BRANCH OF WILDLIFE REFUGES NARRATIVE REPORTS

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REFUGE CHINCOTEAGUE PERIOD SEPT - DEC 1957

CHINCOTEAGUE NATIONAL WILDLIFE REFUGE

NARRATIVE REPORT

SEPTEMBER, OCTOBER, NOVEMBER, AND DECEMBER 1957

PERSONNEL

Jacob M. Valentine, jr.	Refuge Manager
Robert F. Mc Coy	Maintenanceman
Louis F. Conklin	Maintenanceman
Vacant	Refuge Aid
Joshua Mears	Bulldozer Operator
Laborer	William W. Williams

CHINCOTEAGUE NATIONAL WILDLIFE REFUGE

NARRATIVE RPORT

TABLE OF CONTENTS

I. GENERAL

A. Weather Conditions. The following data are from the records of the Aerology Office of the Chincoteague Naval Air Station, located about 7 miles west of the refuge.

	Precipitation		Max. Temp.		Min. Temp.	
	1956	1957	1956	1957	1956	1957
September	2.55	2.94	93	92	42	44
October	6.07	5.00	75	78	40	35
November	1.67	4.48	73	70	27	23
December	2.09	5.59	71	66	25	17
Total	12.38	18.01	93	92	25	17

September was warm and pleasant. On October 6, a coastal storm with winds to 60 MPH and extreme high tides, caused considerable damage to the dock and the sand dikes and sand fence. November weather was not unusual; several cold fronts alternated with mild and rainey weather. The impoundments were frozen, except for waterfowl maintained waterholes on December 12 - 14, and open again the rest of the season.

B. Habitat Conditions.

1. Water. The impoundments and ponds were dry in July until August 18-19 when heavy rains fell. Levels were adequate but suboptimal until late October. During November and December water heights were near maximum. At these high levels, some glades and little used indentations are flooded and made available to waterfowl.

2. Food and Cover. The sago pondweed seed crop was a failure (also in 1956) because of the natural drawdown of the impoundments. After the pools were filled, the sago revegetated so the leafy parts are available. Sago tubers produced well and are used heavily.

Dwarf spikerush (Eleocharis parvula) is used to a great extent, especially in late winter. Grasses in the salt meadows are eaten by snow geese, Canada geese, and black ducks in the Old Field and Palmer's Slash area.

Japanese millet was planted but no seed was produced because of fluctuating water levels and cattle trespass. More of this species should be planted in the future.

II. WILDLIFE

A. Migratory Birds.

1. Waterfowl. Whistling swan peaked at 9 compared to 120 in 1956. Canada geese numbered 800 near the end of the period compared to 500 in 1956. Brant continue to fly into B Impoundment, apparently for water. These small geese are increasingly shot, especially by outside hunters, but they are considered inedible by local residents.

Snow geese (3) and blue geese (2) were noted October 31; few were seen until November 29, when 3,000 snows arrived. These remained for about a week. On December 12-13, on a general cold front, a mass of snow geese (ca. 12,000) passed through the area. Only about 50 have been in the area since that time.

Total duck use is slightly under that of 1956. Black duck reflected this decrease but did peak at 8,000 in early December. Pintail at 3,500 compared closely to 1956. Baldpate numbered 2,000 compared to 3,000 in 1956. Green-winged teal (1956) numbered 2,000 cf. to 1,000 in 1957. Blue-winged teal peaked at 900 in 1957 compared to 1000 in 1956.

Few diving ducks frequented the area, which is not unusual.

Lack of food may be the factor which limits the numbers of ducks and Canada geese. It is remarkable that we are able to hold waterfowl at all during years of sago pondweed seed failure. Fresh water and sanctuary are apparently attractive in this saline environment.

2. Waterbirds. The egrets and herons are generally most numerous in the summer period. The cattle egret increased, however, to 32. This is the largest count during the five years that these exotics have been visiting the area. Most of these birds were immature. Though no heronries, i.e. cattle egret, have been found in this vicinity there is an influx of young birds in the early fall. The last cattle egret was seen on November 20.

Black-crowned night heron have taken a definite drop in numbers in the past year. American bittern are also scarce. Great blue heron are common all winter. Few grebes or loons are found on the refuge proper.

3. Shorebirds, Gulls, and Terns. A few unusual occurrences for the refuge were recorded during the period. A golden plover (black-bellied are common); an upland plover on September 21; and 3 avocets on November 9. The last record H. curlew was seen on September 19. At the present time, only sanderlings are numerous.

Nothing unusual was reported among the gulls and terns. Royal and Caspian terns were relatively abundant late in September. Black terns were unusually numerous in July and early August.

4. Doves. Mourning doves are present but never numerous on the refuge.

B. Upland Game Birds.

1. Bob-white Quail. None was seen during the period. Perhaps, these birds are no longer present on the refuge.

C. Big Game Animals.

1. Deer.

(a). Sika Deer. Little change in the status of this species was noted. No small fawns were seen this summer but some half-grown young have been seen this fall and winter.

The sikas began their "sex scream" in early October and continued until late December. We correlate this scream with the rutting season. It is known that, at least the bucks emit this weird sound.

(b). White-tailed Deer. The first recent occurrence of this species was recorded on November 19, when Manager Valentine saw an antlered white-tail in the dune area near "C" Dike. The deer appeared to harried and unfamiliar with the area. Other reports of deer on Chincoteague Island were received, for the first time, this fall.

D. Fur Animals, Predators, Rodents, and other Mammals.

1. Fur Animals and Predators. Muskrat are not plentiful. Raccoon are common. We were bothered by coon at our duck trap sites, so steel traps were set. Six coon were trapped at one site and 5 at the other in a short time. These seemed to be family groups because of their size classes and because when we trapped the last ones the duck traps were not disturbed.

Red fox are present but not abundant. Otter are present in most parts of the refuge. They are most often seen in the borrow pits at A and B dikes, where they feed on the trapped mullet. Four were seen shortly after the end of the period at A Dike.

2. Rabbits and Rodents. Cotton-tail rabbits are very common during the summer but scarce in the winter. This rapid population decline is very dramatic. No change in the status of rats and mice can be noted.

3. Whales. Colored slides of the live spotted whale, which was found on the beach on September 28, 1956, were sent to Dr. Remington Kellogg, of the US National Museum.

Three forms of the spotted dolphin (Stenella) are known to occur on the Atlantic coast. These are Stenella plagien, S. styx, and S. frontalis. Dr. Kellogg has seen the first two and he could positively say that the one found was not either of these. He has not seen S. frontalis and there is no description available; the photographed dolphin must perforce be S. frontalis or a new form.

Stenella is a pelagic genus and is not usually washed ashore. It frequents the warmer oceanic currents. There are three North American records of Stenella frontalis. These are from Sebastian and Coconut Grove, Florida and Fort Macon, North Carolina.

E. Hawks, Eagles, Owls, Crows, Ravens, and Magpies.

1. Hawks, Eagles, and Owls. Three of the American falcons were present during the period. The first duck hawk and pigeon hawk were noted on September 15; 13 sparrow hawks were counted on the same day. Red-tailed and red-shouldered hawks were two buteo hawks seen. The first bald eagle was noted on November 4. A few eagles are present all winter.

Horned and screech owls are present during the period.

F. Other Birds. During "Operation Recovery" (Sept. 15 - 21), Fred R. Scott mist-netted 1 black-billed cuckoo, 2 olive-backed thrush, 2 black and white warbler, 1 Cape May warbler, 8 northern water thrush, 2 oven birds, and 1 Wilson's warbler. These birds are new or rarely on our bird lists.

Phil DuMont reported the identification of a greater shearwater, which was found dead on the refuge beach on August 10.

G. Fish. Only a moderate amount of surf fishing was noted on the refuge beach during the period. Despite the drawdown of the impoundments, the land-locked mullet managed to survive in the borrow pits.

H. Disease. No evidence of disease or poisoning was seen during the period.

III.q REFUGE DEVELOPMENT AND MAINTENANCE

A. Physical Development.

1. Nesting Islands. About 40 islands were bulldozed in B Impoundment. Most of these were made from naturally raised areas along the south and east side of the impoundment. The islands average 100' x 30' and are about 1 1/2' above water level 5.70. Cordgrass clumps were bulldozed onto the completed islands.

Twelve nesting islands were constructed in Old Field Impoundment.

2. Beach and Dune Dikes. This work continued into this period. About 7,965 linear feet of sand dike was bulldozed. This dike is along the beach in the Old Field area.

The storm of October 6 damage about 1,000 feet of dike and 300 feet of dike and sandfence.

B. Plantings.

1. Aquatics and Marsh Plants. None was planted during the period. Sago pondweed, 3-square, and Japanese millet were planted during the preceding period. (See NR-7).

IV. RESOURCE MANAGEMENT

A. Grazing.

1. Chincoteague Ponies. The Chincoteague Volunteer Fire Company holds SUP No. 22842 to graze 150 head of wild ponies. The salt meadows or dunes show little effect, if any, of this grazing.

V. FIELD INVESTIGATION OR APPLIED RESEARCH

A. Banding. In connection with our trapping and banding efforts the following data are submitted.

Sex and Age in Pintail - 1957

Period	Male	Female	Ad.	Imm.	Imm. M	Imm. F.	Ad. M.	Ad. F.
10/16 - 11/7	87	127	113	101	44	57	43	70
Ratio	1:1.4		1.1:1		1:1.2		1:1.6	
11/14 - 12/1	175	92	177	91	56	35	120	57
Ratio	1.9:1		1.9:1		1.6:1		2.1:1	
12/2 - 19	163	63	148	75	41	34	119	29
Ratio	2.5:1		1.9:1		1.2:1		4.1:1	
Total	425	282	438	267	141	126	282	156
Ratio	1.5:1		1.6:1		1.1:1		1.8:1	

From these banding data, we must assume that female pintail are first to arrive. In 1955, during October - November2, 105 females to 102 males were trapped. When we consider only adult males to adult females, in 1957, this migration differential is even greater during the early part of the season (1:1.6 female).

Later, this sex difference is reversed and to a greater proportion. When mall pintails caught after November 11 through December 19 are totalled, we find 338 males to 155 females, a ratio of 2.1:1. This disparity was also shown in 1955 (11/1-12/28), 232 males compared to 131 females, a ratio of 1.7:1. In December 1956, the ratio was 2.8:1 (250 males vs. 89 females). Adult males versus adult female show an even greater disparity in December 1957 when 119 males were trapped compared to 29 female (4.1:1).

In comparing adults to immatures for the entire trapping period of 1957, the ratio is 1.6 adults to 1 immatures of both sexes. Immature males compared to immature females for the entire period give a 1.1:1. This may show the greater vulnerability of the females (adult) or merely show a greater migrational differential.

Sex and Age in the Black Duck - 1957

Period	Male	Female	Ad.	Imm.	Imm. M	Imm. F	Ad. M	Ad. F.
10/5 - 11/17	31	28	24	35	16	19	15	9
11/22 - 12/3	10	11	3	18	8	10	2	1
12/4 - 9	31	16	10	37	23	14	8	2
12/10 - 12	21	18	10	28	13	15	8	2
Totals	93	73	47	108	60	58	33	14
Ratios	1.2:1		1:2.2		1:1		2.2:1	

We find a similar disparity in the adult sex ratio of the black duck that is common to most ducks. It is interesting to note that the immature sex ratio is 1:1, indicating a higher adult female mortality rate or a migrational difference.

The adult-immature ratio is 1:2.2. The interpretation of this figure is difficult without a greater mass of data, especially from other stations. It suggests a good production and young survival. This condition, i.e., high percentage of immatures cf. to adults, was seen in the blue-winged teal in 1955 but not in 1957.

