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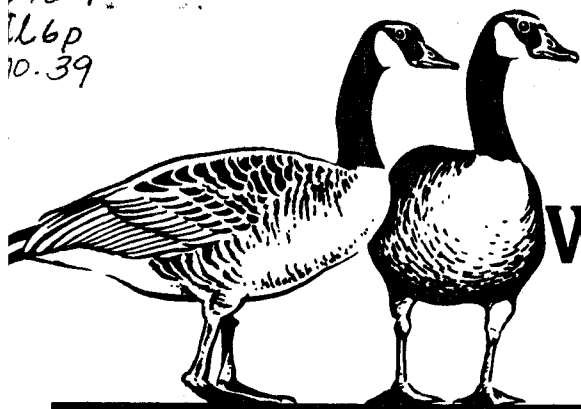
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# WATERFOWL PROGRAM

ILLINOIS DEPARTMENT OF CONSERVATION  
DIVISION OF FISH AND WILDLIFE RESOURCES

## ILLINOIS WATERFOWL HARVEST, HUNTER ACTIVITY, AND ATTITUDES TOWARD SHOOTING HOURS, LEAD POISONING, AND STEEL SHOT IN 1981

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**Abstract:** The 61,929 purchasers of the 1981 Illinois Waterfowl Hunting Stamp were sampled via mail-letter questionnaire (n = 1,240, 83.4% response) to obtain information on waterfowl harvest, hunter activity, and attitudes toward selected issues. Respondents were 98.6% male and averaged 36.2 years of age; 7.0% were non-residents and 10.5% did not hunt waterfowl in Illinois in 1981. Active hunters spent an average of \$462 for the 1981 season, which equates to a total expenditure of \$25.6 million for waterfowl hunting in the state annually. During the September teal season, 13,085 hunters spent 34,111 days afield and harvested 26,956 teal. During the regular duck season, 48,395 hunters expended 621,936 days afield to harvest 397,208 ducks; they also took 5,817 coots. 40.3% of the duck hunting days occurred on public hunting areas, 18.0% on private duck clubs, and 41.7% on other areas. An estimated 28,018 goose hunters devoted 157,370 days afield to their sport and harvested 47,384 geese. There were 25,328 (57.2%) Canada geese taken in the Quota Zone, 8,286 (18.7%) at Rend Lake, and 10,688 (24.1%) in the remainder of the state. Crippling losses totaled 92,129 ducks (23.2 per 100 harvested), 10,787 geese (22.8 per 100 harvested), and 1,518 coots (26.1 per 100 harvested). Most (74.2%) hunters favored beginning legal shooting time during the regular duck season at 1/2 hour before sunrise. 47.5% thought lead poisoning was a problem on some, many, or all areas, and 61.6% accepted 1 or more criteria (waterfowl dying, lead in blood, shot in gizzards, and spent shot in habitat) for determining whether areas should be required to use nontoxic shot. More than half (53.9%) of the hunters had never used steel shot for harvesting waterfowl, but 51.9% said they would voluntarily use steel on some areas if asked to do so by the Illinois Department of Conservation.

The purpose of this study was to collect information via mail-letter questionnaire from a sample of waterfowl hunters in Illinois following the 1981 season. The need for obtaining data on waterfowl harvest, hunter activity, and attitudes of hunters toward hunting regulations and other issues has become increasingly evident in recent years. Experiments with dividing the state into zones for purposes of setting the duck hunting season, which began in 1977,

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necessitate determining harvests within zones as well as movements of hunters between zones. Management of the Mississippi Valley Population of Canada geese, which winter in and adjacent to southern Illinois, is controversial; determining the distribution of harvest of these geese in the state is a major concern. Subjects such as lead poisoning, steel shot, shooting hours, and other hunting regulations are continuously debated. The questionnaire provides an avenue for determining the attitudes of a random sample of hunters--i.e., the feelings of the "silent majority"--toward these and countless other issues that impact the waterfowl resource and the sport of waterfowl hunting.

The opportunity to develop a mail-letter questionnaire for waterfowl hunters became evident soon after the Illinois Migratory Waterfowl Hunting Stamp was created in 1975. Hunters from 16 to 64 years of age are required to have the Stamp to hunt waterfowl in Illinois. The names and addresses of selected individuals purchasing the Stamp are obtained via 3 form cards that accompany each book of 30 stamps. Vendors are instructed to fill out the cards and mail them to the Illinois Department of Conservation (DOC); the cards are self-addressed and first class postage is prepaid.

Acknowledgement is made to J.A. Ellis and G.F. Hubert, Jr. for assistance in developing the format for the questionnaire and the procedures for conducting mail-letter surveys. D.D. Thornburg, T. Miller, and S.P. Havera offered suggestions for subjects to be addressed by and specific questions to be included in the questionnaire. M.A. Cerny transferred the data to computer files, and R.E. Warner did the programming, which was performed at the University of Illinois in Champaign. M.F. Sorensen, S.M. Carney, E.M. Martin, J.A. Ellis, G.F. Hubert, Jr., and S.P. Havera critically read a preliminary draft of the report. Facilities for processing the questionnaires and analyzing the data were provided by the Illinois Natural History Survey.

## METHODS AND MATERIALS

The 4-page, 20-question questionnaire (Fig. 1) and an accompanying letter (Fig. 2) were mailed via first class to 1,526 purchasers (1,432 residents and 94 non-residents) of the 1981 Illinois Migratory Waterfowl Hunting Stamp on 8 January 1982. These stamp purchasers were informed in advance (i.e., when acquiring stamp) that they would receive a questionnaire following the hunting season. Non-respondents were sent another copy of the questionnaire and a different cover letter (Fig. 3) on 9 February. Individuals who did not respond were mailed a third copy of the questionnaire and a third version of the cover letter (Fig. 4) on 12 March.

Address labels were attached directly to the questionnaires, which were inserted into #10 window envelopes. Also included was a #9 envelope for use in returning the questionnaire; this envelope was self-addressed to the DOC and first class postage was prepaid. A commercial mailing service printed and attached the address labels, stuffed the questionnaire, cover letter, and return envelope into the window envelope, and sealed the window envelope.

Forty of the questionnaires were returned undelivered, which reduced the sample to 1,486. From these, 1,240 usable questionnaires were returned. This high response (83.4%) reduced non-response bias to minimal proportions.

