BRANCH OF WILDLIFE REFUGES

NARRATIVE REPORT

ROUTING SLIP

DATE May 11, 1954

Mrs. Salyer

Mr. Dahms

Mr. Krumbes

Miss Baum

Section of Operations:

Mr. Ball

Dr. Morley

Mr. Regan MJR

Section of Habitat Improvement:

Mr. Arrington REG

Mr. Kubischek

Mr. Bourn WJSB

Dr. Stiles WJSS

Section of Land Management:

Mr. Aldrich CSA

Mr. Davis

Stenographers:

REFUGE CALHOUN & BATCHTOWN seat of Commissioner

PERIOD January-April, 1954

CALHOUN AND BATCHTOWN REFUGES
NARRATIVE REPORT
JANUARY, FEBRUARY, MARCH, APRIL, 1954

I. GENERAL

A. Weather Conditions:

The maximum temperatures in January and April were lower this year than for the same months a year ago. February and March had a higher reading. Minimum readings were lower in every month during the period. During the last part of March and the first part of April high winds occurred, reaching tornado proportions at times, and damage to private property was done.

Relative readings for this period and the same period last year are shown below:

Month	Year	Maximum	Minimum	Precipitation
January	1953	64	12	2.12
	1954	63	4	1.25
February	1953	64	19	1.38
	1954	74	15	1.04
March	1953	73	25	3.62
	1954	76	15	1.19
April	1953	90	34	3.09
	1954	87	22	3.58
			1953 Total	10.19
			1954 Total	7.06

Precipitation for the period was 7.06, compared to 10.19 for the same period a year ago. All months except April showed less rain this year than a year ago. It is considered very dry here.

B. Water Conditions:

The river was lower in all four months than for the same period a year ago. There is no high water in this portion of the river yet. Indications are that there might not be any high water this spring.

The fluctuations of the dam were not bad in Pool 26. There was a drawdown in Pool 25 during the month of January which almost drained the Batchtown Refuge, but levels came back to normal in late February.

A comparison of pool levels in Pool 26, compared to the same period in 1953, is shown in the following table:

Month	Year	High	Low	Difference
January	1953	15.1	14.6	.05
	1954	15.2	14.1	1.1
February	1953	15.5	14.5	1.0
	1954	15.3	14.2	1.1
March	1953	16.0	14.9	1.1
	1954	15.9	14.5	1.4
April	1953	17.2	15.1	2.1
	1954	15.7	15.0	.07

Maximum monthly variation in 1954 was 1.1, compared with 2.1 in 1953. The river never froze over during the period.

II. WILDLIFE

A. Migratory Birds:

1. Populations and Behavior:

(a) Waterfowl:

The duck population was higher this spring than last year. However, like last year, there was a big population at the beginning of the period. Throughout the period it was difficult to tell when new ducks came in or went out as there was a constant dribble of birds through.

On the Calhoun Refuge there were 203,150 ducks present the first week of the period, including 200,000 mallards and 200 blacks. This number dropped the second week to 22,500, but on the third week the number came back up to 103,700. From then on the population varied up and down the rest of the period. At the end of the period we had very few ducks in the area. The population of ducks we had here in January did not go south. Instead they went up to the Sny bottoms.

Mallards were present in numbers when the report period opened; peaked January 9 with 200,000; dropped to 500 birds on April 9; and there were 100 mallards at the close of the period.

Blacks were also present when the report period opened; peaked at 400 on March 27; and 100 were present on April 9. Very few were left at the end of the period.

Gadwall were present only from March 27 to April 3; peaked at 200 twice on both dates; and were last seen April 3.

Pintails were first seen the week of January 9, with 2,000 birds. On March 27 this species peaked at 3,000, and they were last seen on April 3.

Green-wing teal were not seen throughout the period. Blue-wing teal made their appearance March 20, with 500 birds; peaked at 6,000 birds on April 3; and about that many birds were present on April 10. At the end of the period several were present in the area.

Shovellers arrived the week of March 27, with 200 birds; and peaked at 500 on April 19. It is estimated that 200 were present at the end of the period.

Redheads were first observed on February 6, with 100 birds, and never got higher than that through the period. They were last observed on March 27.

