PEA ISLAND NATIONAL WILDLIFE REFUGE

NARRATIVE REPORT

SEPTEMBER 1 TO DECEMBER 31, 1946

CONTENTS

NR Forms 1, 1a, 5, 7, 8a and 9.

PEA ISLAND NATIONAL WILDLIFE REFUGE

NARRATIVE REPORT

SEPTEMBER 1 TO DECEMBER 31, 1946

I. GENERAL

A. Weather Conditions

The weather data for this report is taken from the Cooperative Meteorological records of Mrs. Rosa Drinkwater, Manteo, North Carolina. This being the nearest weather station and approximately twenty miles north of the Refuge the readings do not represent the reading accurately on the Refuge.

Following are some tables for comparison with corresponding period for last year.

	Precipitation	Max. Temp.	Min. Temp.
September 1946	1.76 Inches	94 Degrees	58 Degrees
October 1946	.82 "	85 "	46 "
November 1946	1.32 "	81 "	40 "
December 1946	1.34 "	75 "	27 "
Total	5.24 "		
September 1945	3.90 "	91 "	64 "
October 1945	1.30 "	84 "	42 "
November 1945	1.88 "	83 "	30 "
December 1945	4.69 "	63 "	23 "
Total	11.77 "		

B. Water Conditions

Although the rainfall for the current period was rather light it was well scattered, therefore, the water level in pond # 1 remained rather steady. A reading of approximately 4.30-50 all through the period. This afforded excellent feeding conditions

in the pond as the entire area was flooded to an average depth of 8-12 inches. Pool # 2 is still being flooded periodically with salt water and the level is controlled by the tides in the Sound.

II. WILDLIFE

A. Migratory Birds

1. Populations And Behavior

Waterfowl on the whole show an increase to the corresponding period for 1945. The Canada Geese increased approximately 20 % over last year and have remained on the area steady. The ducks, namely, Baldpates, Gadwall, Pintail and Teal have been here in good numbers until the close of the period. This migration is believed to have been causedby the weather rather than food conditions as the food and water has been excellent while the weather has been extremely mild this period. The writer was becoming somewhat alarmed about the concentrations of Snow Geese but they finally arrived in about their usual numbers the last two or three days of the period- approximately 5000 total. Their feeding habits have changed somewhat to that of last and previous years. Although there is a good growth and supply of Spartina Alterniflora in the area between the the ponds they have used the area in pond # 1 and the outer shoals exclusively until at the close of the period they are starting in on the alterniflora growths and sand flats on the north end of the area in the vicinity of Oregon Inlet.

Water birds, although never concentrating in large numbers have been here in their usual numbers. Whistling Swan show an increase over past years. There has been 100-125 using in pond # 1 during the entire period.

Marsh birds including coot seem to have changed very little. Approximately 400 have used the pond area the whole of the period.

Shorebirds have been noted throughout the period but have not been abundant since September. Several flocks of 200-300 Red-backed Sandpipers have been observed as well as a few Greater Yellow-legs, Willet,Dowitchers, Turnstones and Sanderlings.

Gulls and Terns which are common through September and November have been here in their usual numbers.

Hawks and Eagles have been very abundant throughout the period. 8 Bald Eagles were observed in one day.

2. Food And Cover

The heavy rainfall of the preceding period plus an average amount during the current period produced an abundant supply of food in the fresh water pond # 1 area and adjoining area, as well as maintaining an average water level which afforded excellent feeding conditions for the birds. There has been an abundant supply of Sago Pondweed, Muskgrass, Wild Millet and patches of Smartweed in the fresh water pond area as well as a good supply of Scirpus americanus, Beach Peas and Spartina Alterniflora over the higher flats and beach area. There is also a good supply of Widgeon and Eel grass on the shoals in the Sound. This is evidenced by the fact that the birds have concentrated there in lagge numbers whenever the tide allowed them.

3. Botulism

There has been no evidence of disease on the area to date. One canada goose was picked up but after close observation was found to have been shot. It has been put in a pen with food and fresh water and seemingly is going to recover.

4. Fur Animals

Muskrats continue to appear increasing as it is not uncommon to observe several in the water any time of day. An estimated twenty houses are in the area of pond # 1. It was thought we would have use of the Service plane for making a census on the rats by this time and we still hope to use it in the next few weeks.

Otter, also, seem to be increasing but not enough to become harmful to the area. Slides are observed along the Dikes and there are four in an estimated distance of 200 yards on the west dike to pond # 2.