Responses to each question were transferred to computer files at the University of Illinois in Champaign. Appropriate programs were used to determine the attitudes expressed by hunters relative to the opinion-type questions. By using the goose harvest tabulated in the Quota Zone (Fig. 5) as a reference, goose harvest was calculated for other areas with the following formula:

$$\frac{R_2 Q}{R_1}$$

where Q = harvest in the Quota Zone as tabulated from daily harvest records--i.e., actual counts of harvested geese (Thornburg and Estel 1983).

$R_1$  = harvest reported in the Quota Zone by stamp purchasers who returned usable questionnaires.

$R_2$  = harvest reported in other areas (Rend Lake or remainder of state) by stamp purchasers who returned usable questionnaires.

This procedure accounts for harvest by all hunters, including those <16 or >64 years of age. Thus, goose harvest in the Quota Zone, at Rend Lake, and in the remainder of the state equals total harvest of geese in Illinois in 1981. The statewide harvest derived by this procedure was 0.666 as great as the harvest calculated by linear extrapolation of the number of geese reported taken by stamp purchasers who returned usable questionnaires to a projected stamp sales of 61,929.

Harvests of ducks and coots were estimated by linear extrapolation and then adjusting downward by the same factor of 0.666 that was associated with the estimated goose harvest. Crippling losses, as well as the number of hunters and days afield, were calculated in the same manner except without adjustment. Estimates for the latter 2 parameters are minimal because hunters <16 or >64 years of age were not taken into consideration. The 95% confidence intervals for the estimated numbers of ducks, coots, and geese harvested or lost to crippling were calculated by:

$$1.96N \sqrt{\frac{s^2}{n} \frac{N-n}{N}}$$

where  $N$  = total sales of Illinois Migratory Waterfowl Hunting Stamps.

$n$  = number of stamp purchasers who returned usable questionnaires.

$s^2$  = variance for number of birds harvested (or lost to crippling) by stamp purchasers who returned usable questionnaires.

Note: the 1.96 value is from  $t$  Table at 95% level of confidence and >120 d.f.

## FINDINGS

### Season Dates and Bag Limits

The waterfowl hunting regulations in Illinois in 1981 are summarized in Fig. 6. For ducks, length of the season (50 days) and daily bag limits (determined by Point System, which allowed maximum of 4 mallards) have undergone only minor changes in the past several years. For geese, length of the season was reduced from 70 days in 1980 and previous years to 50 days in 1981. Daily bag limit was 5 geese, only 2 of which could be Canada geese. The September teal season (9 days and daily bag limit of 4 birds) has not changed in several years.

### Characteristics of Respondents

Respondents to the questionnaire were 98.6% male (determined by their first name) and averaged 36.2 years of age (Table 1). More than half (56.3%) were in their twenties or thirties, 7.0% were residents of some other state, and 10.5% did not hunt waterfowl in Illinois in 1981.

All individuals in the sample spent an average of \$414 for waterfowl hunting in Illinois in 1981. The average per active hunter was \$462. With a projected stamp sales of 61,929, these values equate to a \$25.6 million expenditure for waterfowl hunting in the state for the 1981 season.

### September Teal Season

An estimated 13,085 hunters (21.1% of stamp purchasers) attempted to harvest teal during the September teal season in Illinois in 1981 (Table 2). Almost all (95.8%) of these hunters were residents of the state. More hunters (2,597) pursued teal in Administrative Region 2 than in any other region. However, the greatest number of days afield (6,642) was expended in Region 3A.

The statewide harvest of teal during the teal season was estimated at 26,956 birds (Table 2). Harvest was greatest (5,518) in Administrative Region

3A, but hunting success was highest (1.14 birds per hunter per day) in Region 1A. Teal harvest and hunting success were lowest in Region 3B. The statewide harvest averaged 2.06 teal per hunter for the season.

According to the U.S. Fish & Wildlife Service (FWS), 13,200 teal, 51.2% as many as estimated by the DOC, were harvested in the state during the 1981 teal season (Carney et al. 1983). These birds include 10,500 (79.5%) blue-winged teal and 2,700 (20.5%) green-winged teal. The relatively low teal harvest reported by the FWS is attributed primarily to a large downward adjustment that is applied to this estimate (see DISCUSSION).

#### Regular Duck Season

An estimated 48,395 (78.1%) of the stamp purchasers hunted ducks during the regular duck season in Illinois in 1981 (Table 3). 94.1% of these hunters lived in the state and 5.9% were non-residents. The greatest number of hunters (11,137) were active in Administrative Region 2, but the greatest number of days afield (152,375) took place in Region 3A.

With regards to type of area hunted, 40.3% of the days afield took place on public hunting areas, 18.0% on private duck clubs, and 41.7% on other areas (Table 4). Public hunting areas accounted for more than half of the days afield in Administrative Regions 3A, 4, and 5, as did other areas in Regions 1A, 2, and 3B. Conversely, private duck clubs were credited with the smallest proportion of days afield in all regions except Region 2.

There were an estimated 397,208 ducks harvested during Illinois' regular duck season in 1981 (Table 3). Harvest was greatest (100,416) in Administrative Region 3A and lowest (20,043) in Region 3B. Except for low values in Region 2 and Region 3B, hunting success was similar (0.63-0.67 ducks per day afield) among the administrative regions. The statewide harvest averaged 8.21 ducks per hunter for the season.



The 397,208 ducks estimated to have been harvested in 1981 included 200,931 (50.6%) mallards, 84,693 (21.3%) wood ducks, and 111,584 (28.1%) other species. For purposes of comparison, the FWS estimated that 374,100 ducks were taken during the regular duck season in Illinois in 1981 (Carney et al. 1982). This estimate included 178,200 (47.6%) mallards, 59,100 (15.8%) wood ducks, and 136,800 (36.6%) other species. Thus, the DOC and FWS's estimates were in good agreement relative to the number of mallards and number of total ducks harvested. However, they differed somewhat on the number of wood ducks and appreciably on the number of ducks of other species taken.

#### Coot Harvest

The 1981 harvest of coots in Illinois was estimated to be 5,817 birds (Table 3). More than a third (38.3%) of the coots were taken in Administrative Region 2. The FWS calculated that 4,265 coots were harvested in the state in 1981 (Carney et al. 1983).