Scaup were here at the start of the period, with 500 birds. They peaked at 36,000 on April 3, and about 500 were here at the end of the period.

Goldeneye showed up January 2, and were here throughout the period, peaking at 200 February 6 and 13. They were last observed March 27, with 100 birds present.

Buffle-head were not observed during the period, compared with 800 last year.

Mergansers were present from the first week in January to April 3; peaked at 400 birds on February 13; and were last observed on April 3, with 200 birds.

It is estimated that 262,100 ducks used the Calhoun Refuge this spring, compared to 341,600 in the spring of 1953. The peak population for Calhoun occurred the week ended January 9, when numbers reached 203,150 birds. Peak numbers in 1953 were found the week ended February 21, with only 175,000 ducks present.

For the period, Calhoun registered 4,947,950 duck days use, compared to 8,668,800 days use for the same period in 1953.

Thus, although the peak population was higher than a year ago, and while total waterfowl using the area was about 2/3 as great as 1953, it can be seen that duck days use amounted to only about half the use a year ago.

Mallards accounted for about 70% of total use, while all puddlers accounted for 3,900,400 days use. Divers, on the other hand, made up only 1,047,550 days use this spring.

There was a tremendous increase in ruddy ducks on the Calhoun Refuge this spring, when the peak reached 5,000 birds for a three week period. A year ago this species peaked at 800 birds. This spring there were 147,000 days use made by ruddies, compared to only 14,000 days in 1953, or only about 10% of the use made this year.

Scaup, too, showed an increase, with a peak of 36,000 this year, compared to 30,000 in 1953. However, total days use was down this spring, when only 632,100 days use was recorded, compared to 956,900 days use in 1953.

There was a movement of waterfowl in the area starting on January 16, when a lot of the birds from Calhoun Refuge moved north to the Sny bottoms. They continued to use the Sny until they finally moved north. Large numbers of birds were observed moving through, but not stopping on either Calhoun or Batchtown Refuges.

On the Batchtown Refuge an estimated 238,000 ducks appeared this spring, compared to 131,630 in 1953. The peak population on Batchtown this spring was 203,000 the week ended January 30.

On the Batchtown Refuge 150,000 mallards were present at the beginning of the report period, compared to 15,000 in 1953. This species peaked at 200,000 the fourth week of the period, and 100 were still present when the period closed.

Blacks were observed as the period opened, with 200 present. This number remained constant until the week ended April 3, when 500 were present for the peak numbers. There were 25 blacks present when the period closed.

Gadwall were first seen and peaked at 300 birds the week ended February 13; and they were last seen the week ended April 17, when 100 were counted.

Pintails arrived the first week of January, with 2,000 birds; they peaked at 10,000 the week ended March 27; and were last seen on April 3, when 300 were found.

No green-winged teal were seen this spring. Blue-winged teal, however, appeared the week ended March 20, when 500 appeared; peaked at 5,500 on April 10; and 500 were present as the period ended.

Shovellers were first observed the week ended March 27, with 200 birds present; peaked from April 3-10 at 1,000; and 200 were present as the period closed.

Wood ducks arrived the week ended March 20, when 200 birds came in; peaked at 1,000 the week ended April 3; and 300 were still present at the end of the period.

Redheads were present the first week of the period (100 present), but were not seen again until the week ended March 27, when the peak of 150 occurred. This was also the last occurrence of this species.

Scaup showed some increase this spring. As the period opened, 2,000 were present. The species peaked at 10,000 the week ended April 3, and 100 were present as the period closed. There was an estimated 244,300 days use by this species, compared to 210,350 a year ago.

Golden-eyes were present from the beginning of the period, when 100 were seen until the week ended March 27, when 200 were found.

Bufflehead were first observed the week ended March 20, with 100 birds. This represents the peak and last seen data too, for they were found only during that week.

Ruddies, first appearing the week ended February 27, when 400 birds arrived, showed quite an increase this spring. The peak of 2,000 this spring, compared to last year's peak of only 300, indicates the increase. Days use this year totaled 48,300, compared to only 6,300 days in 1953.

This spring an estimated 8,430,800 days use was made of Batchtown Refuge, compared to 2,253,825 days a year ago. Thus, we had almost four times as much use of Batchtown this year as last.