Sex and Age in the Blue-winged Teal - 1955

Period	Male	Female	Ad.	Imm.	Imm. M	Imm. F.	Ad. M	Ad. F.
9/16 - 10/14	42	56	23	75	29	46	13	10
10/17 - 10/29	56	47	15	68	46	46	10	5
Total	98	103	38	143	75	92	23	15
Ratios	1:1		1:3.7		1:1.2		1.5:1	

1957 A comparison shows the familiar higher adult male to
9/24 - 10/8 72 - 51 78 - 44 24 - 20 of ducks 47 - 21
10/14 - 18 6 - 9 2 - 13 5 - 8 1 - 1
Totals 77 - 60 80 - 57 29 - 28 48 - 22
Ratios 1.2:1 1.4:1 1:1 2.1:1

A comparisonshows the familiar adult male to adult female ratios (1.5:1 and 2.1:1) that is common to most species of ducks. However, the immature sex ratios are almost equal; there is even a slight preponderance of females in 1955.

The most interesting item in these data is the adult: immature ratio. In 1955, the ratio is 1:3.7 but in 1957 it is 1.4:1. I would assume that the former is the most healthy condition for a short lived species because it indicates high productivity. Of course, it may indicate a differential in migration but this does not seem probable because the same relative ratios hold all of the season and all of the blue-wings are gone by late October. Data from the Delta Research Station show that the adults leave that area before the immatures.

Sex and Age in the Green-winged Teal - 1957

Period	Male Female	Ad. Imm.	Imm. M. Imm. F.	Ad. M Ad. F
9/26 - 10/24	23 - 14	20 - 17	12 - 5	11 - 9
10/29 - 11/2	23 - 30	32 - 16	8 - 8	14 - 18
11/4 - 12/17	29 - 13	24 - 15	10 - 5	17 - 7
Totals	75 - 57	76 - 48	30 - 18	42 - 34
Ratios	1.3:1	1.5:1	1.6:1	1.2:1

Similar sex ratios are shown in this species as has been shown in the foregoing. Less disparity is shown in the adult male:female ratio. There is a greater difference in the immature male:female ratio. Adults also outnumber the immature.

Summary: The above data do not pretend to answer any questions but they do pose some. The show some tendancies despite the small numbers involved.

It would be profitable to increase trapping efforts on this and other refuges for comparitive data.

Errors may enter into the data because of faulty sexing and aging. Penis and bursa criteria may not be entirely accurate, expecially as the season progresses.

The banding data for 1955 and 1956 are incomplete because of inadequate sex and age information and because of drought conditions in 1956.

VI. PUBLIC RELATIONS

A. Recreational Uses.

1.	Hunting.	Visitor-use days	- None
2.	Fishing.	Visitor-use days	- 1,000
3.	Miscellaneous.	Visitor-use days	- 4,000
	Total visitor-days for CY 1957		- 5,000

There was an increase in the visitor-use on the refuge, especially swimmers at Fishing Point, which they reach by boat.

B. Visitors.

9/14 - 21 - "Operation Recovery" - Scott, Steirly, Watson, et al.

9/21 - Mr. and Mrs. A. E. Brooks - Book on wildlife.

9/21 - 22 - Boy Scout Troop 311 - Franktown, Va. - camping.

10/21 - Jos. Withers - FWS - GMA - Aerial survey.

11/3 - 4 - Victor Kay - FWS - W. Biol. - Supervisory Inspection

11/6 - Chas. Cooks - FWS - Eng. - Lands.

11/8 - 9 - BSA Troop 312 - Chincoteague - Camping.

11/9 - 11 - Potomac Appalachian Trail Club, D. C. - Camping.

12/9 - "Tommy" Hines - FWS - GMA - Courtesy call.

12/12 & 23 - Chas. Evans - FWS - Flyway Biol. - Snow geese.

12/28 - Christmas Bird Count - DuMont, Scott, Steirly, et al.

C. Refuge Participation. Very little work was accomplished in public relations work, except for day to day contacts. Under "Refuge Visitors" are various groups to who we played host.

1. Met with the Assateague Beach and Bridge Authority on several meets relating to the proposed bridge to the refuge and a road to the beach.

2. Manager Valentine sang a solo and played minstrelman in the Annual Kiwanis Minstrel Show. The show played 3 nights in Chincoteague and 1 night at the Naval Air Station.

3. Valentine acted as leader at the Accomack Co. Great Books Discussion at Accomac, Va. Meetings every other Tuesday.

D. Hunting. No public hunting is allowed on the refuge. From reports and observations, hunting in the waters surrounding the refuge was poor.

E. Violations. No violators were apprehended on the refuge. Some evidence of illegal entry were found but these cases are rare.

Respectfully submitted:

Jacob M. Valentine, jr

Date: January 18, 1958 Jacob M. Valentine, jr.
Refuge Manager

Date: Approved:

Laurence B Bennett
Regional Refuge Supervisor

JAN 2 2 1958

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

WATERFOWL

REFUGE CHINCOTEAGUE MONTHS OF SEPT. TO DECEMBER 1957, 19__

(1) Species	(2) Weeks of reporting period: 9/7 (1)	9/14 (2)	9/21 (3)	9/28 (4)	10/5 (5)	10/12 (6)	10/19 (7)	10/26 (8)	11/2 (9)	11/9 (10)
Swans:										
Whistling*									3	5
Trumpeter										
Geese:										
Canada*	1	1	1	1	8	10	100	200	590	500
Cackling										
Brant *									3500	5000
White-fronted										
Snow *									3	3
Blue *									2	2
Other										
Ducks:										
Mallard*	20	20	20	20	few	few	few	few	100	500
Black *	500	300	200	300	2500	1000	2000	2500	5000	6000
Gadwall*	40	40	40	40	few	few	few	few	50	200
Baldpate*	600	600	600	800	1200	1200	2000	2000	3000	3000
Pintail*	100	100	100	100	200	200	200	800	1000	2000
Green-winged teal*	400	400	500	300	200	300	600	600	1000	1000
Blue-winged teal*	100	100	200	700	700	900	300	200	few	few
Cinnamon teal										
Shoveler*	few	few	200	100	50	50	200	200	100	500
Wood *									few	few
Redhead										
Ring-necked										
Canvasback										
Scaup										
Goldeneye										
Bufflehead										
Ruddy *								few	few	300
Other										
Coot: *										100

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

3 -1750a
Cont. NR-1
(Rev. March 1953)

WATERFOWL
(Continuation Sheet)

REFUGE CHINCOTEAGUE MONTHS OF SEPT. TO DECEMBER 31, 1957

(1) Species	(2) Weeks of reporting period: 11/16 (11)	11/23 (12)	11/30 (13)	12/7 (14)	12/14 (15)	12/21 (16)	12/28 (17)	12/31 (18)	(3) Estimated waterfowl days use	(4) Production: Broods seen	Estimated total
Swans:											
Whistling*	5	5	5	9	9	4	6	8	413		
Trumpeter											
Geese:											
Canada *	500	200	200	300	200	296	235	800	26,999		
Cackling											
Brant *	5000	3000	5000	5000	5000	1900	5000	5000	282,800		
White-fronted											
Snow *	20	20	3000	3000	400	--	40	50	45,752		
Blue *	2	-	2						56		
Other											
Ducks:											
Mallard *	500	500	1000	1000	500	500	300	350	37,310		
Black *	6000	6000	8000	8000	4000	5000	4500	6000	460,600		
Gadwall *	200	200	700	700	100	100	550	500	24,220		
Baldpate *	2000	1000	1000	1000	500	500	1100	2100	204,400		
Pintail *	3000	3000	3500	3500	2000	2000	2200	1500	178,500		
Green-winged teal*	1000	1000	700	700	500	500	330	300	72,310		
Blue-winged teal*									22,400		
Cinnamon teal											
Shoveler *	500	500	300	300	few	300	450	250	28,000		
Wood *	few								few		
Redhead *	few						2		few		
Ring-necked*	few						12		few		
Canvasback *	few							21	few		
Scaup *	few						2		few		
Goldeneye*	few						1		few		
Bufflehead *							10		few		
Ruddy *	300	100	100	100	100	100			7,706		
Other H. Merg.	50	present					20	10	560		
RB Merg.								1	few		
Coot: *	100	200	200	200	30	30	4	18	6,174		

(over)

	(5) Total Days Use	(6) Peak Number	(7) Total Production
Swans	413	9	
Geese	355,607	8,800	
Ducks	1,036,006	15,300	
Coots	6,174	200	

SUMMARY

Principal feeding areas

Principal nesting areas

Reported by JMU

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 Chincoteague Months of Sept. to Dec. 31, 1957 194

(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:										
Cattle egret	present		32	9/17	1	11/20				
American egret	"				1	12/12				
Snowy egret	"				6	10/31				
Black-c night heron	"				1	11/3				
Great blue heron	"		35	10/14	Present					
American bittern	"				1	11/15				
II. Shorebirds, Gulls and Terns:										
Golden Plover	1	9/17								
H. curlew					1	9/19				
Upland plover	1	9/21								
Avocet	3	11/9			1	11/15				
Royal tern			12	9/17	& 13	10/2				
Caspian tern	2	9/17			1	10/2				

(over)

(1)	(2)		(3)		(4)		(5)	(6)
III. Doves and Pigeons:								
Mourning dove	present				few present			
White-winged dove								
IV. Predaceous Birds:								
Golden eagle								
Duck hawk	1	9/15			1	11/4		
Horned owl*	present				present			
Magpie								
Raven								
Crow	present				present few			
Pigeon hawk	2	9/19			1	10/16		
Red-tailed hawk	1	9/15			present few			
R-s hawk	1	9/16						
Bald eagle	1	11/4	2	12/18				

Reported by.....

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.

Form NR-3

BIG GAME

Refuge Chincoteague 1957 Year 194

(1) Species	(2) Density	(3) Young Produced	(4) Removals				(5) Losses			(6) Introductions		(7) Estimated Total Refuge Population as of Dec. 31	(8) Sex Ratio
Common Name	Cover types, total Acreage of Habitat	Number	Hunting	For Re-stocking	Sold	For Research	Predation	Disease	Winter Losses	Number	Source		Percentage
Sika Deer		?		None			?				None	60 - 100	?
White-tailed Deer												1	1 male

1614

INSTRUCTIONS

Form NR-3 - BIG GAME

(1) SPECIES: Use correct common name; i.e., Mule deer, black-tailed deer, white-tailed deer. It is unnecessary to indicate sub-species such as northern or Louisiana white-tailed deer.

(2) DENSITY: Applies particularly to those species considered in removal programs (public hunts, etc.) exclusive of fenced herds. Detailed data may be omitted for species occuring 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 total number of young produced on refuge.

(4) REMOVALS: Indicate total number in each category removed during the year.

(5) LOSSES: On the basis of known records or reliable estimates indicate total losses in each category during the year.

(6) INTRODUCTIONS: Indicate the number and refuge or agency from which stock was secured.

(7) TOTAL REFUGE POPULATION: Give the estimated population of <u>each species</u> on the refuge as of December 31.

(8) SEX RATION: Indicate the percentage of males and females of each species as determined from field observations or through removals.

PUBLIC USE - C. Y. 1957

Please supply figures, or your best estimates for the following categories when applicable to your refuge:

A. Chincoteague National Wildlife Refuge.

B. Estimated total use of all types 5,000 visitor-days.

1. Hunting use (for those refuges having public or regulated hunting.)

Estimate visitor-days none

2. Fishing use.

Estimated visitor-days 1,000

3. Miscellaneous use (lump such uses as picknicking, swimming, wildlife observation, birdwatching, as well as those on the area for business or official use, including economic uses such as farming or trapping.)

C. Remarks.

Estimated visitor-days 4,000

January 17, 1958
Date

Jacob M. Valentine, jr.
Refuge Manager

Form NR-7

PLANTINGS
(Marsh - Aquatic - Upland)

Refuge CHINCOTEAGUE Year 194 57

Species	Location of Area Planted	Rate of Seeding or Planting	Amount Planted (Acres or Yards of Shoreline)	Amount & Nature of Propagules	Date of Planting	Survival	Cause of Loss	Remarks
3-square (*S. americanus*)	"D" Impound.	10 lbs. per acre	11 acres	seed from Mattamuskeet	3/14 - 15/ 57	? - good stand resulted; may be ntural growth		
"	"	25 lbs per acre	5 acres	"	4/8 - 9/ 57	?	"	
Japanese millet	"A" Impound.	25 lbs. per acre	12 acres	seed	7/15 - 16/ 57	Fair	Stand flooded soon after germination; Trespassing cattle destroyed remainder.	