#### Goose Hunting

The number of hunters who pursued geese in Illinois in 1981 was estimated at 28,018 or 45.2% of the stamp purchasers (Table 5). 7.7% of these hunters were not residents of the state. Total effort devoted to goose hunting was calculated to be 157,370 days afield.

A statewide harvest of 47,384 geese was estimated for the 1981 season (Table 5). Hunting success was 0.30 goose per day afield and 1.69 geese per hunter for the season. Of the birds taken, 44,302 (93.5%) were Canada geese and 3,082 (6.5%) were other species. Estimates by the FWS included 51,500 (92.3%) Canada geese, 4,300 (7.7%) other geese, and 55,800 total geese (Carney et al. 1983).

Thornburg and Estel's (1983) data indicate that 25,328 (57.2%) of the Canada geese were taken in the 4-county Goose Quota Zone in 1981 (Table 5). Another 8,286 (18.7%) Canada geese were harvested at or near Rend Lake (parts of 2 counties) and the remaining 10,688 (24.1%) Canada geese were taken elsewhere in the state (96 counties).

#### Crippling Losses

The estimated numbers of waterfowl that were crippled (knocked down but not retrieved) in Illinois in 1981 are summarized in Table 6. Statewide losses totaled 92,129 ducks (23.2 per 100 harvested), 10,782 geese (22.8 per 100 harvested), and 1,518 coots (26.1 per 100 harvested). Crippling losses in the entire Mississippi Flyway (14 states) during the 1981 season were estimated by the FWS to be 1,149,000 ducks (21.0 per 100 harvested), 74,100 geese (14.4 per 100 harvested), and 46,800 coots (18.7 per 100 harvested) (Carney et al. 1983).

#### Attitudes Toward Selected Issues

Hunters who returned the questionnaire overwhelmingly favored (74.2%) beginning legal shooting time during the regular duck season at 1/2 hour before sunrise (Table 7). 20.5% of the hunters voted for a sunrise beginning, and 5.3% had no opinion.

When asked how they felt about lead poisoning of waterfowl, 47.5% of the hunters indicated that it was serious either on some areas, on many areas, or on all areas (Table 8). A third (33.0%) of the hunters believed lead poisoning was not serious anywhere in the state, and 19.5% had no opinion or didn't know.

With regards to criteria for determining whether areas should be required to use nontoxic shot, 61.6% of the hunters indicated 1 or more of the following as acceptable: waterfowl dying of lead poisoning, lead in blood of waterfowl,

ingested shot in gizzards of waterfowl, and spent shot in waterfowl habitat (Table 9). An additional 13.2% of the hunters did not accept any of these criteria, and 25.2% had no opinion or didn't know.

Responses to question #20 revealed that most hunters in Illinois have had little or no experience in using nontoxic steel shot for harvesting waterfowl (Table 10). More than half (53.9%) of them had never used steel shot and 33.5% had used it to harvest  $\leq 20$  birds. The few (12.6%) remaining hunters had harvested  $>20$  birds with steel, which made them relatively experienced in using nontoxic shot.

A majority (51.9%) of the hunters said they would voluntarily use nontoxic steel shot for waterfowl hunting on some areas if asked to do so by the DDC (Table 11). Hunters who would not voluntarily use nontoxic shot accounted for 27.8% of the sample. The remaining 20.3% were undecided. These findings suggest that a minority of the waterfowl hunters in Illinois have strong negative attitudes toward nontoxic steel shot.

Compared to hunters who would voluntarily use nontoxic steel shot, hunters who would not may be characterized from the questionnaire responses as (1) spending more money for waterfowl hunting, (2) devoting more days afield pursuing waterfowl, (3) harvesting more waterfowl, and (4) more strongly favoring beginning shooting time at 1/2 hour before sunrise (Table 12). In other words, the ardent hunters are less willing to voluntarily use nontoxic shot.

Of 128 unsolicited comments that accompanied the returned questionnaires, 25.0% were complaints about the 1981 duck and goose hunting seasons being too early and/or too short, 24.2% related to steel shot (24 negative comments and 5 positive comments), 10.2% were general complaints about having poor duck hunting in 1981, 6.3% were requests for controlling "sky-busting" of geese in

the Quota Zone and/or at Rend Lake, 5.5% were relative to lead poisoning (5 hunters stated it was not a problem and 2 said it was), and 5.5% were pleas to discontinue the September teal season. The remaining (23.3%) comments dealt with a variety of other subjects.

#### DISCUSSION

In mail surveys, hunters as a group always report taking more waterfowl than they actually harvest (Atwood 1956). To compensate for this bias, the FWS uses factors of 0.784 for ducks, 0.669 for coots, and 0.845 for geese to adjust harvest estimates in the Mississippi Flyway (Samuel M. Carney, U.S. Fish & Wildlife Service, pers. commun.). These factors are the product of an upward adjustment to account for harvest by hunters <16 years of age (they are not required to have a U.S. Migratory Bird Hunting and Conservation Stamp) multiplied by downward adjustments to correct for reporting bias and change in questionnaire format in 1969. For example, the adjustment factor for ducks during the regular duck season is:  $1.047 \times 0.777 \times 0.964 = 0.784$ . The FWS applies an additional factor ( $0.784 \times 0.665 = 0.521$ ) to adjust teal harvest during the September teal season in Illinois.

Recent research in Iowa suggests that the adjustment factor for ducks and geese may be on the order of 0.500 (Wright 1978). The differences between this factor, the FWS's for the Mississippi Flyway (0.784, 0.669, and 0.845), and the one employed in the present study (0.666) underscore the need for determining the adjustment factor that is most applicable to Illinois. To accomplish this, it will be necessary to secure filled-out questionnaires from several hundred individual hunters (including those <16 or >64 years of age) whose actual harvest has been recorded for an entire season. This is no small task. Meanwhile, the 0.666 factor is considered acceptable for use in this report because (1) it is intermediate between the FWS's adjustment

factor and the reporting bias detected in Iowa, (2) it is based on data collected in Illinois, and (3) it is current.