III. REFUGE DEVELOPMENT MAINTENANCE

A. Physical Development

.1 Trucks

The ford pickup I-17276 is broken beyond repair caused from the several years service in the salt water which has rusted away the chasis. It is now stored to be used as tradin on new pickup as per regional office instructions. It has not been used this fiscal year.

Chevrolet pickup I-17153 is in good mechanical repair. Minor maintenance repairs are used when needed. Spring, Spring hangar bushings, door glass and periodic motor tune-up have been place on it this period.

Ford stake truck I-17291 is in fair mechanical condition other than the brakes. It has the old style open mechanical type brakes and it is impossible to keep them working with every day use in the salt water. It has been used exclusively as transportation for the dragline crew since the failure of the ford pickup andbecause of the brakes Mr. Gustafson obtained the transfer of the 1936 Panel truck from Mattamuskeet refuge to replace it. It will now be used only occasionally to haul heavy loads and fuel for the dragline and dike repairs.

2. Boats

Boat FWS-186 is in good mechanical condition and has needed no repairs this period. It will be given a coat of paint inside and out at the time the bottom will require a coat of copper in the early partof next period.

3. Buildings

All buildings are kept claen an orderly. It was planned to paint the overnight cabin this period but lack of personnel and every day work with the dragline for the last two months has prevented it. Plans now are to paint it the first of the following period.

4. Dike Repairs

The Dike repair work has been progressing slowly but steadily this period. The first break, the one nest to the ocean, of approximately 1400 feet has been completed. This included sprigging of dike and inside roadway or pool toe. The byers dragline has been shut down since october 31st for major overhauling. While waiting on shipment of parts the cab and boom was thoroughly sanded, chipped and cleaned and painted two coats of red lead. The machine cab was removed from the truck frame for replacement of center pin bushing and rollers. While apart the travel gears, brakes, and clutches were taken apart and cleaned, reapired,replaced and adjusted. Almost every working part of the machine has been observed and repaired or cleaned. It will return to moving material the first few days of january-47.

B. Plantings

Nothing to report.

C. Collections

Nothing to report.

D. Controlled Burning Operations

To date approximately 60 acres has been burned. That area west of the road and in between the dikes of pond # 1 and 2. More area is to be burned in January and plans were for more this period but weatheras well as working conditions has prevented it.

IV. PUBLIC RELATIONS

A. Refuge Visitors

We haven't had many official visitors this period. Mr. Baldwin, refuge biologist, visited the area one day and Game Management agent Carter visited the office one day for an hour or so.

Mr. Wolff and 3 students of Goldsboro, all member of North Carolina Bird Club, visited the Refuge for a bird count on Dec, 27.

B. Violations

Violations have not been numerous and there would not be any provided someone stayed on the area at all times, but when the writer has to leave the area for a day or two in the office there are always signe of trespass upon return to the area. Some firelighting has been observed on the outer shoals but it is physically impossible for the writer to take a skiff across the shoals alone. He has tried it two or three times but can't carry it and then paddle it by himself. A request was made to Game Agent Carter for assistance and he sent in Mr. Zeigler and Harrod from S.C. and Ga. for a period of two days and nights. As usual nothing happened in those nights. This season is practically gone but before another comes around an urgent request will be made for an assistant or patrolman.

Submitted by,

Date Submitted

Charles M. Parker

Approved,

Refuge Manager

3-1750
Form NR-1
(Nov. 1945)

WATERFOWL

Refuge Pea Island Refuge, N. C. Months of September to December 31, 1946

(1) Species	(2) First Seen		(3) Peak Concentration		(4) Last Seen		(5) Young Produced		(6) Total
Common Name	Number	Date	Number	Date	Number	Date	Broods Seen	Estimated Total	Estimated for Period
I. Swans:									
Whistling swan	1	10/18	150	12/20					200
II. Geese:									
Canada goose	10	10/1	6000	12/20					6000
Cackling goose	—								
Brant	50	12/21			50	12/21			500
White-fronted goose	—								
Snow goose	1	10/27	5000	12/30					5000
Blue goose	—								
III. Ducks:									
Mallard	4	12/1							4
Black duck	Resident		2500	12/20					2500
Gadwall	100	10/10	500	12/20					500
Baldpate	20	10/10	250	12/20					250
Pintail	25	10/10	2500	12/20					2500
Green-winged teal	15	10/10	500	12/20					500
Blue-winged teal	20	9/10	200	11/1					200
Cinnamon teal	—								
Wood duck	-				1	9/5			1
Red head	4	12/20			4	12/20			4
Ring-necked duck	None Observed								
Canvas-back	3	12/15			3	12/15			3
Scaup	12	11/17	1500	12/20					1500
Golden-eye	No Observations								
Buffle-head	5	10/27	25	12/20					25
Ruddy duck	3	10/27	25	12/20					25
Shovellers	20	10/1	300	12/20					300
Mergansers, Red-breasted	50	10/27	20,000	12/20					20,000
IV. Coot	10	10/1	400	12/20					400