TOTAL ACREAGE PLANTED:

Marsh and aquatic 28
Hedgerows, cover patches
Food strips, food patches
Forest plantings

1618

3-1570
NR-8a

REFUGE GRAIN REPORT

Refuge CHINCOTEAGUE Months of Sept. through Dec. 31, 1957

(1) Variety*	(2) On Hand Beginning of Period	(3) Received During Period	(4) Total	(5) Grain Disposed of				(6) On Hand End of Period	(7) Proposed or Suitable Use*		
				Transferred	Seeded	Fed	Total		Seed	Feed	Surplus
Shelled corn	20 bu.	0	20			20 bu.	20 bu.	0			
Mixed grain (fr. USAD tests)		1,000 lbs.				1,000 lbs.		0			
" " (fr. Back Bay Refuge)		30 bu.	30 bu.			20 bu.	20 bu.	10 bu.		10 bu.	

(8) Indicate shipping or collection points

(9) Grain is stored at

(10) Remarks

*See instructions on back.

16—61482-1

REFUGE GRAIN REPORT

This report should cover all grain on hand, received, or disposed of, during the period covered by this narrative report.

Report all grain in bushels. For the purpose of this report the following approximate weights of grain shall be considered equivalent to a bushel: Corn (shelled)—55 lb., corn (ear)—70 lb., wheat—60 lb., barley—50 lb., rye—55 lb., oats—30 lb., soy beans—60 lb., millet—50 lb., cowpeas—60 lb., and mixed—50 lb. In computing volume of granaries, multiply the cubic contents (cu. ft.) by 0.8 bushels.

(1) List each type of grain separately and specifically, as flint corn, yellow dent corn, square deal hybrid corn, garnet wheat, red May wheat, durum wheat, spring wheat, proso millet, combine milo, new era cowpeas, mikado soy beans, etc. Mere listing as corn, wheat, and soybeans will not suffice, as specific details are necessary in considering transfer of seed supplies to other refuges. Include only domestic grains; aquatic and other seeds will be listed on NR–9.

(3) Report all grain received during period from all sources, such as transfer, share cropping, or harvest from food patches.

(4) A total of columns 2 and 3.

(6) Column 4 less column 5.

(7) This is a proposed break-down by varieties of grain listed in column 6. Indicate if grain is suitable for seeding new crops.

(8) Nearest railroad station for shipping and receiving.

(9) Where stored on refuge: "Headquarters granary," etc.

(10) Indicate here the source of grain shipped in, destination of grain transferred, data on condition of grain, unusual uses proposed.

16—61482–1 U S. GOVERNMENT PRINTING OFFICE

Form NR-10

HAYING AND GRAZING

Refuge Chincoteague 1957 Year 194

Permittee	Permit No.	Unit or Location	Actual Acreage Utilized	Animal Use Months	Tons of Hay Harvested	Period of Use From - To	Rate	Total Income	Remarks
Chincoteague Volunteer Fire Co.	22842	Entire refuge				Full year	.10 AUM	150.00	

Totals:

Acreage grazed_____ Animal use months_____ Total income Grazing_____

Acreage cut for hay_____ Tons of hay cut_____ Total income Haying_____

1621

BRANCH OF WILDLIFE REFUGES NARRATIVE REPORTS

MR. SALYER _____ MISS ~~BAUM~~ _____

MR. GRIFFITH _____

Operations

~~MR. REGAN~~ _____ MR. DuMONT _____

Land Management

~~MR. ACKERKNECHT~~ _____ ~~DR. MORLEY~~ _____

Habitat Improvement

DR. ERICKSON _____ MR. STILES _____

MR. KUBICHEK _____

Stenographers

_____ _____

REFUGE CHINCOTEAGUE PERIOD MAY - AUGUST 1957

CHINCOTEAGUE NATIONAL WILDLIFE REFUGE

NARRATIVE REPORT

MAY, JUNE, JULY, AND AUGUST 1957

Refuge Personnel

Refuge Manager	Jacob M. Valentine, jr.
Maintenanceman	Robert F. Mc Coy
Maintenanceman	Louis F. Conklin
Refuge Aid	Vacant
Bulldozer Operator	Joshua Mears
Laborer	William W. Williams

UNITED STATES DEPARTMENT OF THE INTERIOR

FISH AND WILDLIFE SERVICE

CHINCOTEAGUE, VIRGINIA

CHINCOTEAGUE NATIONAL WILDLIFE REFUGE

NARRATIVE REPORT

TABLE OF CONTENTS

I. GENERAL

A. Weather Conditions. The weather data are from the Aerology Office, U. S. Naval Air Station, Chincoteague, located about 7 miles west of the refuge.

Precipitation

	1951	1952	1953	1954	1955	1956	1957
May	3.72	2.13	2.43	4.10	2.82	4.72	1.31
June	3.23	.65	2.32	.47	6.31	3.12	2.95
July	.68	1.32	2.08	5.05	3.96	6.58	2.44
August	1.60	4.21	4.35	6.60	8.12	2.15	5.26
Total	9.23	8.31	11.18	15.22	22.21	16.57	11.96

Temperatures

	Max. Temp.		Max. Temp.	
	1956	1957	1956	1957
May	96	88	33	37
June	94	93	55	55
July	92	96	56	58
August	94	92	63	56
	96	96	33	37

The weather was notable especially for its dryness and high temperatures. One blessing was the almost complete lack of mosquitoes.

B. Water Conditions. Water levels were good in all ponds and impoundments during the early summer. Extended drought conditions dried up A Impoundment by July 18; Old Field by August 5 and B Impoundment by August 8. The natural ponds and depressions were dry early in July. Some water remained in the borrow pits of all the impoundments.

On August 18 - 19, several inches of rain fell, raising A to 4.00; B to 4.76; and Old Field to 7.10. A Impoundment has optimum water levels for feeding ducks; B is almost completedy filled; and Old Field has several large ponds at Virginia Creek Dike and Virginia Pond Dike.

The drought killed large patches of cordgrass on B Dike. In, general, however, the drought did not seem to effect the other vegetation throughout the refuge.

II. WILDLIFE

A. Migratory Birds.

1. Populations and Behavior.

(a) Waterfowl. Two Canada geese were last seen on the salt marsh near the refuge boathouse on June 13.

Despite the drought conditions which prevailed most of the summer, duck production was better than usual. A brood census was made every two weeks, alternating weekly between B and Old Field impoundments. Counts were made by walking the edge of the woods and shoreline of the water areas. No counts were made along the bay marshes or on the natural ponds.

On May 23, a census indicated a potential breeding population of 270 pairs of black ducks. A total of 55 black duck broods were counted on B, C, and Old Field impoundments. No broods were seen on A impoundment.

Most of the broods in Old Field were found on the west side. This side is brushy and affords brood cover while the east side borders a salt meadow marsh. When flushed, the broods retreat to the needlerush beds and the myrtle brush shore. In B impoundment, the broods are evenly distributed on both the west and east shores; a few are found along B Dike. A surprising number of broods were found in C impoundment. This is the first year that broods have been found here. This pond has been filled with sea water but this year it was fresh.

No change was found in mallard production. Only two broods were seen, one in Old Field and another in C. Eight breeding pairs were estimated.

Four gadwall broods were counted. Five pair were estimated in late May.

A pair of baldpate was seen at Old Field on May 28. One was seen at C impoundment on June 22. Last summer we suspected a brood.

The last spring shoveler was seen May 21; two were seen on August 10. It is possible that these birds summered on the refuge.

I have suspected that green-winged teal nest on the refuge but substantial evidence has been lacking. Two drakes and a female

were seen on June 26. A suspected female with broods was seen on July 9 at Virginia Pond Dike; it was a dark rainy day with poor visibility so identification was not positive. Later a flock of 4 was seen in B dike borrow pit on August 13.

Only three blue-winged teal broods were seen. The drawdowns of the impoundments coincided with the peak of the brood season. This doubtless reduced production of this species. At this writing, blue-wings are the most common duck numbering only about 150.

Pintail were last seen on May 28 until August 14 when a lone bird was seen. The next day a flightless female was caught near B dike. Its feathers were so worn and tattered that it could not fly. It was an adult non-moulted bird which possibly may have summered on the refuge. On August 24, after water returned to the impoundments, 57 pintail were seen in A impoundment. Usually there are about 1,000 here by the end of August.

A few ruddies, red-breasted mergansers, and a pair of wood ducks were also seen during the summer. A few flocks of unidentified scoters were seen flying south over the ocean. late August. No coot were seen all summer.

The cummulative effect of the brood season was not seen because of the drought. As the broods matured into flight, they left the refuge. A few broods matured in the borrow pits and adults, also, used the pits for drinking and resting.

(b) Water and Marsh Birds. A few flights of d-c cormorants continued into May. A few of these birds are are found in the area during the summer. One common loon was seen early in May. Great blue heron are relatively common during the summer. American egrets are most common during the late summer. Fifty were counted on B Impoundment July 18. About 600 snowy egrets were seen on the same day. Few herons nest on the refuge; the closest heronry is on Hog Creek, near the south end of Wallops Island, where green heron, Louisiana herons, and snowy egrets nest. A green heron nest was found on Ragged Point. These birds are very common, especially in late summer.

Louisiana heron are seen most of the summer. Little blue heron did not appear to be as common as usual, probably because of the dry impoundments. The black-crowned night heron was common early in the summer but now have thinned out. One yellow-crowned night heron was seen on June 26 and on August 24. American bittern are never plentiful. A least bittern was seen on June 19.

Glossy ibis are becoming commonplace. Four arrived on May 14 and the species has been seen all summer. About 20 were seen at Old Field on July 17. On August 10, 18 were noted at B Dike. The first nesting record for Virginia was found in 1956 at Hog Island by John Terborgh. I visited this heronry on June 1, 1957, and found glossy ibis nesting, ca. 3 pair. This heronry is quite large and contains snowy and American egrets, Louisiana heron, black-crowned night heron, and little blue heron.

Cattle egret, regular visitants to the refuge since 1953, returned on April 7. They associate with the ponies on the refuge and the cattle on Chincoteague Island, especially those on Piney Island. The greatest number, 21, was seen August 11, with Maddox's cattle on Piney Island.

On May 27, I saw one catch and eat a small frog; the egret held the frog in its beak and slapped it on the ground until the frog was quite limp. The egrets are very alert to the large black flies on the legs and bellies of the cows. The birds pick off the insects and step back gingerly before the cows kick or step forward.

Adult cattle egrets have during the breeding season buff colored feathers on the crest of the head, on the breast, and on the back. The beak color ranges from bright yellow and orange to light yellow with a dark tip. The legs and feet are usually some shade of yellow or orange. Young CE have blackish legs and feet, their beaks are generally lighter in color, and they do not have the buffy coloration. They retain this subadult plumage for two years.

No breeding records have yet been established for Virginia.

Clapper rails appear to be plentiful. There have been no high tides or storms to destroy nests or young this summer. The season opens September 16 with 15 bird bag limit.

(c) Shorebirds. Only a few oyster catchers were seen during the period. Migrating Hudsonian curlews were gone by the last of May and returned the first of July. A count of 65 black-bellied plover was made on May 28. Sanderlings, dowitchers, rudddy turnstones, yellow-legs, willet, semipalmated sandpipers, and other "peeps" are common during the summer.

(d) Gulls and Terns. Laughing, herring, ring-bills are the common gulls of the summer. A few great black backs are seen. Forster's, common, Caspian, royal, least, gull-billed, and black terns are present. Black terns were especially common in August.

9e). Doves. A few mourning doves were noted during the period. No nests were found.