Prior to 1940, most of the duck hunting activities in Illinois occurred on private duck clubs, daily fee clubs, and other areas (farm ponds, streams, rivers, etc.). However, with development of many public areas and increase in mobility of hunters, combined with decline of habitat in the Illinois River Valley (Mills et al. 1966, Bellrose et al. 1979), the picture has gradually changed. Today, private clubs account for only 18.0% of the days afield devoted to duck hunting, which is less than half the hunting effort expended on public areas (Table 4). Equally surprising is the discovery that other areas currently attract a plurality (41.7%) of the duck hunting activities in the state. These findings suggest that (1) rules and regulations for private duck clubs, particularly the requirement to keep daily harvest records, might be reduced, and (2) research and management efforts for waterfowl on other areas could be highly profitable.

It is apparent that the distribution of harvest of Canada geese has undergone pronounced changes in Illinois in the last decade. In 1971-1973, an average of 79.3% of the Canada geese were taken in the Quota Zone versus 20.7% in the remainder of the state (Kennedy et al. 1974). Given the quotas in effect in those years, these percentages equate to approximately 22,000 Canada geese harvested in the Quota Zone and 6,000 in the remainder of the state. In 1981, the distribution was 57.2% (25,328) in the Quota Zone and 42.8% (18,974) in the remainder of the state (Table 5). Contributing importantly to the increase in harvest outside the Quota zone was the development of goose hunting at Rend Lake following its impoundment in 1971. This area accounted for 18.7% (8,286) of the harvest in 1981. However, even if Rend Lake is disregarded, harvest in the remainder of the state has increased measurably--compare the 10,688 Canada geese taken in 1981 (Table 5) to the

average of 5,330 in 1971-1973 (Kennedy et al. 1974). Harvest of geese outside the Quota Zone and away from Rend Lake should be determined on a county-by-county basis and, in fact, this is an objective of the 1982 Illinois Waterfowl Hunting Questionnaire.

Crippling losses of waterfowl is a subject that attracts considerable discussion and virtually no action. In management plans prepared 25 years ago, the Mississippi Flyway Council (1958:224) stated "Human enjoyment is in no way enhanced by wounded or sick birds which finally die or are incapable of further production. Hence even a slight saving of unretrieved birds would be all to the good. This is a seriously neglected phase of management which should present a challenge not only to professional conservationists but non-professionals as well. . . ." Crippling losses have continued unabated through the years and are presently a serious drain on waterfowl populations. Estimates of 104,434 birds in Illinois (Table 6) and 1,269,900 in the Mississippi Flyway (Carney et al. 1983) were lost to crippling during the 1981 season. Most hunters do not possess the hunting skills necessary to take waterfowl with minimal crippling. They accept high crippling losses as a consequence of waterfowling. Steps that might be taken to reduce crippling include (1) discourage "sky-busting" by limiting numbers of shotgun shells hunters take afield, restricting holding capacity of shotguns to 2 shells, outlawing 10 gauges, and prosecuting offenders, and (2) sponsor educational programs designed to enhance hunter attitudes and hunting skills.

Evidence obtained during this study indicates that a significant proportion of the state's waterfowl hunters can be persuaded to voluntarily use nontoxic shot on selected areas (Table 11). 51.9% of the hunters said they would voluntarily use nontoxic shot, 27.8% said they would not, and 20.3% were undecided. Thus, given the right conditions, it is theoretically possible to

persuade nearly three-fourths of the hunters to convert to nontoxic shot.

A pilot project to determine the extent to which waterfowl hunters actually can be induced to use nontoxic shot is worthy of serious consideration.

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Table 1. Characteristics of persons (purchasers of Illinois Migratory Waterfowl Hunting Stamp) who filled out and returned the mail-letter questionnaire for the 1981 season.

Characteristic	n	Mean or Percentage
Sex	1,173	98.6% male
Age	1,236	36.2 years <sup>a</sup>
Residence	1,240	93.0% Illinois
Hunted Waterfowl in Illinois	1,239	89.5% yes
Money Spent		
All Stamp Purchasers	1,240	\$414
Hunted in Illinois	1,103	\$462 <sup>b</sup>

<sup>a</sup> 10-19 years - 8.1%  
 20-29 years - 26.9%  
 30-39 years - 29.4%  
 40-49 years - 18.0%  
 50-59 years - 12.2%  
 60-82 years 5.6%

<sup>b</sup> \$ <100 - 26.0%  
 100-500 - 48.1%  
 500-1,000 - 17.2%  
 1,000-2,000 - 6.8%  
 2,000-5,000 - 1.7%  
 >5,000 - 0.2%

Table 2. Teal harvest and hunter activity, by administrative regions, during the September teal season in Illinois in 1981.

Administrative Region <sup>a</sup>	Hunters		Days Afield		Teal		
	Number	Percent <sup>b</sup>	Number	Per Hunter	Number	Per Day Afield	Per Hunter
1A	1,249		3,746	3.00	4,255	1.14	3.41
1B	1,698		3,995	2.35	3,424	0.86	2.02
2	2,597		6,243	2.40	3,723	0.60	1.43
3A	2,048		6,642	3.24	5,518	0.83	2.69
3B	1,299		3,646	2.81	2,127	0.58	1.64
4	1,948		4,495	2.31	3,025	0.67	1.55
5	1,598		4,045	2.53	3,590	0.89	2.25
Unknown	648		1,299	2.00	1,294	1.00	2.00
Entire State	13,085 <sup>c</sup>	21.1	34,111	2.61	26,956 <sup>d</sup>	0.79	2.06

<sup>a</sup>See Figure 5.

<sup>b</sup>Percent of stamp purchasers.

<sup>c</sup>Includes 12,535 Illinois residents and 550 hunters from other states.

<sup>d</sup>The 95% confidence interval is  $\pm 5,209$ .

Table 3. Duck and coot harvest and hunter activity, by administrative regions, during the regular duck season in Illinois in 1981.

Administrative Region <sup>a</sup>	Hunters		Days Afield		Ducks			
	Number	Percent <sup>b</sup>	Number	Per Hunter	Number	Per Day Afield	Per Hunter	Number of Coots
1A	3,796		48,894	12.88	31,378	0.64	8.27	100
1B	5,594		73,366	13.12	47,100	0.64	8.42	532
2	11,137		118,314	10.62	65,016	0.55	5.84	2,227
3A	8,590		152,375	17.74	100,416	0.66	11.69	931
3B	3,646		38,656	10.60	20,043	0.52	5.50	199
4	7,092		83,954	11.84	56,008	0.67	7.90	798
5	5,144		64,776	12.59	40,685	0.63	7.91	632
Unknown	3,396		41,601	12.25	36,562	0.88	10.77	398
Entire State	48,395 <sup>c</sup>	78.1	621,936	12.85	397,208 <sup>d,e</sup>	0.64	8.21	5,817 <sup>f</sup>

<sup>a</sup>See Figure 5.

