

1951

## Analysis of the 1948, 1949, and 1950 Waterfowl Kill Samples in Iowa

James G. Sieh

*Iowa State Conservation Commission*

*Let us know how access to this document benefits you*

Copyright ©1951 Iowa Academy of Science, Inc.

Follow this and additional works at: <https://scholarworks.uni.edu/pias>

---

### Recommended Citation

Sieh, James G. (1951) "Analysis of the 1948, 1949, and 1950 Waterfowl Kill Samples in Iowa," *Proceedings of the Iowa Academy of Science*, 58(1), 533-551.

Available at: <https://scholarworks.uni.edu/pias/vol58/iss1/69>

This Research is brought to you for free and open access by the IAS Journals & Newsletters at UNI ScholarWorks. It has been accepted for inclusion in Proceedings of the Iowa Academy of Science by an authorized editor of UNI ScholarWorks. For more information, please contact [scholarworks@uni.edu](mailto:scholarworks@uni.edu).

**Offensive Materials Statement:** Materials located in UNI ScholarWorks come from a broad range of sources and time periods. Some of these materials may contain offensive stereotypes, ideas, visuals, or language.

## Analysis of the 1948, 1949, and 1950 Waterfowl Kill Samples in Iowa

By JAMES G. SIEH

The State Conservation Commission has investigated the waterfowl kill in Iowa during each open season since 1948. This study has established the species composition of the total waterfowl bag taken in Iowa during the open season, and the percentage of each species taken. In addition, the number of hours required by the average Iowa waterfowl hunter to take a duck or goose has been determined for each of the three open seasons. An analysis of the data for these three years is in order.

### IOWA WATERFOWL SEASONS AND REGULATIONS

The 1948, 1949, and 1950 waterfowl seasons and regulations were much the same except for minor changes in opening and closing dates, and in the bag and possession limit of Coot (*Fulica americana*).

The 1948 waterfowl season opened throughout the state on October 29th and closed November 27th. The 1949 season opened on October 21st and closed on November 29th. In 1950 the season opened on October 20th and closed November 23rd. Shooting was allowed opening day from noon until sunset. Each day thereafter the season opened one-half hour before sunrise and closed one hour before sunset.

The bag limit of ducks was four (4) per day; and the possession limit after the first day, eight (8), with only one (1) Wood Duck (*Aix sponsa*) in possession at any time.

The bag and possession limit of geese was four (4). Not more than two (2) of the limit could have been Canada (*Branta canadensis* var.), Hutchin's (*B. c. hutchinsi*), Cackling (*B. c. minima*), or White-fronted (*Anser albifrons* var.) geese. Two (2) of any of the above may be included in the limit. The entire bag could have been made up of either Blue (*Chen caerulescens*) or Snow (*Chen hyperborea* var.) geese or any combination of them.

The bag and possession limit of Coot or Mudhen was fifteen (15) in 1948. In 1949 and in 1950 the bag and possession limit of Coot or Mudhen was ten (10).

There was no open season on Wilson's or Jack Snipe (*Capella gallinago*), grebe (Colymbidae), rails (Rallidae, except Coot),

**WATERFOWL BAG CHECKS**

STATE CONSERVATION COMMISSION  
914 Grand Avenue, Des Moines, Iowa

County \_\_\_\_\_ Area \_\_\_\_\_ Date \_\_\_\_\_

Hunters seen but bags not checked \_\_\_\_\_

<b>Party number</b>	1	2	3	4	5	6	7	8	9	10	11	12	<b>Total</b>
Hunters in party													
Hours hunted													
None taken													
Mallard													
Black Duck													
Gadwall													
Baldpate													
Pintail													
GW Teal													
BW Teal													
Shoveller													
Wood Duck													
Redhead													
Ring-neck													
Canvasback													
Bluebill													
Golden-eye													
Bufflehead													
Ruddy Duck													
Merganser													
<b>Total Ducks</b>													
Canada Goose													
Blue Goose													
Snow Goose													
WF Goose													
Other Geese													
<b>Total Geese</b>													
Coots													
Dogs in Party													
Unretrieved Ducks													
Unretrieved Geese													
Banded Ducks shot previous year													
Remarks													

Figure 1. Sample of the tally card used by Conservation Officers in 1949 and 1950 to report the waterfowl kill. The tally card used in 1948 was changed to the present form in 1949.

and gallinules, Mourning Dove (*Zenaidura macroura* var.), Woodcock (*Philohela minor*), and Swan (Cygninae).