(over)

SUMMARIES

Total Production:

Geese.....

Ducks.....

Coots.....

Total waterfowl usage during period 40,112

Peak waterfowl numbers 40,112

Areas used by concentrations All of Refuge area including Pauline Sound

Principal nesting areas this season.....

Reported by Charles M. Parker

INSTRUCTIONS

(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) First Seen: The first refuge record for the species during the season concerned in the reporting period, and the number seen. This column does not apply to resident species.

(3) Peak Concentration: 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 in the reporting period.

(5) Young Produced: 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.

(6) Total: Estimated total number of the species using the refuge during the period. This figure may or may not be more than that used for peak concentrations, depending upon the nature of the migrational movement.

Note: Only columns applicable to the reporting period should be used. It is desirable that the Summaries receive careful attention since these data are necessarily based on an analysis of the rest of the form.

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

MIGRATORY BIRDS
(other than waterfowl)

Refuge Pea Island, N. C. Months of September 1 to December 31 1946

(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:										
Cormorant	Throughout Period									10
Heron, Great Blue	"	"								10
Egret, American	"	"	100	10/10						100
Egret, Snowy	"	"	50	10/10						50
Heron, Louisiana	Occasionally throughout Pd.				1*****	12/27*				5
Bittern, American	"		"	"	1	12/27				5
II. Shorebirds, Gulls and Terns:										
Sandpiper, Least	Throughout Period									
Sandpiper, Red-backed	"	"								
Dowitcher	Occasionally throughout period									
Sanderling	"		"	"						
Yellow-legs, Greater	"		"	"						
Turnstone, Ruddy					2	10/15				
Willet					1	10/17				
Gull, Herring			4000	12/27						
Gull, Laughing	Common throughout period									
Tern, Common	"	"	"							
Tern, Least	"	"	"							
Gull, Great black-back	46	12/27								
Skimmer, Black			4000	11/1						4000
Gannet	25	11/1	3000	12/27						3000

(over)

(1)	(2)	(3)	(4)	(5)	(6)
III. Doves and Pigeons:					
Mourning dove	Observed occasionally				
White-winged dove	"				
IV. Predaceous Birds:					
Golden eagle	—				
Duck hawk	1	9/20	10	1 12/27	10
Horned owl	—				
Magpie	—				
Raven	—				
Crow	—				
Osprey	Observed throughout period				20
Eagle, Bald	"	"	"		20

Reported by Charles M. Parker

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.

Refuge PEA ISLAND REFUGE Months of SEPT. 1 to DEC. 31, 1946

(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.
NOT APPLICABLE TO PEA ISLAND REFUGE										

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.

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

Form NR-3
(June 1945)

BIG GAME

Refuge PEA ISLAND REFUGE, MANTEO, N. C. Calendar Year ~~1945~~ 1946

(1) Species	(2) Density	(3) Young Produced	(4) Removals				(5) Losses			(6) Introductions		(7) Estimated Total Refuge Population		(8) Sex Ratio
Common Name	Cover types, total Acreage of Habitat	Number	Hunting	For Re-stocking	Sold	For Research	Predation	Disease	Winter Loss	Number	Source	At period of Greatest use	As of Dec. 31	
NOT APPLICABLE TO PEA ISLAND REFUGE														

Remarks:

Reported by _____

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: 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 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</u> <u>species</u> on the refuge at period of its greatest abundance and also as of Dec. 31.

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

116008

Refuge Pea Island, N. C. Sept. 1 to Dec. 31 Year 1946

Botulism

Period of outbreak None

Period of heaviest losses

Losses:

	Actual Count	Estimated
(a) Waterfowl	None	
(b) Shorebirds	None	
(c) Other	None	

Number Hospitalized	No. Recovered	% Recovered
(a) Waterfowl		
(b) Shorebirds		
(c) Other		

Areas affected (location and approximate acreage)

Water conditions (average depth of water in sickness areas, reflooding of exposed flats, etc.