<sup>b</sup>Percent of stamp purchasers.

<sup>c</sup>Includes 45,548 Illinois residents and 2,847 hunters from other states.

<sup>d</sup>The 95% confidence interval is  $\pm 33,072$ .

<sup>e</sup>Includes 200,931 mallards, 84,693 wood ducks, and 111,584 other ducks.

<sup>f</sup>The 95% confidence interval is  $\pm 2,016$ .

Table 4. Distribution of duck hunters and hunting effort relative to type of area hunted in Illinois in 1981.

Type of Area	Hunters		Days Afield	
	Number <sup>a</sup>	Percent	Number	Percent
<u>Administrative Region 1A<sup>b</sup></u>				
Public Hunting Areas	1,548	31.3	16,281	36.5
Private Duck Clubs	449	9.1	2,897	6.5
Other Areas	2,947	59.6	25,371	57.0
<u>Administrative Region 1B</u>				
Public Hunting Areas	2,247	33.1	23,623	35.0
Private Duck Clubs	1,748	25.7	19,228	28.5
Other Areas	2,797	41.2	24,572	36.5
<u>Administrative Region 2</u>				
Public Hunting Areas	2,647	20.0	20,676	18.2
Private Duck Clubs	2,647	20.0	26,320	23.1
Other Areas	7,941	60.0	66,923	58.7
<u>Administrative Region 3A</u>				
Public Hunting Areas	4,745	43.2	79,709	55.8
Private Duck Clubs	2,098	19.1	23,223	16.3
Other Areas	4,145	37.7	39,764	27.9
<u>Administrative Region 3B</u>				
Public Hunting Areas	1,798	34.0	11,936	30.7
Private Duck Clubs	949	17.9	7,491	19.2
Other Areas	2,547	48.1	19,478	50.1
<u>Administrative Region 4</u>				
Public Hunting Areas	4,645	51.7	46,347	55.5
Private Duck Clubs	899	10.0	10,888	13.1
Other Areas	3,446	38.3	26,220	31.4
<u>Administrative Region 5</u>				
Public Hunting Areas	3,146	45.0	33,262	51.4
Private Duck Clubs	649	9.3	4,095	6.3
Other Areas	3,196	45.7	27,419	42.3

Table 4 - continued.

Table 4. Continued - page 2.

Type of Area	Hunters		Days Afield	
	Number <sup>a</sup>	Percent	Number	Percent
	<u>Entire State</u>			
Public Hunting Areas	21,525	35.4	240,225	40.3
Private Areas	10,588	17.4	107,427	18.0
Other Areas	28,717	47.2	248,066	41.7

<sup>a</sup>Includes repeats of individual hunters.

<sup>b</sup>See Figure 5.

Table 5. Goose harvest and hunter activity during the goose season in Illinois in 1981.

Zone or Region <sup>a</sup>	Hunters		Days Afield			Geese			
	Number	Percent <sup>b</sup>	Number	Per Hunter	Canada Geese	Other Geese	Total Geese	Per Day Afield	Per Hunter
Goose Quota Zone					25,328	50	25,378		
Rend Lake					8,286	272	8,558		
Remainder of State					10,688	2,760	13,448		
Entire State	28,018 <sup>c</sup>	45.2	157,370	5.60	44,302	3,082	47,384 <sup>d</sup>	0.30	1.69

<sup>a</sup>See Figure 5.

<sup>b</sup>Percent of stamp purchasers.

<sup>c</sup>Includes 25,870 Illinois residents and 2,148 hunters from other states.

<sup>d</sup>The 95% confidence interval is  $\pm 7,294$ .

Table 6. Number of waterfowl that were crippled (knocked down but not retrieved) in Illinois during the 1981 hunting season.

Species	Cripples Lost	
	Number	Per 100 Birds Bagged
Ducks <sup>a</sup>	92,129 ± 8,551 <sup>b</sup>	23.2
Geese	10,787 ± 2,584	22.8
Coots	1,518 ± 885	26.1

<sup>a</sup>Regular duck season.

<sup>b</sup>95% confidence interval.

Table 7. Responses of waterfowl hunters to the question "When the Point System is in use for determining the daily bag limit, at what time do you believe legal shooting hours should begin for duck hunting during the regular duck season in Illinois?" (n = 1,105)

---

Choice of Answers	Percent
Sunrise	20.5
1/2 Hour Before Sunrise	74.2
No Opinion	5.3

---



Table 8. Responses of waterfowl hunters to the question "How serious do you think lead poisoning is among waterfowl in Illinois?" (n = 1,132).

Choice of Answers	Percent
Not serious anywhere	33.0
Serious on some areas	40.2
Serious on many areas	4.5
Serious on all areas	2.8
No opinion or don't know	19.5

Table 9. Responses of waterfowl hunters to the question "Which of the following criteria are acceptable to you for determining whether areas should be required to use non-toxic steel shot in Illinois? (check as many answers as applicable)" (n = 1,114).

Choice of Answers	Percent
Waterfowl dying of lead poisoning	46.9
Lead in blood of waterfowl	30.2
Ingested shot in gizzards of waterfowl	33.6
Spent pellets in waterfowl habitat	17.1
None of the above	13.2
No opinion or don't know	25.2

Table 10. Responses of waterfowl hunters to the question "About how many waterfowl have you harvested with non-toxic steel shot since 1977?" (n = 1,080).

Answers (written in)	Percent
0	53.9
1-20	33.5
>20	12.6

Table 11. Responses of waterfowl hunters to the question "Would you voluntarily use non-toxic steel shot for waterfowl hunting on some areas if asked to do so by the Illinois Department of Conservation?"

---

Choice of Answers	Percent
	(n = 1,139)
Yes	51.9
No	27.8
Undecided	20.3

---

Table 12. Characteristics of the "average" waterfowl hunter who would voluntarily use steel shot in Illinois versus the "average" hunter who would not. Sample sizes are in parentheses.