Conservation officers contacted waterfowl hunters in the field and filled out Waterfowl Bag Checks (Figure 1.) by completing the card forms. During this three year study 16,016 waterfowl hunters were contacted and their total bag consisted of 16,657 ducks, 1,387 geese, and 190 Coot (Figure 2). In 1948 officers checked 4,984 duck hunters and returned 541 bag check cards representing 72 counties in the state. This by no means included all the waterfowl killed in Iowa during the 1948 open season. It does, however, provide a sample of the kill in 1948, and data comparable with that

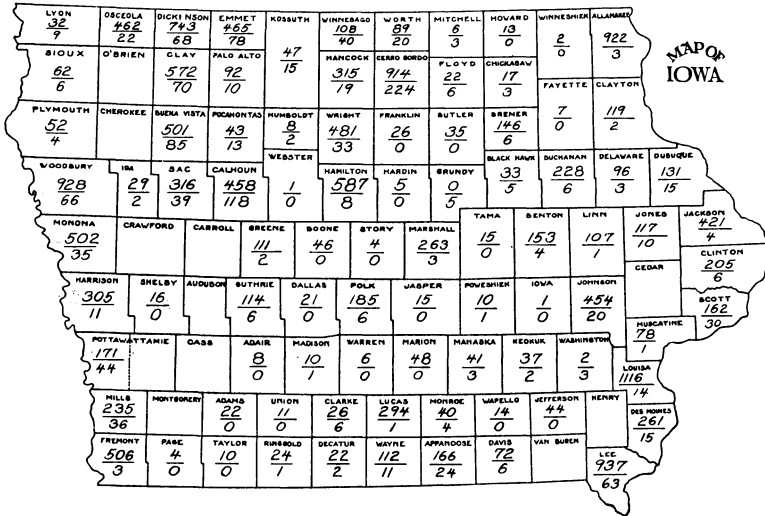


Figure 2. Distribution of wildfowl sample in Iowa. In each county the numerator denotes the number of ducks and the denominator the number of geese recorded from the 1948, 1949, and 1950 open seasons.

of the 1949 and 1950 bag checks. Conservation officers returned 651 cards representing 72 counties and 5,862 hunters in 1949, and 644 cards representing 71 counties and 5,170 hunters in 1950. Waterfowl Bag Checks for the 1948, 1949, and 1950 open seasons were combined and summarized by counties in Table 1.

Some important facts were apparent after comparing the 1948, 1949, and 1950 kill data. In 1948 the total recorded kill sample of 6,085 birds included sixteen species of ducks and mergansers. This sample compared favorably with the kill sample of 5,906 birds recorded during the 1949 open season, and with the sample kill of 4,666 birds recorded in 1950. In 1948 only 206 geese were recorded from the waterfowl bag checks cards, while in 1949 the exceptional goose kill of that year was represented by 740 geese of four species. In 1950 the kill sample of geese dropped to 441 birds.

Mallards (*Anas platyrhynchos*) totaled 54.7% of the aggregate kill sample or 3,327 birds in 1948. In 1949 Mallards totaled 46.3% of the kill or 2,735 birds; and in 1950 this species represented 50.2% of the sample or 2,344 birds. It is obvious that the Mallard is by far the most important species of waterfowl to the Iowa hunter and has maintained first place of numerical importance in the kill sample.

In 1948 the Blue-winged Teal (*Querquedula discors*) represented only a small 2.9% of the sample or 174 birds. In 1949 this species reached second place in numerical importance and represented

11.7% of the kill or 691 birds. Again in 1950 Blue-winged Teal were second in numerical importance according to the officer's bag checks, and totaled 13.7% of the recorded kill or 637 birds. The increased kill of Blue-winged Teal during the 1949 and 1950 open seasons, represented an important change in the kill status of this species. Blue-winged Teal have maintained the second position of numerical importance during 1949 and 1950 when the waterfowl season opened respectively on October 21st and on October 20th. In 1948, when the waterfowl season opened ten days later on October 29th, the Blue-winged Teal harvest was 8.8% less according to the officer's bag checks. This would indicate that the later opening date probably resulted in the reduced harvest of Blue-wings in 1948.

Green-winged Teal (*Nettion carolinense*) represented 12.6% of the kill sample or 766 birds in 1948. During the 1949 open season this species represented 11.4% of the kill or 670 birds. In 1950 Green-wings maintained third place in numerical importance for the second consecutive year, but dropped to 8.6% of the kill sample or 399 birds. Green-winged Teal have shown both a continuous numerical and percentage decrease since 1948. This decrease may indicate a downward trend in the Green-wing population, or at least decreasing abundance of the species in Iowa during the last three open seasons.