Mallards comprised 7,428,400 of the total days use, for a preponderant majority. Puddlers totaled 7,983,325 days use, compared to 447,475 days use by divers.

The following table shows peak concentrations of puddlers and divers, together with estimated duck days use, for the Calhoun and Batchtown Refuges:

	Peak Concentrations		Duck Day Use	
	Calhoun	Batchtown	Calhoun	Batchtown
Puddle ducks:				
Mallard	200,000	200,000	3,535,000	7,428,400
Black	400	500	19,600	22,575
Gadwall	200	300	3,500	4,900
Baldpate	3,000	4,000	58,100	90,650
Pintail	3,000	10,000	112,700	256,200
B.w. teal	6,000	5,500	147,000	136,500
Shoveller	500	1,000	12,600	23,100
Wood duck	300	1,000	11,900	21,000
TOTALS			3,900,400	7,983,325
Divers:				
Redhead	100	150	3,850	1,750
Ring-neck	3,000	2,000	51,100	108,500
Canvas-back	4,000	400	179,900	14,525
Scaup	36,000	10,000	632,100	244,300
Golden-eye	200	200	9,800	11,900
Bufflehead	-	100	-	700
Ruddy	5,000	2,000	147,000	48,300
Mergansers	400	400	16,800	17,500
Other ducks	1,000	-	7,000	-
TOTALS			1,047,550	447,475
GRAND TOTALS			4,947,950	8,430,800

(b) Geese:

Canada geese were present on Calhoun Refuge all winter, with not less than 500 present. They peaked at 4,000 the week ended March 13; and were last seen the week of April 3, when 50 were still present. An estimated 71,750 days use was made by Canada geese.

No Canada geese occurred throughout the spring on the Batchtown Refuge.

Blue geese used both Calhoun and Batchtown Refuges this spring. However, while they were present throughout the spring on Calhoun, from the peak of 1,200 as the period opened to an average of 500 during the period, they were found only once on Batchtown, where 200 were found the week ended April 3. Goose days use of Calhoun by blue geese amounted to 56,000 days, compared to only 1,400 days use on Batchtown.

Snow geese followed pretty much the same pattern. As the period opened, 1,000 were present on Calhoun, remaining all

winter at around 500 birds; and peaking at 1,500 the week ended March 13. Snow geese used Calhoun Refuge a total of 58,800 days. On Batchtown, however, only 200 were seen during the spring. These occurred the week ended April 3, the same week the blues were present. A total of only 1,400 days use was made of the Batchtown Refuge by snow geese. Probably the 200 each of snows and blues which were found on Batchtown were some which dropped in from the Calhoun flock.

(c) Swans:

None were observed on either area this period.

(d) Egrets:

Three egrets were observed on Stump Lake April 20, compared with none last year.

(e) Shorebirds and Other Water Birds:

Wilson snipe are increasing in this area. About 100 birds have been observed this spring, compared with 12 last year. Killdeer and plovers are here in good numbers; sandpipers are here in good numbers; and a few yellow-legs were observed.

Blue heron are here in good numbers, with an estimated 200 birds in the area. They are back at their old nesting place on the Missouri shore and offshore Helmbolt Island. There are an estimated 175 birds in the same area as last year.

2. Food and Cover:

The food conditions were the best in several years, as there was open water all winter and the sharecropping fields had plenty of corn for ducks to feed on. The cornfields adjacent to the refuge were a big factor in feeding the duck population during this period. The ducks and geese fed throughout the Mississippi River bottoms from Alton, Illinois, to Hannibal, Missouri, and up the Illinois River bottoms. Lots of blue-wing teal were reported using the inland ponds this spring.

B. Upland Game Birds:

No upland game birds are present on either the Batchtown or Calhoun Refuges.

There is ample food and cover present on both areas to sustain fairly high population of these birds in event any should

become established in the areas. The high water in the spring discourages upland game from using the bottomlands.

C. Big Game Animals:

No big game animals are present on either area.

D. Fur Bearers:
(a) Muskrat:

The muskrat population is looking better in both areas due to the low water the last two years. Commercial fishermen working in the refuge report that lots of muskrats were observed nesting in old stumps this spring. They all report that we have an increase over last year. More pushups have been seen this spring than last year.