Characteristic	Would Use Steel Shot	Would Not Use Steel Shot
Age in years	35.6(590)	36.9(316)
Money spent for 1981 season	\$376(557)	\$630(308)
Days spent hunting		
September teal season	0.6(526)	0.8(292)
Regular duck season	10.5(532)	13.6(299)
Geese	2.5(535)	3.7(214)
Waterfowl Bagged		
Teal (September season)	1.9(118)	2.4( 87)
Ducks (regular season)	6.7(478)	11.0(268)
Geese	1.3(290)	2.0(185)
Attitude toward shooting time		
Sunrise	22.2(562)	17.8(308)
1/2 hour before sunrise	72.1	79.9
No opinion	5.7	2.3

1981 ILLINOIS WATERFOWL HUNTING QUESTIONNAIRE

INSTRUCTIONS

Please fill out the questionnaire on the following pages for your waterfowl hunting activities during the 1981-82 season.

If you did not hunt waterfowl in Illinois in 1981, answer the first three questions and return this form.

The questionnaire is divided into five parts: General Information, September Teal Season, Regular Duck Season, Goose Hunting, and Other Topics.

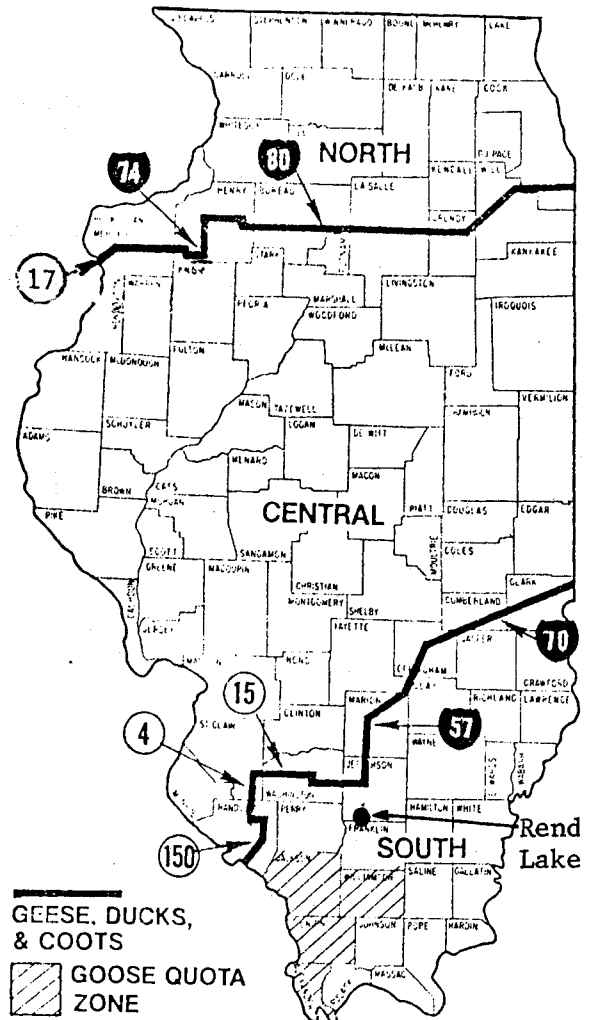
Report only your kill. DO NOT report the kill of others with whom you may have hunted.

Write in the number of days on which you hunted ducks and the number of days on which you hunted geese. Include your unsuccessful days.

If you hunted both ducks and geese at the same time, count the day toward your primary target -- that is, primarily ducks or primarily geese. DO NOT count the hunt as a day of duck hunting and also as a day of goose hunting.

If you can't remember the exact figures, give your best estimate.

When completed, insert questionnaire into the self-addressed envelope and mail. Postage is prepaid.



Your comments are welcome but please send them in a separate letter to receive proper attention.

Thank you for your cooperation

POSTAGE IS PREPAID

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Figure 1. The 1981 Illinois waterfowl hunting questionnaire.

Figure 1 - continued.



12. List the number of ducks and coots you personally harvested during the regular duck season in Illinois in 1981. DO NOT include teal killed during the early (September) teal season or birds killed in other states or countries.

I personally killed and retrieved:		I knocked down in sight but could not retrieve:	
Mallards _____			33-35
Wood Ducks _____		Ducks _____	36-38 45-46
Other Ducks _____			39-41
Coots _____		Coots _____	42-44 47-48

GOOSE HUNTING

13. How many different days did you hunt geese in Illinois in 1981? \_\_\_\_\_ 49-50
14. List the number of geese you personally harvested in Illinois in 1981.
- a. Number in Goose Quota Zone (see map) . . . . . \_\_\_\_\_ 51-53
  - b. Number at or within 5 miles of Rend Lake (see map) . . . \_\_\_\_\_ 54-56
  - c. Number in remainder of state . . . . . \_\_\_\_\_ 57-59
15. Of the geese you harvested, how many were Canada geese? . . . . \_\_\_\_\_ 60-62
16. How many geese did you knock down in sight but neither you nor anyone else could retrieve? . . . . . \_\_\_\_\_ 63-64

OTHER TOPICS

17. How serious do you think lead poisoning is among waterfowl in Illinois?
- a. Not serious anywhere \_\_\_\_\_
  - b. Serious on some areas \_\_\_\_\_
  - c. Serious on many areas \_\_\_\_\_
  - d. Serious on all areas \_\_\_\_\_
  - e. No opinion \_\_\_\_\_
- 65
18. Which of the following criteria are acceptable to you for determining whether areas should be required to use non-toxic steel shot in Illinois? (check as many answers as applicable)
- a. Waterfowl dying of lead poisoning . . . . . \_\_\_\_\_ 66
  - b. Lead in blood of waterfowl . . . . . \_\_\_\_\_ 67
  - c. Ingested shot in gizzards of waterfowl . . . . . \_\_\_\_\_ 68
  - d. Spent shot in waterfowl habitat . . . . . \_\_\_\_\_ 69
  - e. None of the above . . . . . \_\_\_\_\_ 70
  - f. No opinion or don't know . . . . . \_\_\_\_\_ 71
19. Would you voluntarily use non-toxic steel shot for waterfowl hunting on some areas if asked to do so by the Illinois Department of Conservation?
- Yes \_\_\_\_\_ No \_\_\_\_\_ Undecided \_\_\_\_\_
- 72
20. About how many waterfowl have you harvested with non-toxic steel shot since 1977? . . . . . \_\_\_\_\_ 73-75

Thank you for your cooperation

POSTAGE IS PREPAID



1981 ILLINOIS WATERFOWL HUNTING QUESTIONNAIRE  
(see instructions on first page)

Return Completed Questionnaire to:

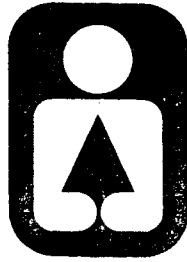
Illinois Department of Conservation  
Division of Fish & Wildlife Resources  
605 Wm. G. Stratton Building  
Springfield, IL 62706

Your comments are welcome  
but please send them in a  
separate letter to receive  
proper attention.

