-91	136,000	01-27-92	60,000	
01-17-89	70,000	01-16-90	170,000	01-22-91	112,000	02-05-92	31,000	
01-23-89	135,000	01-22-90	120,000	02-04-91	90,000			
		01-29-90	85,000					

Table 5. Peak numbers of Canada geese at Rend Lake, Illinois 1971-1992.

Year	Number of Geese	Date
1971-72*	6,000	Dec. 22
1972-73	2,000	Dec. 13
1973-74	13,000	Jan. 04
1974-75	32,000	Dec. 18
1975-76	50,000	Jan. 22
1976-77	42,000	Dec. 14
1977-78	100,000	Jan. 23
1978-79	62,000	Jan. 04
1979-80	90,000	Jan. 14
1980-81	88,000	Jan. 27
1981-82	120,000	Jan. 18
1982-83	40,000	Feb. 03
1983-84	44,000	Feb. 07
1984-85	72,000	Jan. 15
1985-86	70,000	Dec. 09
1986-87	65,000	Jan. 13
1987-88	110,000	Jan. 25
1988-89	135,000	Jan. 23
1989-90	170,000	Jan. 16
1990-91	136,000	Jan. 14
1991-92	165,000	Dec. 10

* First year that Canada geese started using Rend Lake

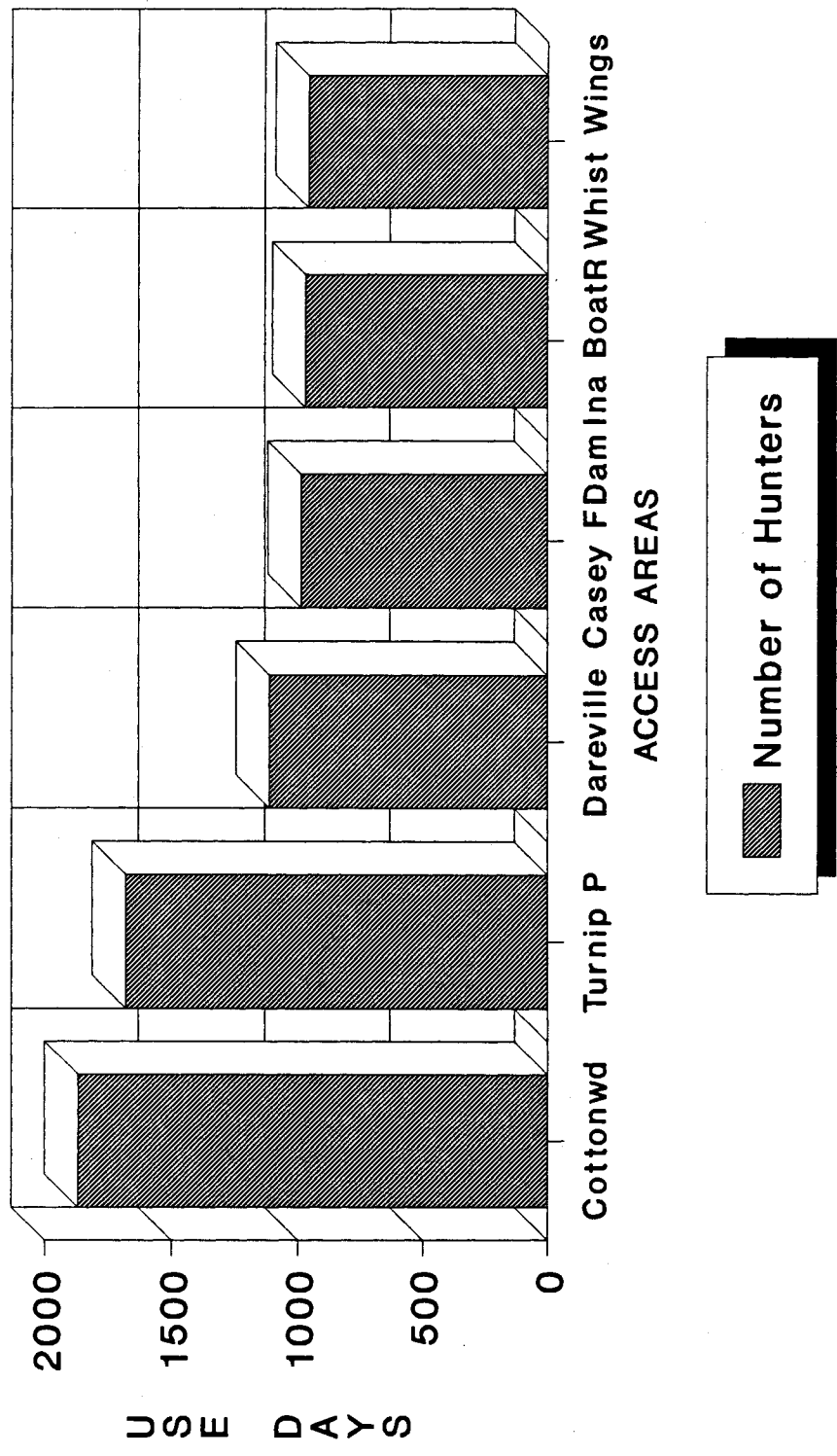


Figure 1. Number of hunter use-days at six access areas at Rend Lake during 1991.