Bluebills (*Nyroca collaris*, *N. affinis*, and *N. marilla*) accounted for 7.2% or 439 birds during the 1948 bag check, but represented only 5.4% of the recorded sample or 317 birds in 1949. Bluebills again reached 7.5% of the kill sample representing 351 birds in 1950. The percent of bluebills recorded from the 1948 bag checks was practically identical to the percentage recorded from the 1950 kill sample.

Pintails (*Dafila acuta tzitzihoa*) represented 8.9% of the kill sample or 546 birds in 1948; reached 10.9% of the kill sample or 643 birds in 1949; and decreased to 6.2% or 291 birds in 1950. Pintails exchanged 4th and 5th place in the kill sample for the first time in 1950. This would indicate that Pintails and Bluebills have not established definite positions of numerical importance in the kill sample; and that the number of Pintails and Bluebills comprising future kill samples can be expected to fluctuate from one open season to the next.

In 1948 Wood Ducks accounted for 1.9% of the aggregate kill sample or 114 birds. In 1949 this species represented 2.3% of the kill sample or 133 birds, and reached sixth place in numerical importance in the 1950 kill sample representing 3.2% of the aggregate

kill or 148 birds. For three consecutive years bag checks have indicated an increased harvest of Wood Ducks in Iowa. It is probable that this also indicated an increased population of Wood Ducks and/or greater abundance of this species in the state during the open season.

In 1948, the twelve remaining species of ducks including the Blue-winged Teal and mergansers, represented in aggregate only 14.7% of the total kill; none of these twelve species exceeded 2.9% of the total kill. The remaining eleven species of ducks and mergansers, excluding the Blue-winged Teal, represented 12% of the total kill sample in 1949, and 10.6% of the kill in 1950. It is apparent that there has been little change in the percentage representing these eleven species in th kill sample during the last three open seasons (Table 2).

Blue Geese comprised 41.5% of the total goose kill in 1948; 51.3% in 1949, and 41.7% in 1950. Snow geese comprised 33.1% of the total goose sample in 1948, 25.6% in 1949, and 41.5% of the sample goose kill in 1950. Canada Geese increased from 19.0% of the goose sample in 1948 to 21.5% in 1949. In 1950 this species decreased to 16.6% of the sample goose kill. White-fronted Geese accounted for only a small percentage of the goose harvest in 1949 representing 1.2% of the kill sample, and again in 1950 only 0.2% of the sample.

Goose hunting was much better in 1949 than in 1948 or in 1950; and the goose harvest in Iowa during the last three open seasons was the poorest in 1948. Goose hunting was considered good in 1949, near average in 1948, and better than average in 1950.

The average hunter in Iowa bagged one duck in 2.3 hours of hunting in 1948. In 1949 the average hunter required 3.2 hours of hunting to kill one duck, and 4.1 hours in 1950. Waterfowl shooting in Iowa has been progressively poorer during the past three open seasons. Goose hunting was poorer in 1948 and 1950 than during the 1949 season. The average hunter required 67.6 hours afield to kill a goose in 1948, 25.4 hours in 1949, and the time required to kill a goose increased to 41.1 hours in 1950.

Hunters who had taken nothing averaged 2.2 hours in the field when checked by conservation officers in 1948, 2.8 hours in the field in 1949, and 3.3 hours in 1950. Throughout the state 4,984 duck hunters who had hunted 13,926 hours were checked during the 1948 open season. More hunters, 5,862 in 1949, were checked who had hunted fewer hours, or 18,802 hours, in 1949. In 1950 there were 5,170 hunters checked who had hunted 19,132 hours. Since 1948 the ag-

gregate kill sample has decreased in total number of waterfowl checked, while the total hours spent by hunters in the field has increased.

Conservation officers checked 822 two-man parties in 1948, 951 two-man parties in 1949, and 979 such parties in 1950. In 1948 there were 700 one-man parties checked hunting alone, 523 one-man parties in 1949, and 572 such parties checked in 1950. In 1948 there were 417 three-man parties checked in the field, 494 such parties in 1949, and 434 checked in 1950.