Condition of vegetation and invertebrate life Good

Remarks

Lead Poisoning or other Disease

Kind of disease None

Species affected

Number Affected Species	Actual Count	Estimated

Number Recovered

Number lost

Source of infection

Water conditions

Food conditions

Remarks Nothing to report. No disease to date. One Canada Goose was picked up but found to have been wounded by gunshot.

Refuge PEA ISLAND REFUGE, MANTEO, N. C. Year 1946

Species	Relative Abundance	Sport Fishing		Commercial Fishing		Restocking		Number removed for Restocking
		Man days Fishing	Number Taken	No. of Permits	Pounds Taken	Number Stocked	Area Stocked	
NOT APPLICABLE TO PEA ISLAND REFUGE								

REMARKS:

Form NR-7

PLANTINGS
(Marsh - Aquatic - Upland)

Refuge Bee Island, N. C. Sept.1 to Dec. 31, Year 194 6

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
Nothing to report								

TOTAL ACREAGE PLANTED:

Marsh and aquatic_____
Hedgerows, cover patches_____
Food strips, food patches_____
Forest plantings_____

1618

Form NR-8
(Revised)

CULTIVATED CROPS

Refuge PEA ISLAND REFUGE, MANTEO, N. C. Year 194 6

42675

Permittee (If farmed by refuge personnel, so indicate)	Permit No.	Unit or Location	Crops Grown	Ave. Yield per Acre	Permittee's Share		Government's Share or Return				
							Harvested		Unharvested		Compensatory Services, or Cash Revenue
					Acres	Bu. Harvested	Acres	Bu.	Acres	Bu.	
NOT APPLICABLE TO PEA ISLAND REFUGE											

Summary of Crops Grown:

Crop	Acreage	Permittee's Share		Government's Share				Total Revenue
		Acres	Bushels	Harvested Acres	Harvested Bu.	Unharvested Acres	Unharvested Bu.	$

DIRECTIONS FOR PREPARING FORM NR-8
CULTIVATED CROPS

Cultivated Crops Report Form NR-8 should be prepared on a calendar-year basis for all crops harvested or utilized during the calendar year and submitted with the December 31 refuge report.

Permittee - List each permittee separately. If lands of the refuge are farmed by refuge personnel or hired labor, this should be indicated in the Permittee column.

Permit No. - List the number of the Special Use Permit issued to the individual.

Use or Location - The Unit No. or name specified in the Economic Use Plan should be listed in this column.

Crops Grown - A separate line of the form should be used for each crop grown by each permittee or by refuge personnel. This is important, since if each crop grown by each operator is not specifically enumerated, the report will be of no value for statistical purposes.

Average Yield per Acre - It is important that the average yield per acre of each crop grown by each operator should be shown.

Permittee's Share - Only the number of acres harvested or utilized by the permittee for his own benefit should be shown under the Acres column, and only the number of bushels of farm crops harvested by the permittee for himself should be shown under the Bushels Harvested column. It is requested that all crops harvested be reduced to bushels wherever possible, or, as in the case with the harvesting of seed such as that of sweet clover, alfalfa, bromegrass, etc., the total harvested crop in pounds may be shown. Timothy, alfalfa, or other hay harvested by the permittee should be shown on Form NR-10 and should not be shown in the Permittee's Share column.

Government's Share or Return - Harvested - Show the number of bushels harvested for the Government and the acreage from which this share is harvested, both for grain raised by refuge personnel and by permittees. Unharvested - show the exact number of acres of crops allowed to remain unharvested as food and cover for wildlife. An estimate of the number of bushels of grain that is available for the wildlife in such unharvested crops should be shown in the Bushels column.

Compensatory Services, or Cash Revenue - Show other services received by the Government in cooperative farming activities, the number of acres of food strips planted for wildlife, the amount of wildlife crops not otherwise reported that are planted by cooperators for the Service, or the cultivation of wildlife plantations. If the permit is on a fee basis, the total cash revenue received by the Service.