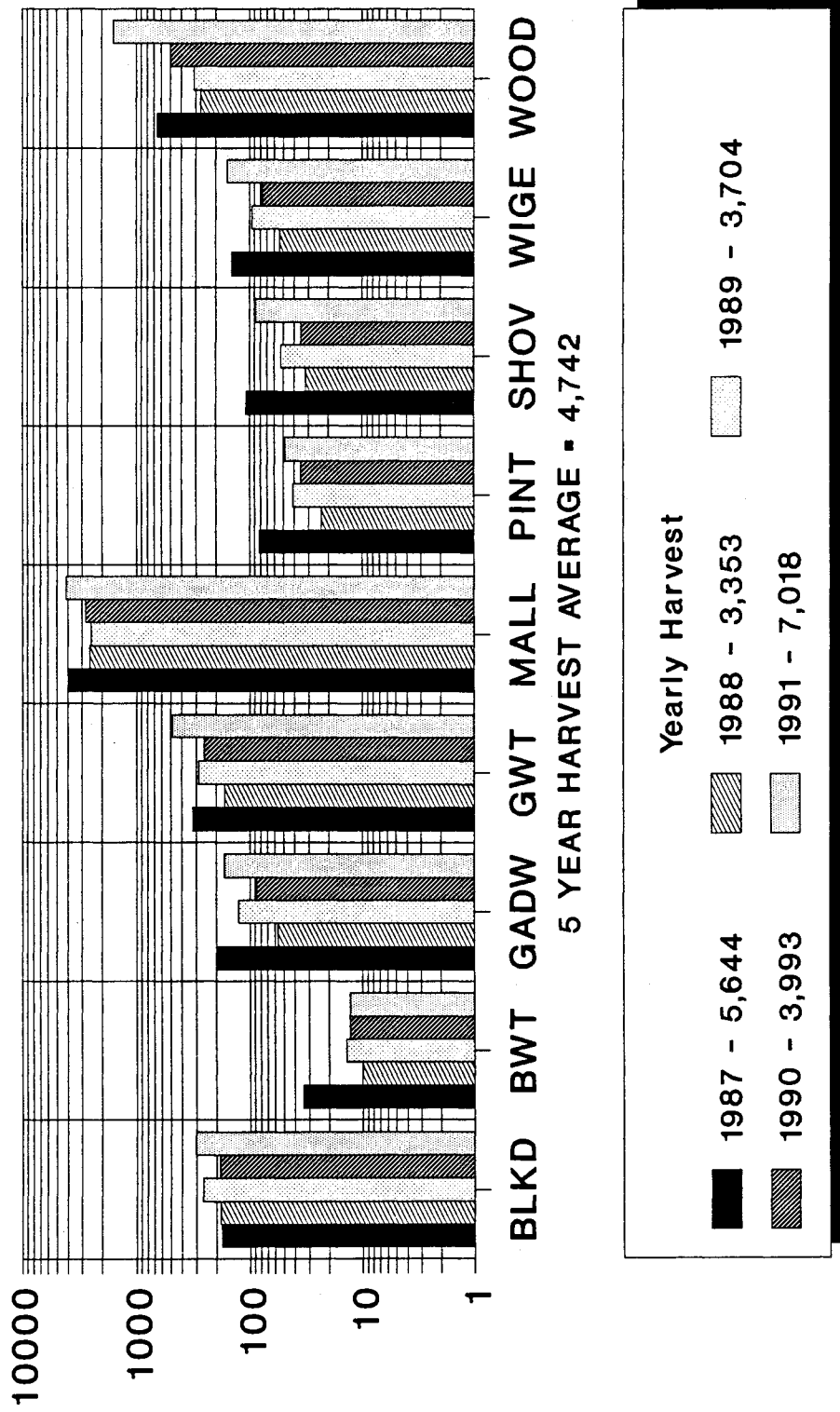


Figure 2. Dabbling duck harvest at Rend Lake from 1987-1991.