The data compiled during the last three years indicated that Mallards provided approximately one-half of the total ducks harvested in Iowa. Blue-winged Teal reached second place in numerical importance in both the 1949 and 1950 kill samples. In 1948 this species represented only a small 2.9% of the kill sample; and the data compiled during the three years has indicated that Blue-wings can be expected to represent about 12% of the aggregate kill sample when the waterfowl season opens on or about October 20th in Iowa. Green-winged Teal have shown both a continuous numerical and percentage decrease since 1948, while the sample kill of Wood Ducks has shown both a numerical and percentage increase. An increased harvest of any waterfowl species in Iowa indicates that more hunting pressure has been applied to the species during the open season, or an increased population existed, or that a greater abundance of the species was present in the state during the open season. Blue-bills have not established definite positions of numerical importance in the kill sample. The number of each of these species comprising future kill samples can be expected to fluctuate from one open season to the next. Of the ten remaining species of ducks and various mergansers, each can not be expected to contribute more than approximately 3% of the total kill sample and 12% in aggregate. The future goose harvest in Iowa can be expected to fluctuate greatly according to this study.

#### ACKNOWLEDGEMENTS

The writer is particularly indebted to Mr. E. B. Speaker, Superintendent of Biology of the State Conservation Commission, who initiated this study in Iowa, as well as to other members of the Conservation Commission for valuable assistance and encouragement.

**Table I**  
**Three-Year Recapitulation of Duck Kill by County**  
 1948-1949-1950

	Adair	Adams	Allamakee	Appanoose	Audubon	Benton	Black Hawk	Boone	Bremer
Total Number of Hunters	4	16	660	259		137	55	34	113
Total Hours Hunted	6	23	2312	777		327	146	124	446
None Taken:									
Number of Hunters	2	1	156	136		43	20	14	32
Hours Hunted	4	1	492	368		111	52	32	92
Mallard	8	6	494	117		74	16	20	86
Black Duck			38						
Gadwall		4	20				1		5
Baldpate			15				1	2	
Pintail			94	21		30	4	2	2
GW Teal			94			2	2	11	10
BW Teal			83	12		12	2		26
Shoveller		1	8			2		1	2
Wood Duck			62	3		2	2	3	1
Readhead						4		4	2
Ring-necked		11							1
Canvas-back			1	7		3			
Blue-bill			12			24	1		9
Golden-eye			1						
Buffle-head				2					
Ruddy Duck									2
Merganser				4			4	3	
<b>TOTAL DUCKS</b>	<b>8</b>	<b>22</b>	<b>922</b>	<b>166</b>		<b>153</b>	<b>33</b>	<b>46</b>	<b>146</b>
Canada Goose				5					
Blue Goose			3	17		2	1		5
Snow Goose				2		2	4		1
W. F. Goose									
Other Geese									
<b>TOTAL GEESE</b>	<b>0</b>	<b>0</b>	<b>3</b>	<b>24</b>		<b>4</b>	<b>5</b>		<b>6</b>



**Table I—Continued**  
**Three-Year Recapitulation of Duck Kill by County**  
 1948-1949-1950

	Buchanan	Buena Vista	Butler	Calhoun	Carroll	Cass	Cedar	Cerro Gordo	Cherokee
Total Number of Hunters	210	586	38	1074	10		2	860	
Total Hours Hunted	655	1414	68	2118	8		12	3386	
None Taken:									
Number of Hunters	32	187	9	681	10		2	246	
Hours Hunted	66	369	27	1103	8		12	753	
Mallard	105	309	12	193				531	
Black Duck								36	
Gadwall	10	19						21	
Baldpate				5				15	
Pintail	19	48	3	27				62	
GW Teal	46	104	2	62				92	
BW Teal	11	4	10	79				34	
Shoveller	1	3	2	12				56	
Wood Duck	14	1	1	16				18	
Redhead	4	1		26				6	
Ring-necked				2					
Canvas-back	6	1		10				5	
Blue-bill	10	5	3	18				34	
Golden-eye				2					
Buffle-head		5		6					
Ruddy Duck			2					4	
Merganser	2	1							
<b>TOTAL DUCKS</b>	<b>228</b>	<b>501</b>	<b>35</b>	<b>458</b>	<b>0</b>		<b>0</b>	<b>914</b>	
Canada Goose	4	32		25				8	
Blue Goose	1	19		59				162	
Snow Goose	1	34		34				51	
W. F. Goose								2	
Other Geese								1	
<b>TOTAL GEESE</b>	<b>6</b>	<b>85</b>	<b>0</b>	<b>118</b>	<b>0</b>		<b>0</b>	<b>224</b>	