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Illinois



Department of Conservation  
life and land together

605 WM. G. STRATTON BUILDING • 400 SOUTH SPRING STREET • SPRINGFIELD 62706  
CHICAGO OFFICE – ROOM 100, 160 NO. LASALLE 60601  
David Kenney, Director • James C. Helfrich, Assistant Director

Dear Fellow Sportsman:

You are one of a select group of Illinoisans asked to furnish information on your waterfowl hunting activities during the past 1981 hunting season.

The information supplied by you and other selected hunters is vital to the management of our waterfowl resources: (1) to safeguard waterfowl populations, (2) to grant maximum waterfowl hunting opportunity to license holders, and (3) to maintain an attractive level of hunter success.

The information you provide is used to better understand the welfare of the various waterfowl populations. These statistics include distribution of total harvests, number of hunters, and hunting success.

Your reply is very important, even if you did not hunt waterfowl or were not successful. Only a limited number of waterfowl hunters can be contacted, therefore, your response is urgently needed.

Please take a few minutes and fill out the parts of the questionnaire that apply to you. If you do not remember exact figures, please give your best estimate.

Drop the completed questionnaire in the mail. Postage is prepaid.

Yours for better waterfowling.

Sincerely,

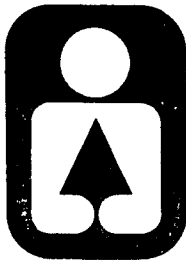
A handwritten signature in cursive script that reads "Mike Conlin".

Mike Conlin, Chief  
Fish and Wildlife Resources Division

Enclosure

Figure 2. The letter that accompanied the first mailing of the questionnaire.

Illinois



# Department of Conservation

life and land together

605 WM. G. STRATTON BUILDING • 400 SOUTH SPRING STREET • SPRINGFIELD 62706

CHICAGO OFFICE – ROOM 100, 160 NO. LASALLE 60601

David Kenney, Director • James C. Helfrich, Assistant Director

Dear Fellow Sportsman:

Recently we mailed you a Waterfowl Hunting Questionnaire, and requested that you fill out and return it as soon as possible. We have not received your form at this time -- perhaps because you have misplaced the questionnaire or haven't found time to complete it and return it to us.

We are enclosing another questionnaire which we hope you will complete and return to us. If you have already returned a questionnaire, please destroy this one. The information supplied by you and other waterfowl hunters being sampled will be of great value to the Conservation Department in better directing the management of Illinois' waterfowl resources.

Please fill out the questionnaire completely and return it even if you did not hunt waterfowl, or were not successful.

Postage is prepaid for returning the completed questionnaire. Your prompt attention will be sincerely appreciated.

Thank you.

Sincerely,

A handwritten signature in cursive script that reads "Mike Conlin".

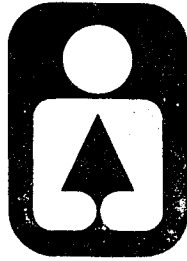
Mike Conlin, Chief

Fish & Wildlife Resources Division

Enclosure

Figure 3. The letter that accompanied the second mailing (first follow-up) of the questionnaire.

Illinois



Department of Conservation

life and land together

605 WM. G. STRATTON BUILDING • 400 SOUTH SPRING STREET • SPRINGFIELD 62706

CHICAGO OFFICE – ROOM 100, 160 NO. LASALLE 60601

David Kenney, Director • James C. Helfrich, Assistant Director

Dear Fellow Sportsman:

This letter is to remind you that we still would like to receive a report of your waterfowl hunting activities for the 1981 season. We don't like to keep bothering you, but this information is very important which only you can supply.

Another copy of the questionnaire is enclosed. We hope you will complete it and return it as soon as possible. If you have already returned a questionnaire, please destroy this one. Your response is needed -- even though you did not hunt waterfowl or had an unsuccessful season.

Postage is prepaid for returning the questionnaire. Just fill it out and drop in the mail. Please help us complete this survey by sending your questionnaire in now. Your prompt attention will be greatly appreciated.

Thank you.

Sincerely,

A handwritten signature in cursive script that reads "Mike Conlin".