(b) Mink:

The mink population is at a standstill. No more signs have been observed this spring than last year, and fishermen report no increase in this species. They have been trapped more than any other animals as the price was better, and this may be holding them down.

(c) Skunk:

No skunk signs have been noted on either area this spring.

(d) Beaver:

Beaver are increasing on all islands on the Mississippi and Illinois Rivers. In some areas a considerable amount of timber is being cut by them each year. None were reported caught last fall by trappers, who reported the price was too low to pay for the time and effort.

(e) Otter:

No otter sign has been noted on either area.

III. REFUGE DEVELOPMENT AND MAINTENANCE

A. Physical Development:

During the period the west line of the Calhoun Refuge was surveyed out and reposted to bring the boundary back where it belongs. Several boundary lines in the Calhoun area were brushed out and the posting gone over.

In the Batchtown Refuge area the exterior boundary line in the Blackwell area was taken out to conform to the current land status. This was also done in the Gilead Club area. The signs removed were stock-piled on Maple Island for use when the new refuge line is surveyed out and reposted.

B. Planting:

4. Cultivated Crops:

During the period farm plans for the agricultural lands around Batchtown and Calhoun Refuges, which was made available to the Service under the recently consummated General Plan and Cooperative Agreement, were worked out on a tentative basis.

There were six agricultural units, with 105 acres, set up on the Batchtown Refuge, and 14 units, with 300 acres, set up on the Calhoun Refuge. Permits for sharecropping these lands have been issued, and working of the lands has started.

Farm plans for the two refuges were submitted and tentatively approved by the Regional Office during the period.

VI. PUBLIC RELATIONS

A. Recreational Use:

During the period the following recreational use was estimated for the two refuge units

Refuge	Days Use Fishermen	Miscellaneous Use
Batchtown	2,390	1,135
Calhoun	2,515	1,550
	4,905	2,685

B. Refuge Visitors:

Superintendent Steele was here on January 16 to discuss routine refuge matters.

Refuge Management Biologist Green was here during the period February 9-14. While here he assisted in mapping farm units on the two refuges and in gathering necessary information for preparing the farm plans. He also assisted in surveying out the west boundary of Calhoun Refuge and in reposting the same.

Missouri Conservation Warden Robert Bright visited the areas on February 20.

E. Fishing:

Pole and line fishing started in February and was going good by the middle of March. Boat livery operators were doing good business by the end of the period. There have been some good catches of crappie and bluegills, and some large bass have been caught.

Commercial fishing was very good this period on the Mississippi River. Good catches of big catfish were taken; and excellent catches of buffalo and carp were taken on both the Mississippi and the Illinois Rivers.

F. Violations:

No cases were made during the period. No violations were observed, nor were any violations reported to the Refuge Manager this spring.

VII. OTHER ITEMS

A. Items of Interest:

During the period the 1948 Chevrolet sedan delivery, which served faithfully for many years, was exchanged for a new Ford sedan delivery. This is one of the new cars with glass windows cut in the sides, which will make it much safer to operate than the old solid bodies.

Superintendent of Refuges

May 3, 1954

3-1750
Form NR-1
(Rev. March 1953)

WATERFOWL

REFUGE BATCHTOWN MONTHS OF January TO April, 1954

(1) Species	(2) Weeks of reporting period 1	2	3	4	5	6	7	8	9	10
Swans:										
Whistling										
Trumpeter										
Geese:										
Canada										
Cackling										
Brant										
White-fronted										
Snow										
Blue										
Other										
Ducks:										
Mallard	150,000	160,700	175,000	200,000	150,000	100,000	40,000	10,000	25,000	10,000
Black	100		200	200	200	200	200	200	200	200
Gadwall						300				
Baldpate							100	100	2,000	2,000
Pintail	500				300		5,000	500	5,000	5,000
Green-winged teal										
Blue-winged teal										
Cinnamon teal										
Shoveler										
Wood										
Redhead	100									
Ring-necked	1,000	2,500	2,000	2,000	2,000	2,000	1,000	300	200	500
Canvasback		50	100	200	200	200	300	200	100	100
Scaup	300			200	300	500	1,000	500	500	3,000
Goldeneye	100	100		100	200	200	200	200	200	
Bufflehead										
Ruddy								400	500	500
Other Merganser	100	100	200	300	300	400	400	200	100	100
Coot:										