2. Food and Cover. Sago pondweed, the most important aquatic food plant, began the season with a luxuriant growth in A and B impoundments. Very little seed was produced, however, because of drought conditions. A small amount of seed matured in early July. While bulldozing islands in B impoundment, after the rain in August, large quantities of tubers were found. At this writing those disturbed tubers which settled in the mud and sand appear to be sprouting. Last year there also was little seed produced but tubers were plentiful.

The entire floor of B pond was found to be pock-marked with depressions, varying from 6" to 4' in diameter, made by ducks tipping for tubers.

Old Field, whose floor is mainly covered with a thick layer of cordgrass roots, has little submergent vegetation. A few patches of wigeon grass were found in the old ponds near Virginia Creek and Virginia Pond Dikes. Several bushels of tubers and plants mmm, of sago pondweed, were planted this spring. Until this layer of roots and vegetation is rotted sufficiently to become incorporated into the sand of the bottom, little if any vegetation will be able to take root.

Three-square (S. americanus) is common along the edge of Old Fiedd, C and D Impoundments and Kerr's Marsh. This latter marsh was disked and planted to 3-square but the growth there is the result of disturbance rather than seeding. The bare spots, in Old Fiedd, puddled out by snow geese appear to rejuvenate into a good stand of 3-square the following year.

Japanese millet was planted in A Impoundment after this pond went dry; this in early July. The bottom was disked and the seed planted by grain drill on about 12 acres. The seed germinated and has made about 6" of growth. The rain of August has covered most of the planting; there is no drainage so this planting will probably not succeed. Blacks, pintail, and blue-wings are feeding in this field at the present time.

We are, at present, bulldozing nesting islands on Old Field and B Impoundments, in effort to increase production. Rain and mosquitoes have hampered this work.

The 20 nest boxes built and set out this spring have not been used.

The large patch of cattail in A Impoundment, near A Dike, was disked to slow down its spread and to prevent seed production. While making brood counts the past summer, cattail was found in small patches along both sides of B Impoundment; several patches were found in the Turtle Pond and Sand Pond areas; several patches along the bay marsh at Janey's Creek and some near the marsh below the lighthouse.

3. Disease. No evidance of disease was noted.

B. Upland Game Birds.

1. Populations and Behavior.

(a) Bob-white Quail. No quail were noted this summer. There has been a small population of these birds in the Old Field area.

C. Big Game Animals.

1. Populations and Behavior.

(a) Sika Deer. Observations of these exotic deer were not very numerous. Five in a herd were seen on May 11; a buck with antlers in the velvet on the same day. Singles, and groups of 2,3, and 5 were seen during the period, mainly in the B Impoundment and main trail area.

The deer at this season are reddish in color. No fawns were seen during the period. Of 33 observations of deer, only 4 were antlered.

(b) Feral Goats. Few of these animals were seen. Im am of the opinion that the goats are decreasing.

(c) Chincoteague Ponies. Although these beach ponies are not big game, nor do they belong to the Government, they are of sufficient interest and importance to rate space in the narrative report. As a tourist attraction, they rate as a prime drawing card to the refuge and Chincoteague, especially during Pony Penning time.

Because of the high prices being paid for pony colts, the Chincoteague Volunteer Fire Company, who own and manage the ponies, have been selling all of the yearly increment of colts. Two herds of beach ponies were purchased by the company to supplement the yearly

mortality loss. There are now 11 herds, each sired by a stallion. There are also lone mares and smaller groups not attached to the herds with stallions. Shown below is a list of the herds known by the stallion's name, the number of mares, and the number of colts at the time of the count.

1. Clarence Beebe - 7 mares (5/12).

2. Bill Hudson - 7 (5/15) - 9 mares (5/28).

3. Black Stud - 9 (May) - 9 mares - 3 colts (6/11).

4. Delaware - 11 mares - 5 colts (May) - 9 mares - 4 colts (5/28) - 9 mares (8/14).

5. Black and White - 10 mares - 5 colts (5/27).

6. Harve Beebe - 11 mares - 8 colts (5/27) - 12 mares (6/3).

7. Pacer - 10 mares - 6 colts (5/28) - 10 mares (6/11).

8. Lighthouse - 9 (5/28).

9. Bob Beebe - 8 mares - 7 colts (6/11) - 9 mares (8/14).

10. Raider - 5 (August).

11. Justice - 13 - 8 colts (5/15).

As can be seen from the formentioned list, there is a certain amount of loss and gain in the number of mares in a herd. This may be due to another stallion's raid on a herd or it may be the addition of one of the bachelor mares to a herd.

The ponies and colts are rounded up each year several days before the Pony Swim. On the last Wednesday of July, the ponies are made to swim the channel between Assateague Island and Chincoteague and are driven to the carnival grounds. On Thursday, Pony Penning Day, the colts are sold at auction. The Swimm and Pony Penning are the main attractions during the 12 day firemen's carnival.

There were 67 colts sold this year. The prices range from $110. plus for a stud colt to $295.00 for a mare colt.

2. Food and Cover. The deer range appears to be in good condition. The deer herd is not yet large enough to effect the brushy vegetation.

The grasses, mainly cordgrass (S. patens and alternifolia), though probably poor in quality, are sufficient for the ponies. No overgrazing can be seen. The ponies do eat 3-square and cattail, especially in the spring, but both of these plants outgrow the horse's efforts.

D. Fur Animals, Predators, Rodents and Rabbits.

1. Fur Animals and Predators. Muskrat, seldom numerous, because of the drying out of the ponds and impoundments, are now scarce. At least 3 dead muskrat were found in the dried impoundments. There is probably a great deal of intraspecific fighting when the habitat becomes constricted through drying. Mortality, through predation, also becomes intensified.

Otter were seen on several occasions. One female (I presume) with 3 pups were seen in the borrow pit of B Dike on June 19. An adult was seen on August 1 in the B Dike borrow pit.

Few raccoon were seen during the period. Coon and fox were poisoned and trapped this spring. A few red fox were seen during the period.

2. Rodents and Rabbits. Cotton-tail rabbits are sepecially common during the mid-summer. They rapidly become scarce or more secretive in the fall and winter.

The following mammals were collected by David H. Johnson and John L. Paradiso, National Museum, June 21 - 29:

Least Shrew, Cryptotis parva, 18
White-footed mouse, Peromyscus leucopus, 6
Rice rat, Oryzomys palustris, 13
Meadow vole, Microtus pennsyvanicus, 20
Jumping mouse, Zapus hudsonius, 2
House mouse, Mus musculus, 5

E. Predaceous Birds and Crows.

1. Hawks and Eagles. Osprey are the only hawk that is common during the summer. A few sparrow hawks, pigeon hawk (1 on 8/24), red-tailed hawk (1 on 8/13) and marsh hawk were seen.

2. Crows. Common and fish crows are present during the summer but not abundant.

B. Fish. Few channel bass or black drum were caught on the beach. The mullet survived in the borrow pits of B Impoundment despite the drying up of the main pond.

III. REFUGE DEVELOPMENT AND MAINTENANCE

A. Development.

1. Dune Erosion Control. Little work was done on this project. $6,000.00 was appropriated for FY 1958 to continue building sand dikes and sand fence. This work will be from the Old Field area to the wash flats. A dike is planned to edge the dunes to reinforce the present bulwarks and the dunes. A purchase of 15,000' of sand fence was made from Fencecraft @ .1596 per foot or $2,394.00. 8,000 BF on 2X4's were purchased from Pineland Lumber Co. @ $440.00

2. Nesting Islands. An appropriation of $600.00 for FY1958 to construct 30 nesting islands in Old Field and B Impoundments. Eight were completed in Old Field. The islands, which average 50X80X4', were bulldozed when the impoundment was dry. Later the islands were sodded by hand and bulldozer. Three others are partially completed. Work is progressing on B Impoundment.

B. Maintenance.

1. Equipment.

(a) Truck - Dodge Power Wagon. Pickup box, rear fenders, and wheels painted. New radiator core installed. Washed, waxed, greased and oiled as required; 5,000 mile and safety check.

(b) Truck - Willys Jeep - military type. Tune up,; required grease jobs, oil changes, 5,000 mile and safety check. Spare tire rack rebuilt.

(c) Truck - Chevrolet pickup - 1/2 ton. Tune up; washed and waxed; required grease and oil jobs; 5,000 mile and safety check.

(d) Truck - Willys Jeep 1953. Engine removed and rebuilt. Clutch plate, pressure plate, and clutch bearing installed. Rear springs removed and rebuilt. Starter, generator, and voltage regulator rebuilt. Wash, wax, grease, and oil jobs; 5,000 mile and safety check.

(e) Truck - Willys Jeep 1948. Stearing gear removed and sector shaft bushings installed. Tune up; wax, wash, grease, and oil jobs; 5,000 mile and safety check.

(f) Tractor - Ford, wheel type. Clutch plate installed.

(g) Tractor - IHC TD18a crawler. Main drive clutch and tracks adjusted. Cable installed.

(h) Tractor - Cat. D-7 crawler. Main drive clutch and tracks adjusted.

(i) Tractor - Cat. D-4 crawler. Tracks adjusted.

(j) Boat - Laughing Gull FWS 187. Placed on railway; bottom cleaned, caulked, and coppered. Sides, decks, and cabin painted. Engine tuneup.

(l) Boat - Lyman outboard with 30HP Johnson. Bottom cleaned and coppered; sides painted and decks varnished. Motor painted and tuneup.

(m) Boat - Whirlwind outboard with 35 HP Johnson. Bottom cleaned and coppered; sides and decks painted.

(n) Boat - Wagemaker with 10 HP Johnson. Bottom cleaned and coppered; sides and decks painted. Engine tuneup and gaslines installed.

(o) Barge - Pulled out on Williams railway; bottom cleaned, caulked, and coppered. Sides and deck painted.

2. Buildings and Lands.

(a)Pope's Island Coast Guard Station. Painted: ceilings and walls of grub locker; halway, second floor; risers, stair steps; door trims; lightplant doors and windows; office door and steps; boathouse doors, screens, and steps; cistern at boathouse; porch windows, screens, and steps; most of screens on entire building; water tank and stand; underpinnings of station; water tank in pump room; stove hearth in kitchen; scraped and painted most of outside of station.

Screens, windows, and doors repaired; minor repair on light plant, plumbing (drains, septic tanks, pumps, laundry tubs, cess pool cleaned). Penalty and goose signs replaced. Brass and fire extinguishers shined.

(b) Service building. Roof shingles replaced. Shop stall painted. Overhead door repaired. Yard graded and cleaned.

(c) Boathouse. Overhead I beams sanded and painted aluminum. Chain hoists sanded and painted. Overhead door runners painted.

(d) Maroney House. Windows repaired; panes replaced. Doors repaired. The old foundations and rubble were bulldozed to fill in the old basements, septic tanks, and cisterns on the Lighthouse hill. The brush and grass was cut around the house.

(e) Main trail graded several times.

(f) Headquarter's lawn mowed inumerable times.

3. Miscellaneous.

(a) Heavy duty boat trailer built.

(b) Two portable duck traps built.

C. Plantings.

1. Millet Planting. Twelve acres of millet were planted in A Impoundment. The bottom land was disked and Japanese millet planted with a grain drill at the rate of 20 pounds to the acre.

2. Sago Pondweed. Several bushels of sago pondweed plants and tubers were planted in Old Field.

IV. ECONOMIC USE

A. Grazing. The Chincoteague Volunteer Fire Company continues to hold a permit to graze 150 ponies on the refuge. See Big Game Animals.

B. Shell Fisheries. Two permits to cultivate and harvest oysters are in effect. One to Harvey Mc Gee and one to Harry Collins.

V. FIELD INVESTIGATIONS

A. Banding. During June and July, 33 local young black ducks were banded from 18 broods on B and Old Field Impoundments. The method of capture was to flush a brood and run down the young as they hid in the grass or took to the water. In general blacks will go to the

cover on shore but occasionally one or two will streak for the water. They are extremely shy and I'm certain would never drive into a herding trap unless conditions were ideal. All of the birds were Class II or III.