**Table I—Continued**  
Three-Year Recapitulation of Duck Kill by County  
1948-1949-1950

	Chickasaw	Clarke	Clay	Clayton	Clinton	Crawford	Dallas	Davis	Decatur
Total Number of Hunters	14	44	863	223	159		44	97	20
Total Hours Hunted	49	71	4469	919	689		116	312	74
None Taken:									
Number of Hunters		22	454	101	45		29	35	11
Hours Hunted		32	2457	367	152		76	79	25
Mallard	8	6	226	46	129		20	36	5
Black Duck			1	7	4				
Gadwall			17	2	3				
Baldpate			4	4	1				
Pintail		5	74	9	21			8	
GW Teal	2		90	2	22		1	17	5
BW Teal	2	4	101	3				5	5
Shoveller		4	14		4			3	
Wood Duck	3		5	5				2	
Redhead	1		19	3	1				
Ring-necked		2							5
Canvas-back			9	4	4				
Blue-bill	1		8	32	16				2
Golden-eye		5	1	2					
Buffle-head			1						
Ruddy Duck			2					1	
Merganser									
<b>TOTAL DUCKS</b>	<b>17</b>	<b>26</b>	<b>572</b>	<b>119</b>	<b>205</b>		<b>21</b>	<b>72</b>	<b>22</b>
Canada Goose			19		1				
Blue Goose	2	5	16	1	3			6	
Snow Goose	1	1	35		2				2
W. F. Goose				1					
Other Geese									
<b>TOTAL GEESE</b>	<b>3</b>	<b>6</b>	<b>70</b>	<b>2</b>	<b>6</b>		<b>0</b>	<b>6</b>	<b>2</b>

**Table I—Continued**  
 Three-Year Recapitulation of Duck Kill by County  
 1948-1949-1950

	Delaware	Des Moines	Dickinson	Dubuque	Emmet	Fayette	Floyd	Franklin	Fremont
Total Number of Hunters	73	317	405	237	294	5	60	20	248
Total Hours Hunted	207	1278	665	1008	869	16	150	39	1403
None Taken:									
Number of Hunters	20	107	69	102	9	1	25	6	34
Hours Hunted	38	371	94	444	25	2	62	14	147
Mallard	46	111	243	60	105	3	7	17	251
Black Duck			4	5					
Gadwall	4		57		3		1		7
Baldpate	5	5	9		6				6
Pintail	4	6	63	19	22	1			37
GW Teal	20	7	131	4	82	2	5	8	151
BW Teal	5	10	67	2	199		6		28
Shoveller	1	4	42	6	22			1	9
Wood Duck	6	1	8	17	3	1	3		6
Redhead	2	3	47		4				1
Ring-necked			5		2				1
Canvas-back	3	10	27	1	1				
Blue-bill			94	40	17	12			9
Golden-eye				1					
Buffle-head			1						
Ruddy Duck			3	2	4				
Merganser			1	2					
<b>TOTAL DUCKS</b>	<b>96</b>	<b>261</b>	<b>743</b>	<b>131</b>	<b>465</b>	<b>7</b>	<b>22</b>	<b>26</b>	<b>506</b>
Canada Goose			31	9	7				
Blue Goose	2	15	10	4	30		1		
Snow Goose	1		27	2	41		4		1
W. F. Goose									
Other Geese							1		2
<b>TOTAL GEESE</b>	<b>3</b>	<b>15</b>	<b>68</b>	<b>15</b>	<b>78</b>	<b>0</b>	<b>6</b>		<b>3</b>

**Table I—Continued**  
 Three-Year Recapitulation of Duck Kill by County  
 1948-1949-1950

	Greene	Grundy	Guthrie	Hamilton	Hancock	Hardin	Harrison	Henry	Howard
Total Number of Hunters	204	3	246	493	213	4	131		6
Total Hours Hunted	490	1	494	1862	692	5	503		28
None Taken:									
Number of Hunters	115	3	154	139	51	1	11		
Hours Hunted	279	1	313	518	155	2	30		
Mallard	54		40	194	173	5	257		12
Black Duck				1	2				
Gadwall	2		10	18	13		2		
Baldpate	5		2	7	8				
Pintail	6		6	56	43		18		1
GW Teal	17		14	112	28		13		
BW Teal	3		2	83	23		7		
Shoveller	5		8	15	21				
Wood Duck				6	2		8		
Redhead	3		9	9	1				
Ring-necked			9	7					
Canvas back			1	7					
Blue-bill	15		11	62					
Golden-eye			1	1					
Buffle-head			1						
Ruddy Duck	1			8	1				
Merganser				1					
<b>TOTAL DUCKS</b>	<b>111</b>		<b>114</b>	<b>587</b>	<b>315</b>	<b>5</b>	<b>305</b>		<b>13</b>
Canada Goose	2			2	7		9		
Blue Goose		5	4	5	6		2		
Snow Goose			2	1	6				
W. F Goose									
Other Geese									
<b>TOTAL GEESE</b>	<b>2</b>	<b>5</b>	<b>6</b>	<b>8</b>	<b>19</b>		<b>11</b>		