Int. Dup. Sec.,
Wash., D. C. 37944

3-7150a
Cont. NR-1
(Rev. March 1953)

WATERFOWL
(Continuation Sheet)

REFUGE BATCHTOWN MONTHS OF January TO April, 19 54

(1) Species	(2) Weeks of reporting period 11	12	13	14	15	16	17	18	(3) Estimated waterfowl days use	(4) Production Broods seen	Estimated total
Swans:											
Whistling											
Trumpeter											
Geese:											
Canada											
Cackling											
Brant											
White-fronted											
Snow			200						1,400		
Blue			200						1,400		
Other											
Ducks:											
Mallard	15,000	15,000	8,000	2,000	250	150	100		7,428,400		
Black	300	400	500	200	50	50	25		22,575		
Gadwall		100	100	100	100				4,900		
Baldpate	3,000	4,000	1,000	200	300	200	50		90,650		
Pintail	10,000	10,000	300						256,200		
Green-winged teal											
Blue-winged teal	500	2,000	5,000	5,500	4,000	2,000	500		136,500		
Cinnamon teal											
Shoveler		200	1,000	1,000	500	400	200		25,100		
Wood	200	400	1,000	500	300	300	300		21,000		
Redhead		150							1,750		
Ring-necked	1,000	1,000							108,500		
Canvasback	200	400	25						14,525		
Scaup	5,000	8,000	10,000	5,000	300	200	100		244,300		
Goldeneye	200	200							11,900		
Bufflehead	100								700		
Ruddy	500	2,000	2,000	1,000					48,300		
Other Mergansers	100	100	100						17,500		
Coot:	200	2,000	2,000	4,000	1,500	1,000	1,000		[illegible]		

(over)

	(5) Total Days Use	(6) Peak Number	(7) Total Production
Swans	None		
Geese	2,800	400	
Ducks	8,430,800	203,000	
Coots	81,900	4,000	

SUMMARY

Principal feeding areas

Principal nesting areas

Reported by Edw. A. Davis

INSTRUCTIONS (See Secs. 7531 through 7534, Wildlife Refuges Field Manual)

(1) Species: In addition to the birds listed on form, other species occurring on refuge during the reporting period should be added in appropriate spaces. Special attention should be given to those species of local and national significance.

(2) Weeks of Reporting Period: Estimated average refuge populations.

(3) Estimated Waterfowl Days Use: Average weekly populations x number of days present for each species.

(4) Production: Estimated number of young produced based on observations and actual counts on representative breeding areas. Brood counts should be made on two or more areas aggregating 10% of the breeding habitat. Estimates having no basis in fact should be omitted.

(5) Total Days Use: A summary of data recorded under (3).

(6) Peak Number: Maximum number of waterfowl present on refuge during any census of reporting period.

(7) Total Production: A summary of data recorded under (4).

Interior Duplicating Section, Washington, D. C. 37944
1953

3-1750
Form NR-1
(Rev. March 1953)

WATERFOWL

REFUGE CALHOUN MONTHS OF January TO April, 1954

(1) Species	(2) Weeks of reporting period 1	2	3	4	5	6	7	8	9	10
Swans:										
Whistling										
Trumpeter										
Geese:										
Canada	500	500	500	500	500	500	500	1,000	1,000	4,000
Cackling										
Brant										
White-fronted										
Snow	1,000	600	500	300	300	700	700	700	700	1,500
Blue	1,200	900	700	400	400	500	500	500	500	1,000
Other										
Ducks:										
Mallard	200,000	20,100	100,000	75,000	30,000	20,000	25,000	10,000	8,000	5,000
Black	200		300	200	200	200	300	200	100	100
Gadwall										
Baldpate			100		100	100	200	100	3,000	2,000
Pintail	2,000	2,000	200		500	500	3,000	300	500	2,000
Green-winged teal										
Blue-winged teal										
Cinnamon teal										
Shoveler										
Wood										
Redhead	100	50			100	100	100			
Ring-necked	200		200	200	200			3,000	500	1,000
Canvasback	50	50	2,500	2,500	2,500	3,000	3,000	3,000	3,000	1,000
Scaup	300		100	100	200	400	1,000	1,000	400	10,000
Goldeneye	100	100	100	100	200	200	200	100	100	
Bufflehead										
Ruddy								2,000	2,000	1,000
Other Mergansers	200	200	200	200	200	400	300	100	100	100
Coot:										

Int. Dup. Sec.,
Wash., D. C.