It will be interesting to see if there are any returns on these birds. Do these birds migrate from the area? Did they survive to any extent after the dry-out of the impoundments?

A number of snowy egrets and Louisiana herons were banded at the Hog Creek heronry.

VI. PUBLIC RELATIONS

A. Public Use.

1. Recreation, Camping, and Bird Watching. A number of casual visitors visited the refuge for general sightseeing. BS Explorer Troop # 10 from Berwick, Pennsylvania, camped on the refuge August 10-15. The Audubon Society of D. C. with 23 members spent August 10 on the refuge. On August 24, 19 persons with the Virginia Society of Ornithology spent the day.

A few surf fishermen fished for drum with little apparent success.

B. Participation.

5/1 - Valentine and Mc Coy gave slide talk on the refuge to the Northampton County Ruritan Club at Weirwood, Virginia

5/3-4 - Valentine attended the meeting of the Virginia Society of Ornithology's annual meeting at Wachepreague, Virginia. Game slide talk on the refuge.

5/11 - Participated in the Audubon Society of D. C.'s Regional Bird Count on the refuge.

5/31 - Valentine and McCoy gave slide talk to the Cape Charles (Va.) Rotary Club.

7/23-25 - Assisted the Chincoteague Fire Company in yearly roundup of ponies on the refuge. Assisted Abercrombie and Herndon, National Geographic, on story of Chincoteague ponies on the refuge.

7/13-29 - Prepared a refuge exhibit for the Chincoteague Volunteer Fire Company's annual carnival. The display consisted of a large diagramatic map of the refuge flanked by representative photographs

of refuge scenes and activities. In the foreground stage was a semirealistic diorama of local ducks and mammals. The carnival attracts thousands of visitors from near and far.

C. Visitors

5/10 - Batty Mixon - Chief Game Warden, Maryland
Edwin Barry - Chief, Fisheries Mgt., Maryland

5/16 - Robt. Johnson - Asst. to Director, Sports Fish. and Wildlife - Washington, D.C.

Milo Moore - Senate Fisheries Consultant - Washington, D.C.

John Glude - Chief, Oyster Investigations - FWS - Washington, D. C.

6/21-30 - John Paradiso - National Museum - mammal collection

Bernie Feinstein - National Museum - bird collection

6/24-27 - David H. Johnson - National Museum - mammals

8/10 - Audubon Society of D. C. - 22 members - birding

8/24 - Virginia Society of Ornithology - 19 - birding

VI. ITEMS OF INTEREST

A. Chincoteague to Assateague Bridge. Authority to build the bridge linking the refuge to Chincoteague was given by the House, Senate, and signed by the President. So far no work has been done. The state of Virginia will build a road to the Chincoteague bridge approach and the Bridge Authority will build, maintain, and collect toll charges for crossing the bridge. A road will run to the recreation area in the vicinity of Tom's Cove on the beach. Facilities, such as bathouses, eating places, parking areas, and toilets will be built and managed by the Authority.

Respectfully submitted:
Jacob M. Valentine, Jr.
Jacob M. Valentine, jr.
Refuge Manager

September 19, 1957

Approved:

Regional Refuge Supervisor

SEP 1 3 1957

Dune Erosion Control - sand fence and dike - Maryland - Virginia line to Old Field - cmpleted March 1955 - note some migration of beach grass -

Dune Erosion Control - saad dike and fence - C Dike to wash flats - completed Fall 1956 -

Dune Erosion Control - small sand dike with 50' panel - beach grass moving in -

Beach Erosion Control - small sand fence and dike - note lack of sand collection -

Dune Erosion Control - sand dike closing a break in the dunes - some migration of beach grass - Old Field area -

Dune Erosion Control - sand dike closing gap in the dunes - note lack of sand collection - Old Field area -

Dune Erosion Control - sand dike closing breaks in the dunes - sod bulldozed to give cover to dike - Old Field area -

Dune Erosion Control - experimental sand panel made from drift lumber - to close small break in the dunes -

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

WATERFOWL

REFUGE CHINCOTEAGUE NATIONAL WILDLIFE REFUGE MONTHS OF MAY TO SEPT.1957, 19__

(1) Species	(2) Weeks of reporting period: 5/4 (1)	5/11 (2)	5/18 (3)	5/25 (4)	6/1 (5)	6/8 (6)	6/15 (7)	6/22 (8)	6/29 (9)	7/6 (10)
Swans:										
Whistling										
Trumpeter										
Geese:										
Canada*	35	16	16	13						
Cackling										
Brant										
White-fronted										
Snow										
Blue										
Other										
Ducks:										
Mallard*	20	20	20	20	20	20	20	50	50	50
Black *	500	500	600	600	600	500	500	400	400	600
Gadwall*	50	30	20	12	12	12	12	12	12	90
Baldpate*	30	20	10	3						
Pintail*	10	10	a few present ?							
Green-winged teal*	200	100	10	1	a few present ?					
Blue-winged teal*	80	50	30	30	30	30	30	20	20	20
Cinnamon teal										
Shoveler *	20	10	3	3	a few present?					
Wood *				2	a few present?					
Redhead										
Ring-necked										
Canvasback										
Scaup										
Goldeneye										
Bufflehead										
Ruddy *				3				7		
Other										
*	10									
Coot:										

Int. Dup. Sec.,
Wash., D. C. 37844

3 -1750a
Cont. NR-1
(Rev. March 1953)

WATERFOWL
(Continuation Sheet)

REFUGE CHINCOTEAGUE MONTHS OF MAY TO SEPT. 1957, 19____

(1) Species	(2) Weeks of reporting period 7/13 (11)	7/21 (12)	7/28 (13)	8/3 (14)	8/10 (15)	8/17 (16)	8/24 (17)	8/31 (18)	(3) Estimated waterfowl days use	(4) Production Broods seen	(4) Production Estimated total
Swans:											
Whistling											
Trumpeter											
Geese:											
Canada *									420		
Cackling											
Brant											
White-fronted											
Snow											
Blue											
Other											
Ducks:											
Mallard *	40	10	10	10	10	10	10	10	2,730	2	30
Black *	300	100	100	100	50	20	100	200	43,190	55	500
Gadwall *	30	20	20	20	13	13	30	30	2,646	4	30
Baldpate *									441		
Pintail *	a few present?					1	15	60	672		
Green-winged teal*	a few present?					4	10	10			
Blue-winged teal*	20	10	10	10	6	6	150	150	4,914	3	50
Cinnamon teal											
Shoveler *	a few present?						2	2	280		
Wood *	a few present?								Few		
Redhead											
Ring-necked											
Canvasback											
Scaup											
Goldeneye											
Bufflehead											
Ruddy *	a few present?								70		
Other											
*									70		
Coot:											

(over)

	(5) Total Days Use	(6) Peak Number	(7) Total Production
Swans	0	0	0
Geese	420	35	0
Ducks	57,036	1,169	610
Coots	70	10	0

SUMMARY

Principal feeding areas

Principal nesting areas B Impoundment and Old Field

Reported by Jacob M. Valentine, jr. Refuge Manager

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-1B
(December 1956)

UNITED STATES
DEPARTMENT OF THE INTERIOR
Fish and Wildlife Service

WATERFOWL UTILIZATION OF REFUGE HABITAT

Refuge Chincoteague For 12-month period ending August 31, 1957

Reported by Jacob M. Valentine, jr. Title Refuge Manager

(1) Area or Unit Designation	(2) Habitat Type	(2) Habitat Acreage		(3) Use-days	(4) Breeding Population	(5) Production
South end to Wash Flats, includes Palmer's Slash, A, B, C, D Impoundments.	Crops	12	Ducks	1,156,820	400	320
	Upland	1,358	Geese	46,916		
	Marsh	1,216	Swans	3,619		
	Water	662	Coots	100,015		
	Total	3,236	Total	1,307,370		
Old Field and Ragged Point	Crops		Ducks	867,615	300	290
	Upland	618	Geese	422,247		
	Marsh	741	Swans			
	Water	200	Coots	7,000		
	Total	1,559	Total	1,296,852		
Middlemoor, Rum Harbor, Hebron, and Jerico, Islands in Maryland.	Crops		Ducks	41,315	few	few
	Upland		Geese	few		
	Marsh	418	Swans			
	Water		Coots			
	Total		Total	41,315		
	Crops		Ducks			
	Upland		Geese			
	Marsh		Swans			
	Water		Coots			
	Total		Total			
	Crops		Ducks			
	Upland		Geese			
	Marsh		Swans			
	Water		Coots			
	Total		Total			
	Crops		Ducks			
	Upland		Geese			
	Marsh		Swans			
	Water		Coots			
	Total		Total			
	Crops		Ducks			
	Upland		Geese			
	Marsh		Swans			
	Water		Coots			
	Total		Total			

(over)

All tabulated information should be based on the best available techniques for obtaining these data. Estimates having no foundation in fact must be omitted. Refuge totals for all categories should be provided in the spaces below the last unit tabulation. Additional forms should be used if the number of units reported upon exceeds the capacity of one page. This report embraces the preceding 12-month period, NOT the fiscal or calendar year, and is submitted annually with the May-August narrative report.

INSTRUCTIONS

(1) Area or Unit: A geographical unit that, because of size, terrain characteristics, habitat type and current or anticipated management practices, may be considered an entity apart from other areas in the refuge census pattern. Estimated acreage of each unit should be indicated.

(2) Habitat: Crops include all cultivated croplands such as cereals and green forage, planted food patches and agricultural row crops; upland consists of all uncultivated terrain lying above the plant communities requiring seasonal submergence or a completely saturated soil condition a part of each year, and includes lands whose temporary flooding facilitates use of non-aquatic type foods; marsh extends from the upland community to, but not including, the water type and consists of the relatively stable marginal or shallow-growing emergent vegetation type including wet meadow and deep marsh; and the water category includes all other water areas inundated most or all of the growing season and extends from the deeper edge of the marsh zone to strictly open-water areas, embracing such habitat as shallow playa lakes, deep lakes and reservoirs, true shrub and tree swamps, open flowing water and maritime bays, sounds and estuaries. Acreage estimates for each type should be kept as accurate as possible through reference to available maps supplemented by periodic field observations and should agree with unit acreage.

(3) Use-days: Use-days is computed by multiplying weekly waterfowl population figures by seven.

(4) Breeding Population: An estimate of the total breeding population of each category of birds for each area or unit.

(5) Production: Estimated total number of young raised to flight age.

Interior Duplicating Section, Washington, D. C.
1956

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

MIGRATORY BIRDS
(other than waterfowl)

Refuge CHINCOTEAGUE Months of MAY to SEPT. 1957 194

(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:										
P-b grebe	1	7/18			1	7/18				
D-c cormorant	present				8	5/23				
GB heron	present		12	7/17	present					
American egret	present		300	8/10	present					
Snowy egret	present		600	8/10	present					
La. heron	present		50	8/10	present					
LB heron	present		29	6/27	present					
Green heron	present		30	8/30	present			1 - 3 eggs (5/17)		
B-c night heron	present		6	8/10	present			Ragged Point		
Y-c night heron	1	6/26			1	8/24				
Least bittern	1	6/19								
Cattle egret	present		21	8/10	present					
Glossy ibis	4	5/14	20	7/17	present					
Clapper rail	present		Common		present					
II. Shorebirds, Gulls and Terns:										
BB plover	present		65	5/28	present					
Ruddy turnstone	present		41	8/10	present					
H. curlew	present	last spring record 1 (5/28) - return 26 (7/4) - peak 67 (5/10).								
Willet	present		common		present					
Yellow-legs, G. & L.	present		common		present					
Dowitcher	present		100's	5/17	present					
Stilt sandpiper			32	8/24	present					
Oyster catcher	present		few		3	8/24	(present)			
Laughing gulls, herring, ring-bills - common and present										
Great black back gulls - few - present										
Forster's, common, Caspian, least, and black terns - common - present										
Black skimmers - common - present										

(over)

(1)	First seen (2)	Peak (3)	Last seen (4)	Production (5)	(6)
III. Doves and Pigeons:					
Mourning dove*	present	few	Present	few	
White-winged dove					
IV. Predaceous Birds:					
~~Golden~~ eagle, American			1	5/7 (Assawoman Creeek, south of Chincoteague).	
Duck hawk					
Horned owl					
Magpie					
Raven					
Crow					
RT hawk	present	few	1	8/13 (present)	
Osprey	present	common	present		
Pigeon hawk		few	1	8/24	
Sparrow hawk	present		2	8/24	

Reported by Jacob M. Valentine, jr
Refuge Manager

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

1613

Refuge Chincoteague Months of May to Sept. 1957, 19__

(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.
Bob-white quail - a few may be present in the Old Field area - none heard this period.										