3-1570
NR-8a

REFUGE GRAIN REPORT

Refuge Pea Island Months of Sept. 1 thru Dec. 31, 1946

(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 USE		
				TRANS-FERRED	SEEDED	FED	TOTAL		SEED	FEED	SURP.
Wheat	3 Bu.	None	3	0	0	3 Bu.	3	0			

(8) Indicate shipping or collection points

(9) Grain is stored at

(10) Remarks

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 lbs., Corn (ear)--70 lbs., Wheat--60 lbs., Barley--50 lbs., Rye--55 lbs., Oats--30 lbs., Soy Beans--60 lbs., Millet--50 lbs., Cowpeas--60 lbs., and Mixed--50 lbs. In computing volume of granaries, multiply the cubic contents (cu. ft.) by 0.8 bushels.

(1) List each type of grain separately: Corn, wheat, proso millet, etc. 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 breakdown by varieties of grain listed in Column 6.

(8) Nearest railroad station for shipping and receiving.

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

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

Form NR-9

COLLECTIONS AND RECEIPTS OF PLANTING STOCK
(Seeds, rootstocks, trees, scions)

Refuge **Pea Island , N. C. Sept.1 to Dec. 31** Year 1946

Species	Collections				Receipts		Total Amounts on Hand	Amount Surplus
	Amount	Date or Period or Collection	Method	Unit Cost	Amount	Source		
Nothing to report								

Form NR-10

HAYING AND GRAZING

Refuge Pea Island Refuge, Manteo, N. C. Year 1946

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
NOT APPLICABLE TO PEAISLAND REFUGE									

Totals:

Acreage grazed_____ Animal use months_____ Total income Grazing_____

Acreage cut for hay_____ Tons of hay cut_____ Total income Haying_____

1621

Form NR-11

TIMBER REMOVAL

Refuge PEA ISLAND REFUGE, MANTEO, N. C. Year 1946

Permittee	Permit No.	Unit or Location	Acreage	No. of Units Expressed in B.F., ties, etc.	Rate of Charge	Total Income	Reservations and/or Diameter Limits	Species Cut
NOT APPLICABLE TO PEA ISLAND REFUGE								

Total acreage cut over_____ Total income_____

No. of units removed B. F._____ Method of slash disposal_____

Cords_____

Ties_____

_____


DEPARTMENT OF THE INTERIOR
RECEIVED
JAN 15 1947
REGIONAL OFFICE
ATLANTA, GA.
FISH AND WILDLIFE SERVICE

PEA ISLAND NATIONAL WILDLIFE REFUGE

NARRATIVE REPORT

MAY 1 TO AUGUST 31, 1946

C O N T E N T S

NR Forms 1, 1a, and 8a

PEA ISLAND NATIONAL WILDLIFE REFUGE

NARRATIVE REPORT

MAY 1 TO AUGUST 31, 1946

I. GENERAL

A. Weather Conditions

The weather data for this report is taken from the Cooperative Meteorological records of Mrs. Rosa Drinkwater, Manteo, North carolina. This being the nearest weather station and approximately twenty miles north of the Refuge, the readings do not represent the readings accurately on the Refuge.

Following are some tables for comparison with corresponding period for last year.

	Precipitation	Max. Temp.	Min. Temp.
May 1946	2.08 Inches	86 Degrees	37 Degrees
June 1946	5.40 "	96 "	58 "
July 1946	15.74 "	96 "	64 "
August 1946	4.50 "	93 "	61 "
Total	27.72 "		
May 1945	3.09 "	69 "	43 "
June 1945	7.37 "	95 "	52 "
July 1945	7.04 "	97 "	66 "
August 1945	2.81 "	93 "	63 "
Total	20.31 "		

B. Water Conditions

Due to the abundant but well scattered rainfall during the period the water level in fresh water pond # 1 has remained at an excellent height. The entire area is estimated to have been covered to an average depth of 18-20 inches. The gauge reading remained at an average of 4.20-30 during May and June but increased to 4.75-5.00 all through July and August.

This increased water level has afforded a good supply of water for the growth of acquatic vegetation in the pond. Dr. Bourn and Mr. Baldwin in spected the pond during their recent visit here and were very well pleased with the food conditions and growth.

Pool # 2 is still being flooded periodically with salt water and is controlled by the tides from the sound. I hope that we will be able to omit this repeated statement in a few months as the Dragline is at work daily on the repair of the north Dike.