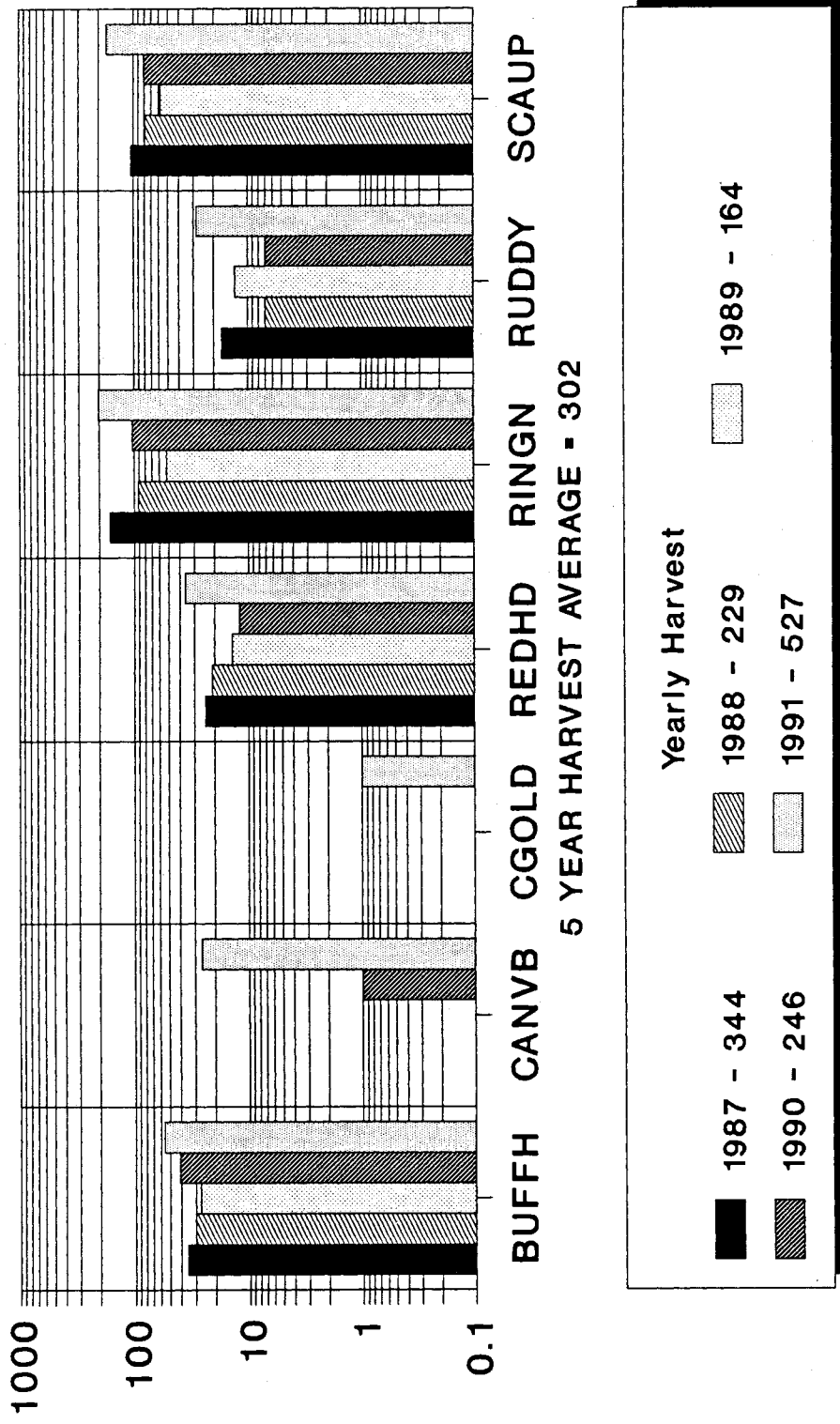


Figure 3. Diving duck harvest at Rend Lake from 1987-1991.