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.

3-1570
NR-8a

REFUGE GRAIN REPORT

Refuge Chincoteague Months of Jan. through Aug., 1957

(1) Variety*	(2) On Hand Beginning of Period	(3) Received During Period	(4) Total	(5) Grain Disposed of				(6) On Hand End of Period	(7) Proposed or Suitable Use*		
				Transferred	Seeded	Fed	Total		Seed	Feed	Surplus
Shelled corn	0	34 (Blackwater Refuge - 2/6/57)	34			14	14	20		20	
Mixed grain	10	0	10			10	10	0			

(8) Indicate shipping or collection points

(9) Grain is stored at

(10) Remarks

*See instructions on back.

16—61482-1

NR-8a

REFUGE GRAIN REPORT

This report should cover all grain on hand, received, or disposed of, during the period covered by this narrative report.

Report all grain in bushels. For the purpose of this report the following approximate weights of grain shall be considered equivalent to a bushel: Corn (shelled)—55 lb., corn (ear)—70 lb., wheat—60 lb., barley—50 lb., rye—55 lb., oats—30 lb., soy beans—60 lb., millet—50 lb., cowpeas—60 lb., and mixed—50 lb. In computing volume of granaries, multiply the cubic contents (cu. ft.) by 0.8 bushels.

(1) List each type of grain separately and specifically, as flint corn, yellow dent corn, square deal hybrid corn, garnet wheat, red May wheat, durum wheat, spring wheat, proso millet, combine milo, new era cowpeas, mikado soy beans, etc. Mere listing as corn, wheat, and soybeans will not suffice, as specific details are necessary in considering transfer of seed supplies to other refuges. Include only domestic grains; aquatic and other seeds will be listed on NR–9.

(3) Report all grain received during period from all sources, such as transfer, share cropping, or harvest from food patches.

(4) A total of columns 2 and 3.

(6) Column 4 less column 5.

(7) This is a proposed break-down by varieties of grain listed in column 6. Indicate if grain is suitable for seeding new crops.

(8) Nearest railroad station for shipping and receiving.

(9) Where stored on refuge: "Headquarters granary," etc.

(10) Indicate here the source of grain shipped in, destination of grain transferred, data on condition of grain, unusual uses proposed.

16—61482–1 U S. GOVERNMENT PRINTING OFFICE

BRANCH OF WILDLIFE REFUGES NARRATIVE REPORTS

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REFUGE CHINCOTEAGUE PERIOD JANUARY-APRIL 1957

CHINCOTEAGUE NATIONAL WILDLIF REFUGE

NARRATIVE REPORT

JANUARY, FEBRUARY, MARCH, AND APRIL 1957

PERSONNEL

Jacob M. Valentine,jr.	Refuge Manager
Vacant	Refuge Aid
Louis F, Conklin	Maintenanceman
Robert F. Mc Coy	Maintenanceman
Johhua Mears	Bulldozer Operator
Roy G. Williams	Laborer

UNITED STATES DEPRRTMENT OF THE INTERIOR

FISH AND WILDLIFE SERVICE

CHINCOTEAGUE, VIRGINIA

CHINCOTEAGUE NATIONAL WILDLIFE REFUGE

NARRATIVE REPORT

TABLE OF CONTENTS

I. GENERAL

A. Weather Conditions. The weather data are from the Aerology Office of the Chincoteague Naval Air Station, located about 7 miles west of the refuge.

	Precipitation		Max. Temp.		Min. Temp.	
	1956	1957	1956	1957	1956	1957
January	2.90	3.72	65	68	14	2
Februayy	2.32	3.61	68	67	10	27
March	3.52	4.55	73	70	23	25
April	3.82	2.92	84	89	37	32
	12.56	14.80	84	89	10	2

No severe storms were experienced during the period. Some snow fell in January but this melted within a week.

B. Water Conditions.

Water conditions in all ponds and impoundments were high. Water was released from A and B Impoundments until February 1. From that date, the levels are kept as high as possible to assure summer water.

Levels varied from 5.25 to 6.00 on A and B Impoundments. The reading at B is 5.56 and at A is 5.44 at the end of the period. A gauge was put in at Virginia Creek Dike of Old Field. The gauge was put in at an arbitrary 8.40. This gauge will have to be surveyed when the engineers visit the refuge. Levels in Old Field varied between 8.50 and 7.92. The fresh water lakes were frozen several times in January.

No salt water entered any of the impounded lakes. Some high tide water rose into Surf Hill Ponds, Palmer's Slash, and Sow Ponds.

C. Fires. A fire, on March 17, burned about 5 acres of brush and pine land. Only the ground cover (pine needles and Smilax briars) was burned. The area burned was on the bayside of the White Hills near Sow Ponds. The fire was put out by refuge personnel and neighbor volunteers. It was probably started by careless trespassers.

II. WILDLIFE

A. Migratory Birds.

1. Populations and Behavior.

(a). Waterfowl. Whistling Swan numbered 10 until the middle of February; 16 were seen until the birds left, about March 14. Last year the swan numbered 86 during the same period.

Canada geese peaked at 300 during January; this is comparable to last year. We noted northward flights on 2/19, 3/12, 3/15, 3/28 and 3/30. At the present time there are about 120 on B Impoundment. This impoundment attracts most of the Canadas on the refuge. The geese feed on submerged aquatics, probably sago pondweed tubers.

Snow geese numbered 4,000 at the beginning of the period; this number remained about a month. Near the end of January, the main flock left the refuge. About 500 remained in the area until the middle of February. Flights were seen flying north on 1/25 (600); 1/29 (300); 2/2 (1,000 over Chincoteague); 2/25 (39); 3/2 (56); 3/24 (150). Two snows are present at the end of the period.

The snows fed heavily on 3-square, saltmeadow cordgrass, and fimbrystilis on the Old Field salt meadow.

Brant did not come up to last year's numbers. These birds frequent the bay waters around the refuge and apparently only come into the refuge for fresh water. There are a few remaining at the south end of Chincoteague. Six reports of brant banded at Southampton Island, N.W. Territory were recovered in the Chincoteague area.

Mallard numbers dropped compared to last year. An interesting count by the GMA plane census in January, found an estimated 12,000 mallards compared to our ground estimate of 600. Whether this is in error, or a short visit by these birds, can not be determined. During this same air census, the GMA plane estimated 14,000 black ducks while our estimates numbered 8,000. GMA Withers insists that count is reliable. Gadwall peaked at 1,000 compared to 600 in 1956. Baldpate peaked at 2,000 compared to 1,000 in 1956. Pintail numbered 2,000 compared to 4,000 in 1956. Green-winged teal peaked at 2,000 early in the period compared to 1,200 in 1956. Shovelers numbered 500 in January compared to 800 in 1956. These duck numbers can be deceiving because most of the true peaks occur

in the fall - winter period. Ruddy ducks were scarce compared to 200 in 1956. Coot numbers were roughly comparable to those in 1956. Very few diving ducks were seen during the period.

(b) Water and Marsh Birds. A few common and red-breasted loons were seen during the period. Several of the former were found oil soaked and immobilized on the beach during April

Few horned and pied-billed grebes were noted. Gannets are relatively common during the winter. Few d-c cormorants were seen during the winter. Migrants began coming through 4/18 (500) and 4/24 (230).

Great blue heron are common during the period. A few of the herons and egrets remain overwinter. Some American egrets can be found most of the winter. Migrants began coming in late March. Snowy egrets arrivals were seen March 14. No Louisiana herons were seen until April 23. A little blue heron was seen by Biologist Rudolph on the Chincoteague causeway on March 30; these birds usually come in the early summer. Few, if any, black-crowned night heron were seen this winter; this is unusual, because we usually have about 50 birds wintering on the refuge. American bittern appeared more abundant than usual; 3 were seen at Old Field on March 29. Returning green heron were seen on April 17.

The cattle egrets were first seen April 7, when 2 were seen on A Impoundment. The arrival date for 1956, was March 31. This is the fifth year that these exotic egrets have returned to Chincoteague. There are probably 4 present at this time. One of these is in the subadult plumage, i.e., no buffy color on the head, back, or breast and black legs and feet.

Clapper rails are present in small numbers all winter and common by April 20. A sora was seen March 12.

(c) ShoreBirds. A few killdeer, yellow-legs, and sanderlings are present all winter. Wilson's snipe were scarce. Hudsonian curlews were first seen April 16; they are not plentiful in this area but are abundant in the bay saltmarshes south of Chincoteague. Willet were seen on April 16; they were common by the 20th.

(d) Gulls and Terns. Great black-backed, herring, and ring-billed gulls are present all winter. Laughing gulls arrived March 30 and Forster's terns on March 29; both of these are common by the middle of April. A black skimmer was seen on April 22.

(e) Doves. Mourning doves are present but not numerous.

2. Food and Cover. As noted in the last report there was no sago pondweed produced this year because the impoundments were dry during the late summer and early fall. Perhaps as a result of this, the tubers were very numerous. In the more brackish ponds, wigeon grass dominates. Some patches of this plant were in flower by April 15.

The salt meadow at Old Field was utilized heavily by snow geese. This is composed mainly of cordgrass, fimbrystilis, sedges, and 3-square. No preference was shown over burned and unburned marsh. Black ducks and mallards also puddled out the roots and plants.

A 70 acre salt meadow in the D Impoundment and Kerr's Marsh area was cleared of myrtle and bacharis brush to furnish browse for Canada geese. About 15 acres of this was disked and planted to 3-square. None of this seed has germinated at the present time. It may take another season before this seed will sprout.

About 20 nest boxes were set out along the west side of B Impoundment. The boxes are 10" X 12" X 24", open at one end, and attached to a creosoted post driven into the bottom. The box is placed several inches above the water line and a board ramp runs to the water. So far, no success can be reported, but blacks and mallards nested in similar boxes last season at Blackwater Refuge. The purpose is to furnish nesting sites which are less vulnerable to predation.

The islands in B Impoundment, along the west side, should be cleared of loblolly pine and allowed to grow into cordgrass and other grasses to furnish nesting sites. At present, the pine needles preclude grass growth. If Palmer's Slash is impounded the pines should be removed or killed on the islands in the meadow.

3. Disease. Few carcasses of ducks, geese, or swan were found this year. The winter of 1955-56, about 7 swan and a number of ducks were found dead or dying, indicating some evidence of disease.

B. Upland Game Birds.

1. Populations and Behavior. There is a small population of bob-white quail in the Old Field area.

C. Big Game Animals.

1. Populations and Behavior.

(a) Sika Deer. From all appearances, the deer population has increased considerably in the past two years. During our predator control operations, we found deer tracks literally everywhere. On March 28, Mc Coy saw 8 along the trail to the beach. Single and small groups of deer are seen freqently in all parts of the refuge. On April 4, Valentine saw 4 together near B Dike. No fawns have yet been seen this spring.

The deer on Parramore Island, 24 miles south of the refuge, are white-tailed. Five were seen on a recent trip to the island.

(b) Feral Goats. These domestic goats are found in the Ragged Point - Old Field area. Their population seems to have dropped somewhat.