3-7150a
Cont. NR-1
(Rev. March 1953)

WATERFOWL
(Continuation Sheet)

REFUGE CALHOUN MONTHS OF January TO April , 19 54

(1) Species	(2) Weeks of reporting period: 11	12	13	14	15	16	17	18	(3) Estimated waterfowl days use	(4) Production: Broods seen	Estimated total
Swans:											
Whistling											
Trumpeter											
Geese:											
Canada	700		50						71,750		
Cackling											
Brant											
White-fronted											
Snow	1,000	200	200						58,800		
Blue	1,000	200	200						56,000		
Other											
Ducks:											
Mallard	4,000	5,000	2,000	500	200	100	100		3,535,000		
Black	200	400	200	100	50	25	25		19,600		
Gadwall		200	200		100				3,500		
Baldpate	500	1,000	500		400	200	100		58,100		
Pintail	2,000	3,000	100						112,700		
Green-winged teal											
Blue-winged teal	500	1,000	6,000	6,000	4,000	2,500	1,000		147,000		
Cinnamon teal											
Shoveler		200	400	300	500	300	100		12,600		
Wood	100	200	300	300	300	300	200		11,900		
Redhead		100							3,850		
Ring-necked	1,000	1,000							51,100		
Canvasback	1,000	4,000	100						179,900		
Scaup	15,000	15,000	36,000	10,000	500	200	100		632,100		
Goldeneye	100	100							9,800		
Bufflehead											
Ruddy	1,000	5,000	5,000	5,000					147,000		
Other Mergansers	100	100	200						16,800		
Coot:	100		2,000	3,000	1,000	500	500		49,700		

(over)

	(5) Total Days Use	(6) Peak Number	(7) Total Production
Swans	None		
Geese	186,550	6,500	
Ducks	4,947,950	203,150	
Coots	49,700	3,000	

SUMMARY

Principal feeding areas

Principal nesting areas

Reported by Edw. A. Davis

INSTRUCTIONS (See Secs. 7531 through 7534, Wildlife Refuges Field Manual)

(1) Species: In addition to the birds listed on form, other species occurring on refuge during the reporting period should be added in appropriate spaces. Special attention should be given to those species of local and national significance.

(2) Weeks of Reporting Period: Estimated average refuge populations.

(3) Estimated Waterfowl Days Use: Average weekly populations x number of days present for each species.

(4) Production: Estimated number of young produced based on observations and actual counts on representative breeding areas. Brood counts should be made on two or more areas aggregating 10% of the breeding habitat. Estimates having no basis in fact should be omitted.

(5) Total Days Use: A summary of data recorded under (3).

(6) Peak Number: Maximum number of waterfowl present on refuge during any census of reporting period.

(7) Total Production: A summary of data recorded under (4).

Interior Duplicating Section, Washington, D. C. 37944
1953

3-1751
Form NR-1A
(Nov. 1945)

MIGRATORY BIRDS
(other than waterfowl)

Refuge BATCHTOWN Months of January to April 1954

(1) Species	(2) First Seen		(3) Peak Numbers		(4) Last Seen		(5) Production			(6) Total
Common Name	Number	Date	Number	Date	Number	Date	Number Colonies	Total # Nests	Total Young	Estimated Number
I. Water and Marsh Birds:										
Great Blue Heron	3	1/8/54	75	4/20/54		Still present				150
American Egret	1	4/20/54	50			Still present				100
Pied-billed Grebe	15	3/15/54	100	4/9/54		Still present				200
II. Shorebirds, Gulls and Terns:										
Gulls	2,000	1/3/54	15,000	2/12/54		Still present				20,000
Terns	500	1/3/54	5,000	2/12/54		Still present				10,000

(over)

(1)	(2)	(3)	(4)	(5)	(6)
III. Doves and Pigeons:					
Mourning dove	None observed				
White-winged dove					
IV. Predaceous Birds:					
Golden eagle					
Duck hawk					
Horned owl					
Magpie					
Raven					
Crow	Crows are here all year around and plenty of them use the areas.				