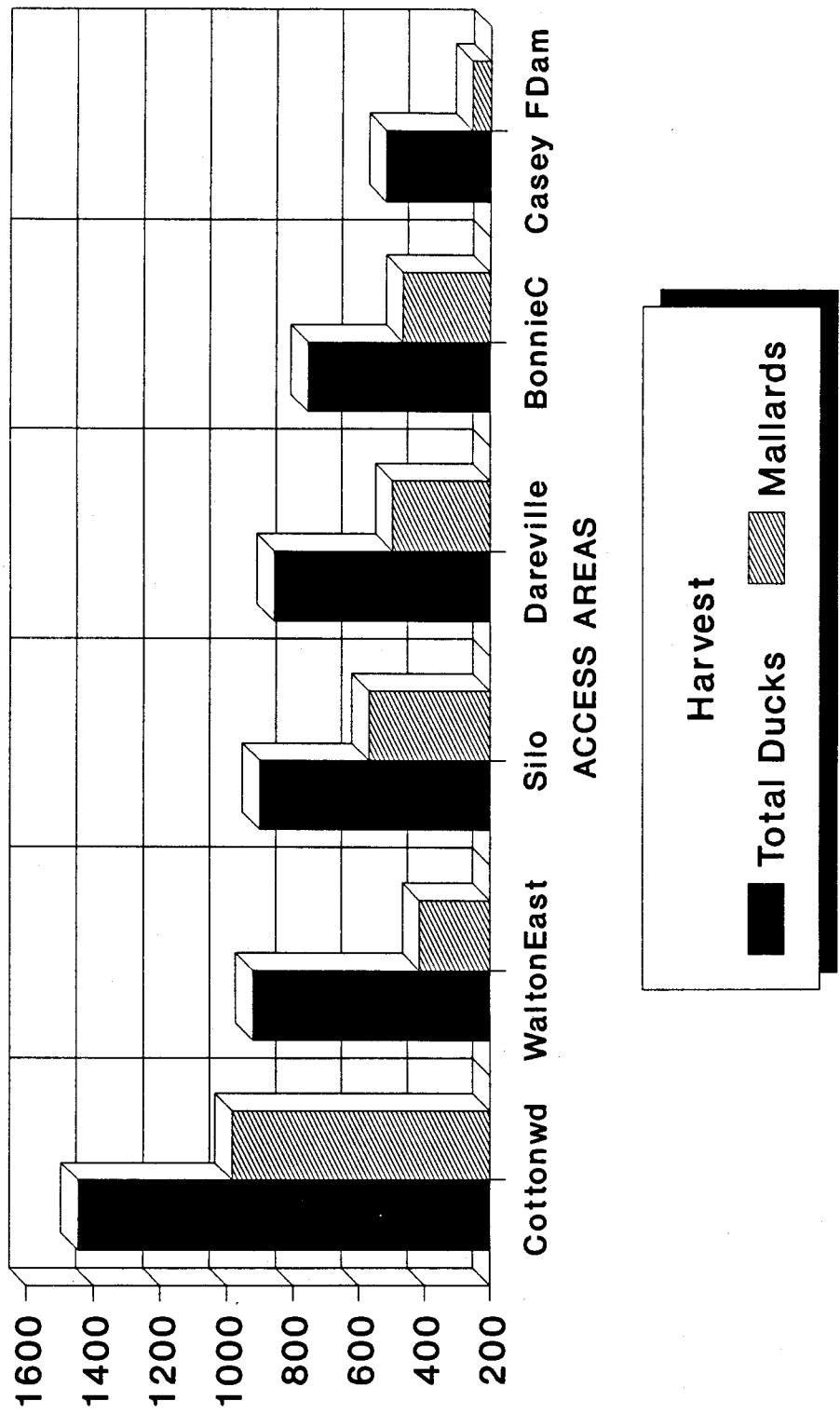


Figure 4. Total ducks, and mallard harvest at six access areas at Rend Lake during 1991.