**Table I—Continued**  
 Three-Year Recapitulation of Duck Kill by County  
 1948-1949-1950

	Humboldt	Ida	Iowa	Jackson	Jasper	Jefferson	Johnson	Jones	Keokuk
<b>Total Number of Hunters</b>	9	16	5	292	24	81	527	169	19
<b>Total Hours Hunted</b>	14	32	20	1209	43	109	1558	549	47
None Taken:									
<b>Number of Hunters</b>		4		42	12	41	198	74	2
<b>Hours Hunted</b>		6		115	27	50	628	189	4
Mallard	4	27		227	6	4	251	39	20
Black Duck				5			3		
Gadwall				4			10	1	
Baldpate				1		2	2		1
Pintail	2			28			28	4	1
GW Teal	1			33	1	2	36	36	
BW Teal	1			10	4		18	32	
Shoveller				9			11	1	
Wood Duck			1	61	1		4	2	1
Redhead									4
Ring-necked					1		16		
Canvas-back							6		
Blue-bill		2		41	2	36	54	2	4
Golden-eye							5		
Buffle-head				1			1		
Ruddy Duck				1			3		4
Merganser							6		2
<b>TOTAL DUCKS</b>	8	29	1	421	15	44	454	117	37
Canada Goose		2					12		2
Blue Goose				3			4	6	
Snow Goose	1			1			4	4	
W. F. Goose	1								
Other Geese									
<b>TOTAL GEESE</b>	2	2		4			20	10	2

**Table I—Continued**  
 Three-Year Recapitulation of Duck Kill by County  
 1948-1949-1950

	Kossuth	Lee	Linn	Louisa	Lucas	Lyon	Madison	Mahaska	Marion
Total Number of Hunters	82	599	78	632	241	19	73	68	32
Total Hours Hunted	178	2150	201	2670	816	74	146	189	88
None Taken:									
Number of Hunters	29	128	15	84	35		55	34	9
Hours Hunted	60	363	38	330	93		107	108	17
Mallard	32	514	77	807	145	18	5	22	37
Black Duck	1	4		4	4				
Gadwall	2	8	5	11	6	2		1	
Badpate		4		4	5			3	
Pintail	4	73	7	46	6			1	4
GW Teal	2	84	7	52	5		1	3	
BW Teal	2	64		18	8	3	1	3	
Shoveller		5	2	13	3				
Wood Duck	4	9		12	6			3	
Redhead		9		1		3		2	
Ring-necked		2		6	1				
Canvas-back		35		14	4				
Blue-bill		114	7	102	67	6		3	7
Golden-eye		3			6		3		
Buffle-head		3	2	3	20				
Ruddy Duck		6		21	5				
Merganser				2	3				
<b>TOTAL DUCKS</b>	<b>47</b>	<b>937</b>	<b>107</b>	<b>1116</b>	<b>294</b>	<b>32</b>	<b>10</b>	<b>41</b>	<b>48</b>
Canada Goose	2	2				1	1	3	
Blue Goose	8	39	1	12		4			
Snow Goose	3	21		2	1	4			
W. F. Goose		1							
Other Geese	2								
<b>TOTAL GEESE</b>	<b>15</b>	<b>63</b>	<b>1</b>	<b>14</b>	<b>1</b>	<b>9</b>	<b>1</b>	<b>3</b>	

**Table I—Continued**  
**Three-Year Recapitulation of Duck Kill by County**  
 1948-1949-1950

	Marshall	Mills	Mitchell	Monona	Monroe	Montgomery	Muscatine	O'Brien	Osceola
Total Number of Hunters	226	184	28	305	66		70		259
Total Hours Hunted	729	564	63	1619	89		225		784
None Taken:									
Number of Hunters	56	40	13	32	33		14		36
Hours Hunted	163	94	33	166	42		42		88
Mallard	124	136	2	277	30		31		180
Black Duck	3		1						1
Gadwall				14					53
Baldpate		1		3			1		1
Pintail	59	28		42	6		7		46
GW Teal	3	49	1	75			8		32
BW Teal	25	12	1	28	3		6		64
Shoveller		3	1	17			1		12
Wood Duck	20	5		12			4		7
Redhead				3			6		8
Ring-necked							2		2
Canvas-back				4					3
Blue-bill	21	1		22			11		35
Golden-eye				2					
Buffle-head				3					
Ruddy Duck	1								16
Merganser	7				1		1		2
<b>TOTAL DUCKS</b>	<b>263</b>	<b>235</b>	<b>6</b>	<b>502</b>	<b>40</b>		<b>78</b>		<b>462</b>
Canada Goose		2		13	1				
Blue Goose	2	20	1	8	3		1		12
Snow Goose	1	14		12					10
W. F. Goose									
Other Geese			2	2					
<b>TOTAL GEESE</b>	<b>3</b>	<b>36</b>	<b>3</b>	<b>35</b>	<b>4</b>		<b>1</b>		<b>22</b>