Reported by Edward A. Davis

INSTRUCTIONS

(1) Species: Use the correct names as found in the A.O.U. Checklist, 1931 Edition, and list group in A.O.U. order. Avoid general terms as "seagull", "tern", etc. In addition to the birds listed on form, other species occurring on refuge during the reporting period should be added in appropriate spaces. Special attention should be given to those species of local and National significance. Groups: I. Water and Marsh Birds (Gaviiformes to Ciconiiformes and Gruiiformes)
II. Shorebirds, Gulls and Terns (Charadriiformes)
III. Doves and Pigeons (Columbiformes)
IV. Predaceous Birds (Falconiformes, Strigiformes and predaceous Passeriformes)

(2) First Seen: The first refuge record for the species for the season concerned.

(3) Peak Numbers: The greatest number of the species present in a limited interval of time.

(4) Last Seen: The last refuge record for the species during the season concerned.

(5) Production: Estimated number of young produced based on observations and actual counts.

(6) Total: Estimated total number of the species using the refuge during the period concerned.

3-1751
Form NR-1A
(Nov. 1945)

MIGRATORY BIRDS
(other than waterfowl)

Refuge CALHOUN Months of January to April 1954

(1) Species	(2) First Seen		(3) Peak Numbers		(4) Last Seen		(5) Production			(6) Total
Common Name	Number	Date	Number	Date	Number	Date	Number Colonies	Total # Nests	Total Young	Estimated Number
I. Water and Marsh Birds:										
Great Blue Heron	3	1/8/54	125	4/20/54		still present				250
American Egret	2	4/20/54	50	4/27/54		still present				100
Pied-billed Grebe	15	3/15/54	100	4/9/54		still present				200
II. Shorebirds, Gulls and Terns:										
Gulls	3,000	1/3/54	15,000	2/12/54		still present				20,000
Terns	700	1/3/54	5,000	2/12/54		still present				10,000

(over)

(1)	(2)	(3)	(4)	(5)	(6)
III. Doves and Pigeons:					
Mourning dove	None observed				
White-winged dove					
IV. Predaceous Birds:					
Golden eagle					
Duck hawk					
Horned owl					
Magpie					
Raven					
Crow	Crows are here all year around, and plenty of them use the area.				

Reported by Edward A. Davis

INSTRUCTIONS

(1) Species: Use the correct names as found in the A.O.U. Checklist, 1931 Edition, and list group in A.O.U. order. Avoid general terms as "seagull", "tern", etc. In addition to the birds listed on form, other species occurring on refuge during the reporting period should be added in appropriate spaces. Special attention should be given to those species of local and National significance. Groups: I. Water and Marsh Birds (Gaviiformes to Ciconiiformes and Gruiiformes)
II. Shorebirds, Gulls and Terns (Charadriiformes)
III. Doves and Pigeons (Columbiformes)
IV. Predaceous Birds (Falconiformes, Strigiformes and predaceous Passeriformes)

(2) First Seen: The first refuge record for the species for the season concerned.

(3) Peak Numbers: The greatest number of the species present in a limited interval of time.

(4) Last Seen: The last refuge record for the species during the season concerned.

(5) Production: Estimated number of young produced based on observations and actual counts.

(6) Total: Estimated total number of the species using the refuge during the period concerned.

3-1752
Form NR-2
(April 1946)

UPLAND GAME BIRDS

Refuge CALHOUN and BATCHTOWN Months of January to April, 1954

(1) Species	(2) Density		(3) Young Produced		(4) Sex Ratio	(5) Removals			(6) Total	(7) Remarks
Common Name	Cover types, total acreage of habitat	Acres per Bird	Number broods obs'v'd.	Estimated Total	Percentage	Hunting	For Re-stocking	For Research	Estimated number using Refuge	Pertinent information not specifically requested. List introductions here.
Nothing to report under this										

INSTRUCTIONS

Form NR-2 - UPLAND GAME BIRDS.*

(1) SPECIES: Use correct common name.