Mike Conlin, Chief  
Fish & Wildlife Resources Division

Enclosure

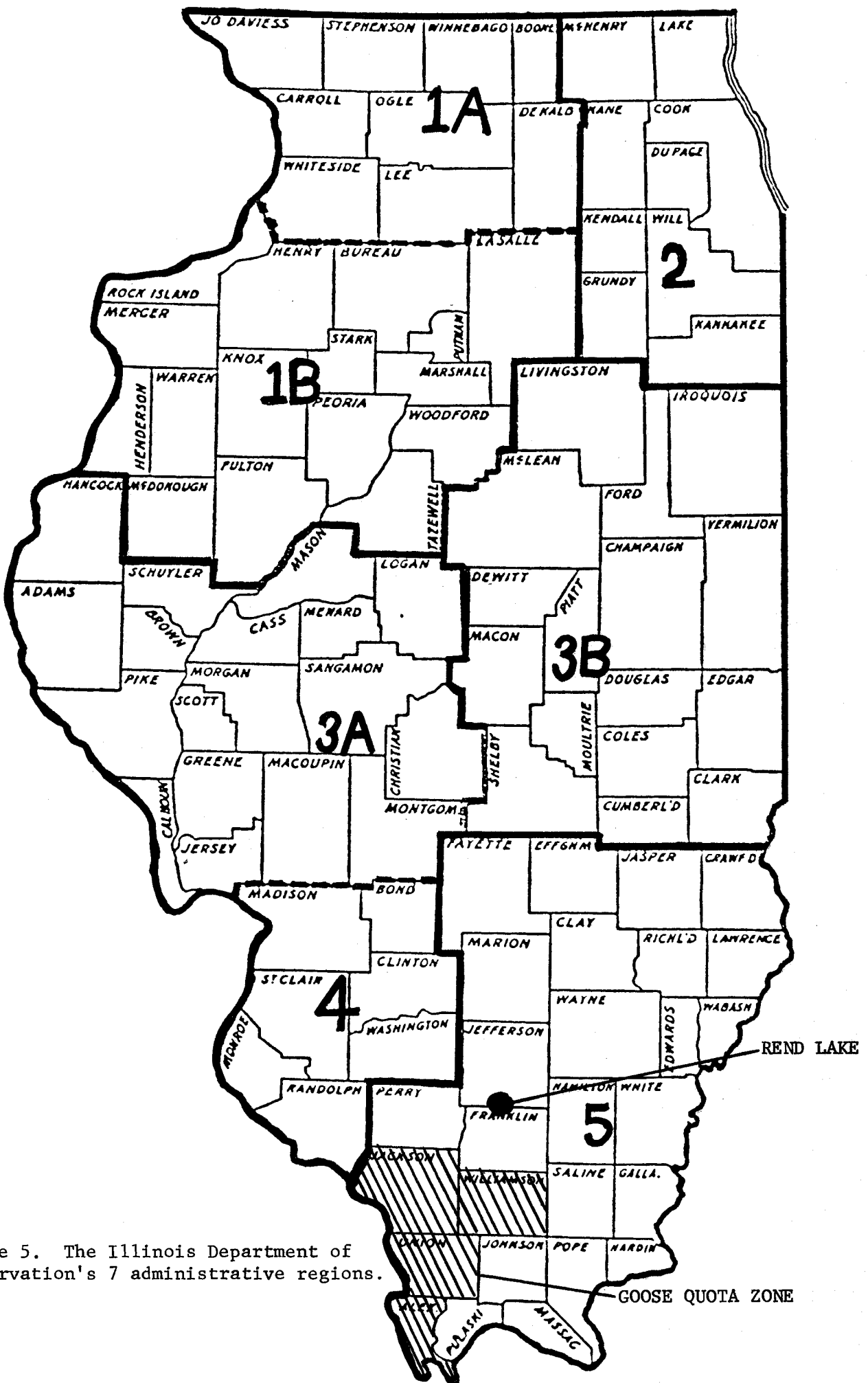


Figure 5. The Illinois Department of Conservation's 7 administrative regions.

GOOSE QUOTA ZONE

# 1981 WATERFOWL HUNTING INFORMATION

**TEAL SEASON:** September 12-20. Shooting hours 7 a.m.-4 p.m. Daily bag limit blue-winged teal and/or green-winged teal.

## POINT SYSTEM

Canvasbacks may not be hunted on the Mississippi River or in its backwaters from Alton to the Wisconsin boundary. Bag limits on ducks are established by the Point System. Point values are:

- 100 Points — Canvasback.
- 70 Points — Mallard hen, redheads, wood duck, black duck, hooded merganser.
- 25 Points — Mallard drake, ringneck, all other species not listed in other point categories.
- 10 Points — Pintail, blue-winged teal, green-winged teal, cinnamon teal, gadwall, shoveler, scaup, wigeon, all other mergansers except hooded.

The daily bag limit is reached when the point value equals or exceeds 100 points. The possession limit cannot exceed two days' bag limits.

## GOOSE LIMITS

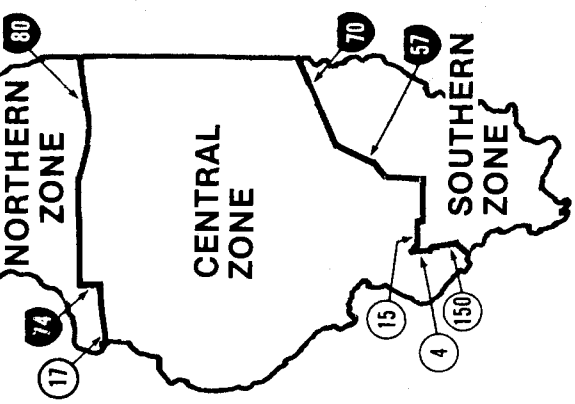
The daily bag limit of geese is five per day, which may not include more than two Canada geese or their subspecies, and two white fronted geese. The possession limit is ten, which may not include more than four Canada geese or subspecies, and four white fronted geese.

Canada geese, or any white cheeked geese, may not be taken at any time in Knox County or in the following townships:

**Fulton County** — Buckheart, Canton, Cass, Deerfield, Fairview, Farmington, Joshua, Orion, Putnam and that portion of Banner Township bounded on the north by Ill. Rt. 9 and on the east by U.S. 24.

**Henry County** — Alba, Annawan, Atkinson, Cornwall. **Edgar County** — Paris.

SPECIES	DATES (Inclusive)	HOURS	DAILY LIMIT	POSSESSION LIMIT
Duck	Oct. 14-Dec. 2, 1981 (North) Oct. 22-Dec. 10, 1981 (Central) Oct. 29-Dec. 17, 1981 (South)	Half hour before sunrise to sunset	See Section On Point System	See Section On Point System
Coot	Oct. 14-Dec. 2, 1981 (North) Oct. 22-Dec. 10, 1981 (Central) Nov. 12-Dec. 31, 1981 (South)	Sunrise to 3 p.m.	15	30
Goose (All areas except those listed below) *	Nov. 9-Dec. 28, 1981 or when quota of 24,000 is reached.	Sunrise to 3 p.m.	See Section On Goose Limits	See Section On Goose Limits
Goose—Quota Zone * (Alexander, Union, Jackson, Williamson)				



\* **BLUE AND SNOW GEESSE** — Seasons to open concurrently with the duck season in all three zones and run for 70 days, except for the four county quota zone where the season will open and close concurrent with the Canada Goose season. Daily bag limit will be five with a possession limit of ten.

Figure 6. Waterfowl hunting regulations in Illinois in 1981.

The Dept. of Conservation does not discriminate in admission to, or treatment or employment in programs or activities in compliance with the Illinois Human Rights Act, the Illinois Constitution, the U.S. Civil Rights Act, as ammended and the U.S. Constitution. The Equal Employment Opportunity Officer is responsible for compliance and may be reached at 217/782-7616.