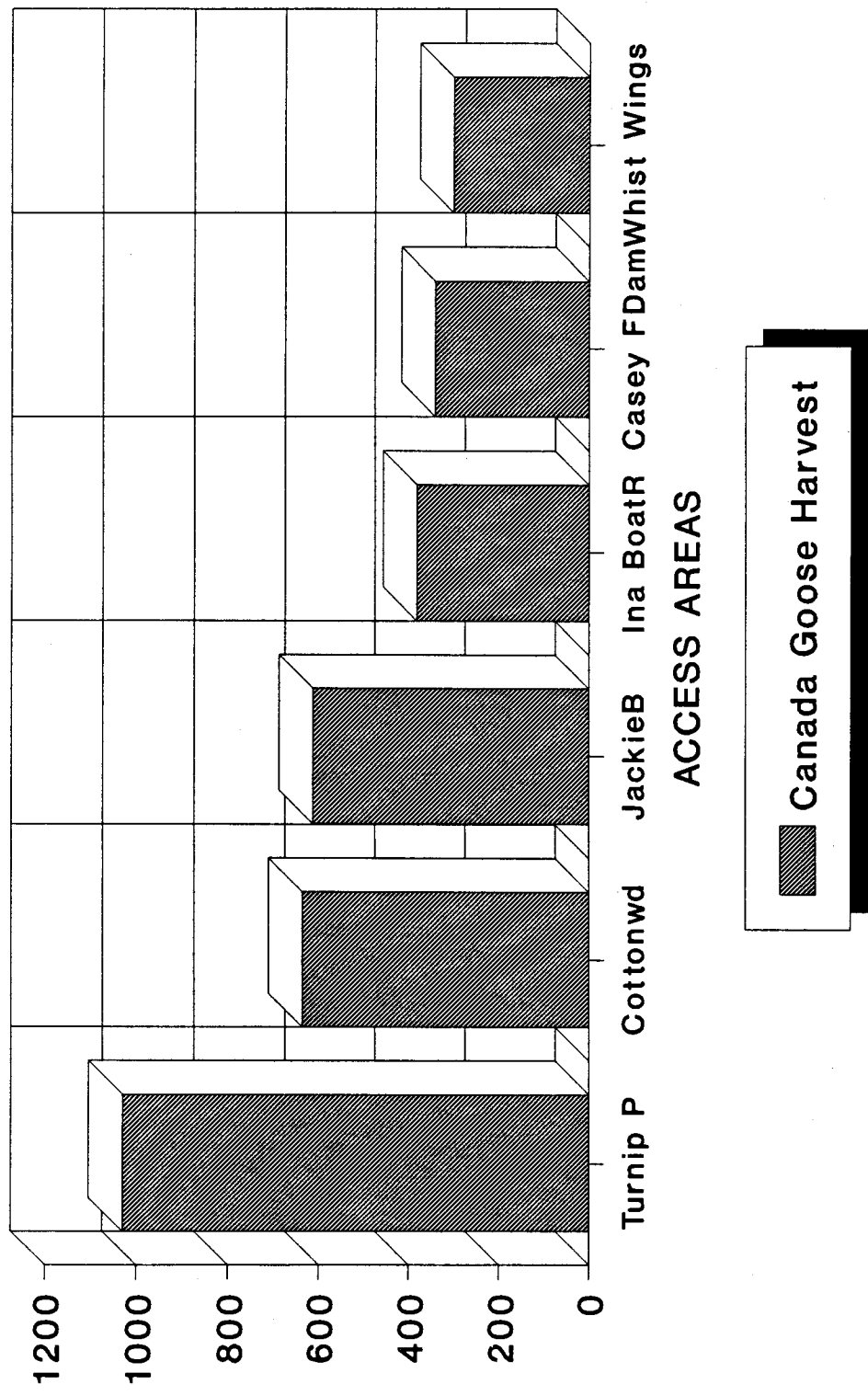


Figure 5. Canada Goose Harvest at Six Access Areas at Rend Lake During 1991.