(c) Chincoteague Ponies. These horses, though not "big game", should be included in the narrative report. The Harvey Beebe stud herd and the Justice' bunch had colts by March 30. Because of the high prices for the colts sold at Pony Penning, the firemen are reluctant to leave enough of the mare colts to increase the herd. With the annual loss of animals, the herd is getting smaller.

2. Food and Cover. In the areas of goat concentration, there is evidence of over-browsing. The goats tend to remain in herds and fortunately do not roam any distances. This habit causes eatouts in some preferred species. The goats are generally found near Will Hole creek, Persimmon Tree Hill, and the Ragged Point brushy areas.

The deer cover remains in good condition. Because the deer do not concentrate into large herds and are spread relatively uniform over the refuge, there is not evidence of any overbrowsing. If the deer continue to multiplyat their present rate, some control measures will have to be taken.

Not enough is known of this oriental deer's food habits. Smilax is known to be a preferred species. However, on several occasions the writer has seen the deer grazing on cordgrass and other wetland grasses.

The horses, especially in the winter and early spring, feed to a great extent, on the salt marsh cordgrass. They tend to concentrate in the salt marsh south and east of B Dike, Palmer's Slash, Green Marsh, and the Ragged Point marshes. In a sense, they may compete with the snow geese, but this writer is of the opinion, that the geese make the grasses and roots more availble to the snow geese, black ducks, and Canada geese.

D. Fur Animals, Predators, Rodents, and Rabbits.

1. Fur Animals, and Predators. Muskrats are not very abundant at this writing. There is little good muskrat habitat and the drying of the pools during last fall's drought probably contributed to the drop in numbers.

In January, an otter was seen in Old Field Impoundment, near Virginia Creek Dike. There are usually tracks at this dike and a well worn crossover path. Otter sign was found at Turtle Pond. Many tracks were seen in the sand at the White Hills.

During the week of April 15 - 18, 2,000 poison baits were put out to control raccoon and red fox. Assistant District Agent John C. Jones, Lewis Webb (FWS), Predator Control Superviser Nelson Swink (State of Virginia), GMA Jim Williams, Refuge MM Mc Coy, Refuge MM Conklin, Laborer Williams, and Manager Valentine participated. The baits were put out along the bay marshes and freshwater ponds from the Maryland line to Assateague Point and Tomés Cove. The bait consisted of mixed ground raw fish, cracklings, and corn meal. A one-grain pellet of strychnine was placed in a marble-sized ball of the bait.

Ref Refuge personnel were instructed in the techniques of trapping fox and raccoon. About 15 fox dens were smoked using the FWS poison gas cartridge. Two coon and 2 fox were found deal several days after poisoning. One fox and 5 coon were trapped during the week. Six coon were killed by refuge personnel during the period.

Jones and Swink were of the opinion that the fox population was higher prior to control operations in 1956 than they were prior to operations in 1955. The raccoon population was considerably smaller in 1957 than in 1955. A followup check on coon and fox sign showed some results.

2. Rodents and rabbits. Rats and mice are not very numerous on the refuge.

Cotton-tail rabbits are common but not abundant.

E. Reptiles. A large snapping turtle was found crossing the trail near the White Hills. This is the first of this species noted on the refuge.

F. Predaceous Birds and Crows.

1. Hawks and Eagles. Only the marsh hawk is common during this period. The first osprey was seen March 21. Several are nesting in the vicinity of B Dike. A few sparrow hawks were seen.

2. Crows and Magpies. Both the common and fish crows are present but in no great numbers.

On March 29, Biologist Royston Rudolph and the writer saw a magpie flying behind the dunes near the ocean. This is a rare record for the east coast and the 2nd record for Virginia.

G. Fish. The channel bass and black drum fishermen are beginning to come on the refuge beach at the end of the period. The drum are beginning to run along the sloughs and some catches have been reported from the Assateague Inlet.

III. REFUGE DEVELOPMENT AND MAINTENANCE

A. Development.

1. Dune Erosion Control. Little work was done on this project during the period. About a half mile line of brush and grass was bulldozed to the inside edge of the dunes to form a sand catching barrier. This "sand fence" was incidental to the clearing of the saltmeadow described below.

2. Brush Clearing. About 80 acres of salt meadow was made available for goose browse by bulldozing myrtle, ground-sel, and hightide bush. Some of this land was disked and planted to 3-square.

3. Beach Trail. A trail was bulldozed on the inside of the dunes from C Dike to the Wash Flats. This trail is about 1 1/2 mikes long. It is especially useful during high tides as it

affords a route off the beach to the wash flats. Some low spots were filled in and the trail raised.

B. Maintenance.

1. Equipment.

(a) Boat - Laughing Gull. Put on boat railway; bottom cleaned, caulked, and coppered. The hull, cabin, and decks painted. New fuel pump, spotlight, bilge pump, and windshield wipers installed. Running lights rewired.

(b) Boat - Wolverine outboard. Bottom cleaned and coppered; hull and decks painted.

(c) Boat - Lyman outboard. Bottom cleaned and coppered; hull and decks painted. Remote controls and steering lines repaired.

(d) Outboard motor - Johnson 10 HP. Motor disassembled; cleaned, repaired, and reassembled.

(e) Crawler tractor - D-4 Caterpiller. Entire tractor cleaned, chipped, sanded, masked, primed, and painted. Tracks adjusted.

(f) Crawler tractor - D-7 Caterpiller. Main drive clutch adjusted.

(g) Crawler tractor - TD-18a IHC. General tunsup. Main drive clutch adjusted; track adjusted. Two new batteries, new plugs, and points installed.

(h) Grader - Ford tractor. Sanded, primed, and painted.

(i) Disk harrow - Ford tractor. Repaired and painted. A frame was built changing the disk to hydraulic lift.

(j) Truck - Willys pickup 1949. Motor overhaul; valves ground; new rings, inserts, and gaskets installed. New muffler, tail pipe, speedometer cable, new plugs, points, and condenser installed. Engine removed; new clutch, pressure plate, and throwout bearings installed. Motor painted and reinstalled. Two need tires installed. Five wash jobs and 1 wax job.

(k) Truck - Willys pickup 1953. Starter removed and rebuilt. Front wheel bearings, heater switch, carburator, fuel pump, and gas line installed. One fender straightened, 1 fender

patched; front fenders and grill painted. Four wash jobs and 1 wax job.

(l) Truck - Chevrolet pickup 1953. Head removed , carbon cleaned; valves ground. New valve, points, condenser, and plugs installed. Four wash jobs and 1 wax job.

(m) Truck - Willys military jeep. New muffler, exhaust, and tail pipe installed. Five wash jobs and 1 wax job. Cab removed for the summer.

(n) Truck - Dodge PowerWagon. Three wash jobs and 1 wax job.

(o) Miscellaneous. Gas and fuel cans painted and stencilled. Property numbers painted on most items of property. Twenty nest boxes were built and placed in B Impoundment.

2. Buildings and Lands.

(a) Pope's Island Coast Guard Station. Plumbing removed and new line installed in light plant, garage, and main building. New fuel line, fittings to Day Room stove. Painted shower screen and fittings, laundry tubs, wainscoting in kitchen, porch door, kitchen sink, and ceiling in laundry rooms. Outside scraped and painting begun on main building. Screens repaired. Refrigerator installed with new fittings and line; box painted. Brass fixtures and extinguishers polished.

(b) Office - Residence # 1. The kitchen and living room dramexed; windows, doors, and framing painted. New venetian blinds installed.

(c) Signs. Penalty and goose signs placed and replaced on the beach and bay. The recognition sign at the north entrance moved and replaced.

C. Plantings.

1. Aquatics and Marsh Plants. About 16 acres of salt meadow was planted to 3-square at the rate of 10 to 25 pounds per acre. This marsh, north of C Dike, was bulldozed to remove brush. Part of the area was disked. None of the seed has germinated at the present time.

D. Burning Report. About 120 acres of salt meadow and myrtle was burned October 5, 1956. A good burn was made on the myrtle.

Composition: 60% wax myrtle, 20% Spartina patens, 20% 3-square, sedges, distichlis, and other grasses. The purpose was to thin out or destroy the myrtle. Area: from Virginia Pond Dike to Jester's Slough. No increase in waterfowl useage was noted.

IV. ECONOMIC USE

A. Grazing. The Chincoteague Volunteer Fire Company continues to hold a permit to graze 150 ponies on the refuge.

B. Shell Fisheries. Two permits to cultivate and harvest oysters are in effect. One to Harvey Mc Gee in the tidal lands from the refuge dock to Smalley's Drain and one to Harry Collinsfor the tidal flats bordering Assateague Anchorage and Tom's Cove.

V. FIELD INVESTIGATIONS

A. Banding. The following waterfowl were trapped and banded during the fall and winter season of 1956-57:

Pintail	779
Black duck	111
Coot	63
Mallard	41
Blue-winged teal	4
Baldpate	4
Lesser scaup	2
Green-winged teal	1
Redhead	1
Total.....	1,006

Recoveries of Waterfowl Banded at Chincoteague

Species	Banded	Return	Place
Pintail	1/1/51	12/1/56	Wallops Is., Accomack Co., Va.
"	1/6/51	12/11/56	Chincoteague Refuge, Va.
"	9/14/55	11/19/56	Long Point, marshes and Bay, Ontario
"	9/14/55	12/1/56	Delaware R., Andalusia, Pa.
"	9/14/55	1/2/57	Chincoteague Bay, Va.
"	9/19/55	12/ /55	Grandy, N. Carolina

Pintail	9/21/55	12/22/56	Banana R., Titusville, Florida
"	10/4/55	11/7/56	Parramore Is., Wachepreague, Va.
"	10/27/55	11/26/56	Mannington Meadow, Salem Co., N.J.
"	10/28/55	11/10/56	Parramore Is., Wachepreague, Va.
"	11/28/55	12/12/31/56	Pasquotank R., Elizabeth City, N.C.
"	12/19/55	11/30/56	Chincoteague Refuge, Va.
"	12/20/55	1/ /57	Chesapeake Bay, Saxis, Va.
"	12/27/55	1/30/57	Chincoteague Refuge, Va.
"	12/28/55	11/3/56	Musquash Lake, Queens Co., New Brunswick
"	2/1/56	11/24/56	Assateague, Is., Maryland
"	2/23/56	11/7/56	Delaware R., Beverly, N. J.
"	2/24/56	1/9/57	Mattamuskeet L., New Holland, N.C.
"	11/7/56	11/22/56	Crisfield, Maryland
"	11/11/56	11/13/56	Little Assawoman Bay, Delaware
"	11/20/56	11/23/56	Assawoman Is., Va.
"	11/20/56	12/31/56	Worcester Co., Md.
"	11/20/56	12/29/56	Graysonville, Maryland
"	11/20/56	1/2/57	Chincoteague, Va.
"	11/21/56	11/23/56	Assawoman Is., Va.
"	11/25/56	11/26/56	Pope's Is., Md.
"	11/28/56	11/30/56	Chincoteague, Va.
"	12/5/56	12/27/56	nr. Killcohook Refuge, New Jersey
"	12/5/56	1/3/57	Chincoteague, Va.
"	12/10/56	1/4/57	Chesapeake Bay, Mears, Va.
12/10/56	12/10/56	1/15/57	Assateague Is., Maryland
12	12/10/56	1/4/57	Chesapeake Bay, Mears., Va.
"	12/12/56	1/4/57	Pope's Is., Maryland
"	12/12/56	1/ /57	Chesapeake Bay, Saxis, Va.
"	12/12/56	12/28/56	Tinicum Marsh, Essington, Pa.
"	12/12/56	1/2/57	Chincoteague, Va.
12/	12/18/56	1/2/57	Assateague Is., Md.
1	12/18/56	1/1/57	Ocean City, Md.
"	12/18/56	1/7/57	Shanks Crk., nr. Tangier Is., Va.
"	12/18/56	1/1/57	Penn Manor L., Trenton, N.J.
"	12/28/56	1/4/57	Indian R. Bay, Sussex Co., Dela.
"	12/26/56	1/15/57	Knotts Is., N.C.
"	12/26/56	1/8/57	Indian R., Rehobeth, Dela.
1	1/9/57	12/12/56	Onancock, Va.
1	1/9/57	1/ /57	Saxis, Va.
"	1/11/57	2/13/57	Bombay Hook Refuge, Smyrna, Dela.
Mallard	10/28/55	12/15/56	Back Bay, Pungo, Va.
"	2/23/56	12/31/56	Assateague Is., Md.
Coot	12/6/55	12/21/56	Laguna el Morrillo, Pinar del Rio, Cuba
"	3/10/56	10/16/56	Saginaw Bay, Michigan
"	11/6/56	12/13/56	St. Johns R., St. Augustine, Florida
" "	11/6/56	1/3/57	Roanoke Is., Roanoke Sound, N. C.