**Table I—Continued**  
Three-Year Recapitulation of Duck Kill by County  
1948-1949-1950

	Page	Palo Alto	Plymouth	Pocahontas	Polk	Pottawattamie	Poweshiek	Ringgold	Sac
Total Number of Hunters	2	48	53	57	444	172	24	20	857
Total Hours Hunted	3	225	105	141	1029	878	38	20	1564
None Taken:									
Number of Hunters		10	14	6	203	33	14	9	449
Hours Hunted		48	24	8	443	209	22		766
Mallard	4	43	23	11	131	97	3	2	112
Black Duck		1							2
Gadwall		1		1	2			2	11
Baldpate									2
Pintail		9	3	4	27	17		12	10
GW Teal		12	3	13	3	11	2		36
BW Teal		18	16	4	15	20	1		54
Shoveller		3	4	6	3	3			12
Wood Duck		2		4	2	2			2
Redhead		2	3			7	1		18
Ring-necked									12
Canvas-back						9			5
Blue-bill					2			8	33
Golden-eye							1		1
Buffle-head									1
Ruddy Duck						5			2
Merganser		1					2		3
<b>TOTAL DUCKS</b>	<b>4</b>	<b>92</b>	<b>52</b>	<b>43</b>	<b>185</b>	<b>171</b>	<b>10</b>	<b>24</b>	<b>316</b>
Canada Goose		4	4	1	1	7			7
Blue Goose		1		6	5	17		1	12
Snow Goose		5		6		20	1		10
W. F. Goose									4
Other Geese									6
<b>TOTAL GEESE</b>		<b>10</b>	<b>4</b>	<b>13</b>	<b>6</b>	<b>44</b>	<b>1</b>	<b>1</b>	<b>39</b>



**Table I—Continued**  
**Three-Year Recapitulation of Duck Kill by County**  
 1948-1949-1950

	Scott	Shelby	Sioux	Story	Tama	Taylor	Union	Van Buren	Wapello
Total Number of Hunters	150	6	88	5	39	9	14		27
Total Hours Hunted	480	12	180	14	76	13	35		88
None Taken:									
Number of Hunters	31	2	39		23	2	7		15
Hours Hunted	86	4	87		42	3	20		51
Mallard	99	16	39	1	9	6	6		9
Black Duck	6								
Gadwall									1
Baldpate									
Pintail	10		2	1	3		1		
GW Teal	10		3				2		
BW Teal	6		13				1		
Shoveller	1		5				1		
Wood Duck	9								
Redhead	1			1					
Ring-necked							3		
Canvas-back	2				2				
Blue-bill	18			1	1				3
Golden-eye									
Buffle-head									
Ruddy Duck									
Merganser							1		1
<b>TOTAL DUCKS</b>	<b>162</b>	<b>16</b>	<b>62</b>	<b>4</b>	<b>15</b>	<b>10</b>	<b>11</b>		<b>14</b>
Canada Goose	5								
Blue Goose	21		2						
Snow Goose	3		4						
W. F. Goose	1								
Other Geese									
<b>TOTAL GEESE</b>	<b>30</b>		<b>6</b>						

**Table I—Continued**  
 Three-Year Recapitulation of Duck Kill by County  
 1948-1949-1950

	Warren	Washington	Wayne	Webster	Winneshiek	Woodbury	Worth	Wright	
Total Number of Hunters	4	8	123	18	121	2	789	114	237
Total Hours Hunted	4	18	220	46	345	6	2894	202	827
None Taken:									
Number of Hunters		2	31	16	24		319	32	23
Hours Hunted		6	79	41	60		976	71	92
Mallard	6	2	50		53	1	429	25	189
Black Duck			1		1				
Gadwall			2		1		41		5
Baldpate					1		11		
Pintail			4		9		205	2	58
GW Teal			1		27		46	15	62
BW Teal			14		6		75	6	122
Shoveller					6		45	19	25
Wood Duck			1	1			10		11
Redhead					4		19	1	
Ring-necked							35	1	
Canvas-back									
Blue-bill			33			1	12	15	8
Golden-eye			2						
Buffle-head									
Ruddy Duck			4					5	1
Merganser									
<b>TOTAL DUCKS</b>	<b>6</b>	<b>2</b>	<b>112</b>	<b>1</b>	<b>108</b>	<b>2</b>	<b>928</b>	<b>89</b>	<b>481</b>
Canada Goose			6				25	4	5
Blue Goose			3	2	17		22	8	18
Snow Goose			3		17		19	8	10
W. F. Goose					6				
Other Geese									
<b>TOTAL GEESE</b>	<b>3</b>	<b>11</b>	<b>40</b>	<b>40</b>	<b>66</b>	<b>20</b>	<b>33</b>		