(2) DENSITY: Applies particularly to those species considered in removal programs (public hunts, etc.). Detailed data may be omitted for species occurring in limited numbers. Density to be expressed in acres per animal by cover types. This information is to be prefaced by a statement from the refuge manager as to the number of acres in each cover type found on the refuge; once submitted, this information need not be repeated except as significant changes occur in the area of cover types. Cover types should be detailed enough to furnish the desired information but not so much as to obscure the general picture. Examples: spruce swamp, upland hardwoods, reverting agriculture land, bottomland hardwoods, short grass prairie, etc. Standard type symbols listed in Wildlife Management Series No. 7 should be used where possible. Figures submitted should be based on actual observations and counts on representative sample areas. Survey method used and size of sample area or areas should be indicated under Remarks.

(3) YOUNG PRODUCED: Estimated number of young produced, based upon observations and actual counts in representative breeding habitat.

(4) SEX RATIO: This column applies primarily to wild turkey, pheasants, etc. Include data on other species if available.

(5) REMOVALS: Indicate total number in each category removed during the report period.

(6) TOTAL: Estimated total number using the refuge during the report period. This may include resident birds plus those migrating into the refuge during certain seasons.

(7) REMARKS: Indicate method used to determine population and area covered in survey. Also include other pertinent information not specifically requested.

* Only columns applicable to the period covered should be used.

3-1754
Form NR-4
(June 1945)

SMALL MAMMALS

Refuge CALHOUN and BATCHTOWN Year ending April 30, 1954

(1) Species	(2) Density		(3) Removals					(4) Disposition of Furs						(5) Total Population
								Share Trapping						
Common Name	Cover Types & Total Acreage of Habitat	Acres Per Animal	Hunting	Fur Harvest	Predator * Control	For Re-stocking	For Re-search	Permit Number	Trappers Share	Refuge share	Total Refuge Furs Shipped	Furs Donated	Furs Destroyed	
Nothing to report under this.														

* List removals by Predator Animal Hunter

REMARKS:

Reported by _____

INSTRUCTIONS

Form NR-4 - SMALL MAMMALS (Include data on all species of importance in the management program; i. e., muskrats, beaver, coon, mink, coyote. Data on small rodents may be omitted except for estimated total population of each species considered in control operations.)

(1) SPECIES: Use correct common name. Example: Striped skunk, spotted skunk, short-tailed weasel, gray squirrel, fox squirrel, white-tailed jackrabbit, etc. (Accepted common names in current use are found in the "Field Book of North American Mammals" by H. E. Anthony and the "Manual of the Vertebrate Animals of the Northeastern United States" by David Starr Jordan.)

(2) DENSITY: Applies particularly to those species considered in removal programs. Detailed data may be omitted for species occurring in limited numbers. Density to be expressed in acres per animal by cover types. This information is to be prefaced by a statement from the refuge manager as to the number of acres in each cover type found on the refuge; once submitted, this information need not be repeated except as significant changes occur in the area of cover types. Cover types should be detailed enough to furnish the desired information but not so much as to obscure the general picture. Examples: spruce swamp, upland hardwoods, reverting agriculture land, bottom land hardwoods, short grass prairie, etc. Standard type symbols listed in Wildlife Management Series No. 7 should be used where possible. Figures submitted should be based on actual observations and counts on representative sample areas. Survey method used and size of sample area or areas should be indicated under Remarks.

(3) REMOVALS: Indicate the total number under each category removed since April 30 of the previous year, including any taken on the refuge by Service Predatory Animal Hunter. Also show any removals not falling under headingslisted.

(4) DISPOSITION OF FUR: On share-trapped furs list the permit number, trapper's share, and refuge share. Indicate the number of pelts shipped to market, including furs taken by Service personnel. Total number of pelts of each species destroyed because of unprimeness or damaged condition, and furs donated to institutions or other agencies should be shown in the column provided.

(5) TOTAL POPULATION: Estimated total population of each species reported on as of April 30.

REMARKS: Indicate inventory method(s) used, size of sample area(s), introductions, and any other pertinent information not specifically requested.