BW Teal	9/26/55	10/11/56	Perija, west of Maracaibo, Venezuela
"	3/20/55	10/15/56	La Salle, nr. Windsor, Ontario
Black duck	12/17/45	12/21/56	Bucks Co., Penna.
" "	12/28/51	11/26/56	Green Run, Assateague Is., Md.
" "	12/2/55	12/28/55	Chincoteague, Va.
" "	12/7/55	12/6/56	Chincoteague, Va.
" "	12/10/55	1/14/57	Metompkin Bay, East. shore, Va.
" "	12/11/55	12/1/56	Walta Bay, Atlantic, Va.
" "	12/27/55	12/28/56	Assateague Is., Md.
" "	12/27/55	12/31/55	Chincoteague, Va.
" "	9/4/56	11/7/56	Pope's Is., Assateague Is., Md.
" "	10/20/56	11/7/56	Pope's Is., Md.
" "	12/12/56	12/19/56	Chincoteague, Va.
" "	12/12/56	12/19/56	Chincoteague, Va.

Recoveries in Chincoteague Area of Waterfowl Banded Elsewhere

Species	Place Banded	Date	Return Date
Mallard	Calf Island, N.Y.	6/15/54	1/15/57 (shot)
"	Ware, Union Co., Ill.	12/20/55	12/6/56 (shot)
Pintail	State College, Penna.	Summer 1956	11/15/56 (shot)
"	Mattamuskeet Refuge, New Holland, NC.	2/21/55	2/12/57 (released)
"	Hudson Bay, Ft. Severn, Patricia Dist.	7/30/55	1/9/57 (released)
"	Topsfield, Mass.	7/24/56	12/5/56 (released)
"	Howland's Is., New York	3/-/56	11/20/56 (released)
Brant	Southampton Is., NW Territory	8/7/56	11/29/56 (shot)

VI. PUBLIC RELATIONS

A. Public Use.

1. Recreation. Few visitors were taken to the refuge during the period. On April 27 - 28, Explorer and BS Troop 201 of Hyattsville, Maryland, camped overnight. Surf fishing has begun but few fish have been caught.

B. Participation.

1/9 - Valentine, Mc Coy, and Williams attended the annual Chincoteague Volunteer Fire Company banquet.

2/19 - Valentine and Mc Coy gave slide-talk on the refuge to the Accomack Co. Elementary PTA.

2/22 - Valentine and Mc Coy gave slide-talk to the Onancock Rotary Club, at Melfa, Virginia.

2/26 - Valentine gave slide-talk to Explorer and BS Troop 322, at Bloxham, Virginia.

C. Visitors.

1/3 - Sam Miller - GMA - FWS - Penna.

1/9 - Warren Diffendahl - GMA - FWS - Newburg, New York

2/7 - Robert Lines - Lands - FWS - Atlanta, Georgia

2/19 - J. d'Arcy Northwood - Curator, Audubon Shrine, Audubon, Pa.

2/27 - James B. Engle - Oyster Invest. - FWS - Annapolis, Md.
John Glude - " " - " " "
Mike Castagna - " " - " - Boothbay Harbor, Md.
Tom Carver - " " - " - Gloucester Pt., Va.

3/10 - D. R. Gascoyne - Reg. Director - FWS - Boston, Mass.

3/29 - 4/2 - R. Rudolph - Biologist - FWS - Mattamuskeet Refuge

4/15 - 18 - John C. Jones - P&RC - FWS - Washington, D. C.
Lewis Webb - " - " - "
Nelson Swink - Mammal Control - Va. Game Commission

Respectfully submitted,

Jacob M. Valentine, Jr.

Jacob M. Valentine, jr.
Refuge Manager

May 10, 1957

Approved:

Lawrence S. Givens
Regional Refuge Supervisor

MAY 14 1957

Brush Clearing - BEFORE - D Impoundment - Kerr's Marsh. (refer to p. 4 and 7).

Brush Clearing - AFTER - Ditto above

BRUSH CLEARING - AFTER - North of D Dike
(refer to p. 4 & 7).

BRUSH CLEARING - SAND FENCE
(refer to p. 4 & 8)

BRUSH CLEARING - SAND FENCE
Inside edge of sand dunes north of D Dike
(refer to p. 7)

SAME AS ABOVE
(refer to p. 7)

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

WATERFOWL

REFUGE CHINCOTEAGUE NATIONAL WILDLIFE REFUGE MONTHS OF JANUARY TO MAY 1957, 19

(1) Species	(2) Weeks of reporting period: 1/5 (1)	1/12 (2)	1/19 (3)	1/26 (4)	2/2 (5)	2/9 (6)	2/16 (7)	2/23 (8)	3/2 (9)	3/9 (10)
Swans:										
Whistling *	10	10	10	10	10	16	16	16	16	16
Trumpeter										
Geese:										
Canada *	300	300	300	300	300	200	200	40	40	30
Cackling										
Brant *	1000	1000	1000	1000	1000	500	Few	Few	Few	Few
White-fronted										
Snow *	4000	4000	1500	100	100	500	500	32	-	-
Blue										
Other										
Ducks:										
Mallard*	600	600	400	400	400	400	200	200	200	200
Black *	8000	6000	4000	4000	4000	4000	4000	4000	4000	2000
Gadwall*	1000	1000	700	500	500	300	300	300	300	300
Baldpate *	2000	2000	1000	600	800	800	600	600	600	600
Pintail*	2000	2000	1000	500	500	500	500	500	500	200
Green-winged teal *	2000	1000	300	300	300	200	200	600	600	600
Blue-winged teal*	4	Few								
Cinnamon teal										
Shoveler *	500	500	300	200	200	200	200	400	400	300
Wood										
Redhead										
Ring-necked										
Canvasback										
Scaup										
Goldeneye										
Bufflehead										
Ruddy										
Other H. Merg.	42									
Coot: *	700	700	800	300	300	300	600	600	600	300

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

WATERFOWL
(Continuation Sheet)

REFUGE CHINCOTEAGUE NATIONAL WILDLIFE MONTHS OF JANUARY TO MAY 1957, 19____

(1) Species	(2) Weeks of reporting period: 3/16 11	3/23 12	3/30 13	4/6 14	4/13 15	4/20 16	4/27 17	4/30 18	(3) Estimated waterfowl days use	(4) Production: Broods seen	Estimated total
Swans:											
Whistling*	16	16							1,050		
Trumpeter											
Geese:											
Canada *	30±	150±	150	150	150	150	120	35	19,670		
Cackling											
Brant *	A few present at the south end of Chincoteague until 4/27								38,500		
White-fronted											
Snow *						2	2		75,124		
Blue											
Other											
Ducks:											
Mallard*	200	200	200	200	100	100	100	20	33,040		
Black *	2000	2000	2000	1000	1000	1000	400	400	369,600		
Gadwall*	300	400	400	400	200	200	100	50	50,610		
Baldpate*	600	400	400	400	200	200	100	30±	84,910		
Pintail*	200	200	100	100	100	30	30	10	63,490		
Green-winged teal*	600	1000	1000	1000	600	600	600	200	102,900		
Blue-winged teal*			20	20±	40	40	80	80	1,988		
Cinnamon teal											
Shoveler*	300	300	300	300	200	200	100	20	34,440		
Wood											
Redhead											
Ring-necked											
Canvasback											
Scaup											
Goldeneye											
Bufflehead											
Ruddy											
Other H. Merganser									294		
Coot: *	300	300	150	150	150	150	20	?	44,240		

(over)

	(5) Total Days Use	(6) Peak Number	(7) Total Production
Swans	1,050	16	
Geese	133,294	5,300	
Ducks	740,972	16,180	
Coots	44,240	700	

SUMMARY

Principal feeding areas

Principal nesting areas

Reported by Jacob M. Valentine, jr.
Refuge Manager

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 Chincoteague Months of January to May 1957 194

(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:										
P-billed grebe	Few present this winter				1	4/26				
Horned grebe	Present in sàat bays in vicinity				2	3/30				
D-c cormorant	500	4/18	500	4/18	Present in small numbers; birds migrating					
G-blue heron	Present		20	1/30	Present					
Amerttan egret	Few present		4	4/10	Present - Increasing					
Snowy egret	1	3/14			Present - "					
La. heron	3	4/23			Present in small numbers					
LB heron	1	3/30			Present in small numbers - inreasing					
Green heron	1	4/17			Present in small numbers - "					
B-c night heron	Few present - drop in numbers				Present in small numbers					
Am. bittern	3	3/29	2	4/3	Present in small numbers					
Cattle egret	2	4/7	4	4/12	Present in small numbers (4)					
Sora	1	3/12			Present in small numbers					
II. Shorebirds, Gulls and Terns:										
Wilson's snipe	Few present		5	3/30						
Hudsonian curlew	6	4/16	14	4/24	Present - increasing					
Willet	3	4/16	Common in area							
Yellow-lggs	1	3/25								
Great black backed gull	Few present this winter									
Laughing gull	2	3/30	Common							
Forster's tern	1	3/29	Common							
Black skimmer	6	4/22								

(over)

(1)	(2)	(3)	(4)	(5)	(6)
III. Doves and Pigeons:					
Mourning dove*	Few present this winter				
White-winged dove					
IV. Predaceous Birds:					
Golden eagle, Am.	None seen during period				
Duck hawk					
Horned owl					
Magpie *	1	3/29 (one of two records for the state).			
Raven					
Crow*	Present all winter				
Osprey	1	3/21	Present - nesting		
Sparrow hawk	Present		1	4/1	

Reported by Jacob M. Valentine, jr.

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

1613

Refuge CHINCOTEAGUE Months of JANUARY to MAY 1957, 19__

(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.
Bob-white quail - a few present in the Old Field - Ragged Point area										
Pheasant - a few may be present; none seen by the writer - released at one time.										

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.

Form NR-4

SMALL MAMMALS

Refuge CHINCOTEAGUE April 30, 19~~5~~57

(1) Species	(2) Density		(3) Removals					(4) Disposition of Fur							(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 Research	Permit Number	Trappers' Share	Refuge Share	Total Refuge Furs Shipped	Refuge Income	Furs Donated	Furs Destroyed	
Red fox	Entire refuge				3							Increase since 1955			
	1 fox trapped, 2 found dead - 4/17 - 21/57 - 9 active dens gassed.														
Raccoon	Entire refuge				10							Few~~ER~~than in 1955			
	5 coon clubbed to death during period; 4 coon trapped, 1 found dead - 4/17 - 22/57.														
Cotton-tail rabbit	- brushy areas - common but not abundent														
Muskrat	- present but scarce														

Predator control by crew of 8 during period 4/16 - 18/57; ca. 2,000 strychnine poisoned baits put out; some trapping but not much. Results difficult to determine: poisoned animals are not generally found. Coon sign present after poisoning but less abundent.

REMARKS:

1615

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. "List of North American Recent Mammals" by G. S. Miller, Jr., a very good reference, is now out of print, although a revision is scheduled for publication in the near future.)

(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, 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. Also show any removals not falling under heading listed.

(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 and the total income to the refuge by species, including share-trapped furs and furs taken by Service personnel. Total number of pelts of each species destroyed because of unprimness 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.