**Table II**  
 Combined Totals and Percentages  
 1948-1949-1950

	Total Recorded Kill by species 1948	Total Recorded Kill by species 1949	Total Recorded Kill by species 1950	Combined Total Recorded kill by species 1948-1949-1950
Total Number of Hunters	4,984	5,862	5,170	16,016
Total Hours Hunted	13,926	18,802	19,132	51,860
None Taken:				
Number of Hunters	1,463	2,021	1,921	5,405
Hours Hunted	3,171	5,563	6,340	15,074
Mallard	3,327	2,735	2,344	8,406
Black Duck	38	26	71	135
Gadwall	120	185	98	403
Baldpate	58	34	50	142
Pintail	546	643	291	1,480
GW Teal	766	670	399	1,836
BW Teal	174	691	637	1,502
Shoveller	175	192	91	458
Wood Duck	114	133	148	395
Redhead	102	79	62	243
Ring-necked	48	52	26	126
Canvas-back	47	94	43	184
Blue-bill	439	317	351	1,107
Golden-eye	21	7	9	37
Buffle-head	30	11	9	50
Ruddy Duck	61	24	19	104
Merganser	19	13	18	51
<b>TOTAL DUCKS</b>	<b>6,085</b>	<b>5,906</b>	<b>4,666</b>	<b>16,657</b>
Canada Goose	39	159	73	271
Blue Goose	84	380	181	645
Snow Goose	70	189	180	439
W. F. Goose		9	7	16
Other Geese	13	3		16
<b>TOTAL GEESE</b>	<b>206</b>	<b>740</b>	<b>441</b>	<b>1,387</b>

**Table II—Continued**  
**Combined Totals and Percentages**  
**1948-1949-1950**

	Total Recorded Kill by Percent 1948	Total Recorded Kill by Percent 1949	Total Recorded Kill by Percent 1950	Gain or Loss by Percent 1948-1949	Gain or Loss by Percent 1949-1950
Total Number of Hunters					
Total Hours Hunted					
None Taken:					
Number of Hunters					
Hours Hunted					
Mallard	54.7%	46.3%	50.2%	L 8.4%	G 3.9%
Black Duck	0.6	0.4	1.5	L 0.2	G 1.1
Gadwall	2.0	3.1	2.1	G 1.1	L 1.0
Baldpate	0.9	0.6	1.1	L 0.3	G 0.5
Pintail	8.9	10.9	6.2	G 2.0	L 4.7
GW Teal	12.6	11.4	8.6	L 1.2	L 2.8
BW Teal	2.9	11.7	13.7	G 8.8	G 2.0
Shoveller	2.9	3.2	1.9	G 0.3	L 1.3
Wood Duck	1.9	2.3	3.2	G 0.4	G 0.9
Redhead	1.7	1.3	1.3	L 0.4	same
Ring-necked	0.8	0.9	0.6	G 0.1	L 0.3
Canvas-back	0.8	1.6	0.9	G 0.8	L 0.7
Blue-bill	7.2	5.4	7.5	L 1.8	G 2.1
Golden-eye	0.3	0.1	0.2	L 0.2	G 0.1
Buffle-head	0.5	0.2	0.2	L 0.3	same
Ruddy Duck	1.0	0.4	0.4	L 0.6	same
Merganser	0.3	0.2	0.4	L 0.1	G 0.2
<b>TOTAL DUCKS</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>		
Canada Goose	19.0%	21.5%	16.6%	G 2.5%	L 4.9%
Blue Goose	41.5	51.3	41.7	G 9.8	L 9.6
Snow Goose	33.1	25.6	41.5	L 7.5	G 15.9
W. F. Goose		1.2	0.2		L 1.0
Other Geese	6.4	0.4			
<b>TOTAL GEESE</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>		

IOWA STATE CONSERVATION COMMISSION  
 DES MOINES, IOWA