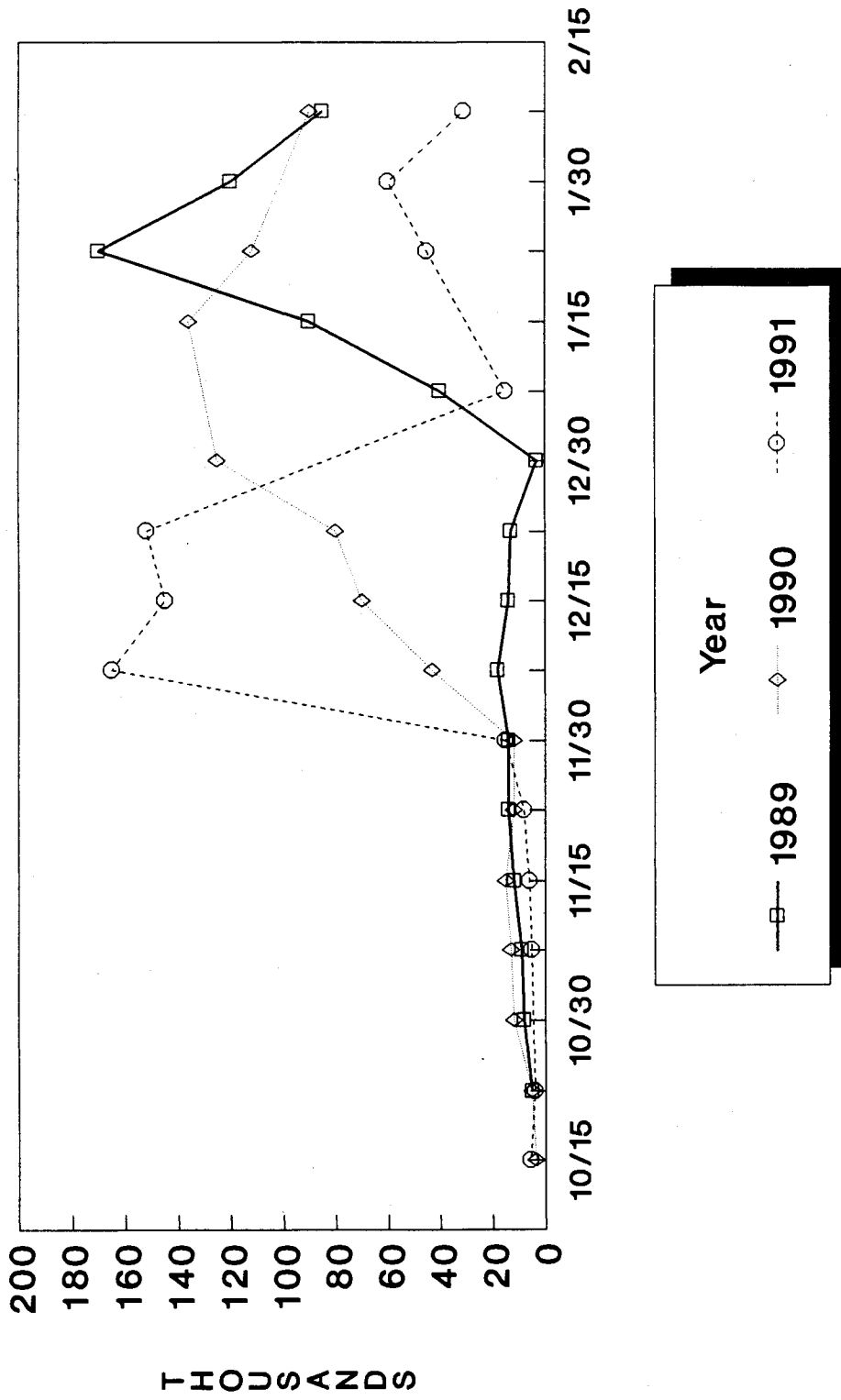


Figure 6. Numbers of Canada Geese at Rend Lake from 1989-1991.