II. WILDLIFE

A. Migratory Birds

1. Populations And Behavior

As usual the majority of Waterfowl had migrated by the beginning of this period. However, there were a small number of Canada Geese (500), Black Duck (200), Gadwall (50), and Blue Wing Teal (200) using the area at the start of this period. It seem that the spring migration was some few weeks later than usual. All birds left however by the last of May or first of June except a few that remained to nest.. It is estimated that we raised approximately 400 Black Ducks this summer. This estimation is based on number of nests observed and allowing for rest of the area. Approximately 20 nest were observed and 80 young birds were seen regularly in the fresh water pond and vicinity of overnight cabin. During the nesting season it was not uncommon to flush a female most any place along the marsh. Three broods of Gadwall, approximately 30 birds, were observed in fresh water pond # 1. Approximately 50 Blue Wing Teal remained on the pond until the middle of June but if there was any nesting done there was no young raised as there were not any seen. 4 Canada Geese remained all summer and during the second week in August a flock of 13 were observed. It is thought that these geese came in from some of the adjoining areas. Not a early migrating flock. Red-breasted Mergansers were seen as late as the latter part of June.

Although many of the Shorebirds had passed through the area during the preceding period there was a good flight of several species with heavy concentrations during May. There has been a good return flight during August of Greater-yellow legs, Red-backed Sandpiper, Semi-palmated Sandpiper, Dowitchers, Semi-palmated Plovers and a few Black-bellied Plovers. Willet were plentiful but curlew were scarce.

The wading birds have been here in their usual numbers and it is believed a few nested here. Several birds were observed,(Snowy Egrets), in the Black Crowned night heron rookery near the overnight cabin,but, no nests were found.

Gulls and Terns continue to use the outer islands in the Sound for nesting. There were very few Common and Least Tern, and Black Skimmers nesting this season. The reason is not known.

Ospreys have been abundant and several Bald Eagle have been observed. 8 were noted one day during the middle of August.

2. Food And Cover

The abundant rainfall of this period plus the above average the preceding period has produced an abundant supply of food in the fresh water ponds and adjacent areas. Particularly those burned last fall and early spring. There is a wonderful growth and supply of Scirpus americanus on these areas and is well scattered over the other area too. Spartina alterniflora has done well and especially on thearea between the dikes where the Snow Geese feed regularly. It was a barren mud flat when they left in the early spring but is now covered with a good growth for them this fall and winter. Scirpus robustus is abundant in the marshes of the pond and because of the heavy rainfall has continued to grow in the higher areas. There is a bountiful supply of Sago Pondweed, Muskgrass and Wild Millet as well as scattered patches of Smartweed in the Fresh water pond area too. There seems to be an unusually good supply of Widgeon grass in the Sound and Eel grass is established well enough near Oregon Inlet to afford a fairly abundant supply of food this coming season.

3. Botulism

There has been no disease on the area this period. This is partly proven by the fact that only four geese remained this year and they were able to fly all summer other than a few weeks while moulting.

4. Fur Animals

Muskrats continue to be increasing because it is not uncommon to see several in one days time on the area. A careful census will be made this fall to determine the number on the area. The writer is of the opinion that a few should be removed before damage is done to the dikes.

Otter also are observed regularly but not in sufficient numbers as to become harmful to the area.

III. REFUGE DEVELOPMENT MAINTENANCE

A. Physical Development

1. Trucks

The ford Pickup I-17276 is in such bad condition that it cannot be used. The chasis has been broken and patched in so many places there is no more room for patches. It has not been used this period.

Chevrolet pickup I-17153 is in good mechanical condition. Some few maintenance repairs were done this period. Body and cab sanded and painted, horn and light wires replaced and periodic moter tune ups.

Ford truck I-17291 is in fai mechanical condition and it is planed to give it a coat of paint in the near future. Now that the ford pickup has gone it is used exclusively by the wage employees in connection with the Dike repair work. It is an old truck to start with and will not last long with every day use in the salt water and sand.

2. Boats

Boat FWS-186 is in good condition and has been painted inside and out this period. The hull was dried and copper painted twice. Once in early May and once the last of August. It will now be safe until next spring because the worm and barnacle season is over.

3. Buildings

The overnight cabin is kept in a clean, orderly and saintary condition. The green trim which includes doors, windows and facings were painted this period. The outside walls will be painted before the winter rains begin.

A new tar paper roof was put on the storage shed this period.

4. Dike And Sand Fence Repair

The Dike repair work on the north dike of pool # 2 has been going steadily but slowly this period. The dragline has given never ceasing trouble and we can never get one smooth days operation out of it even though we are constantly replacing with new parts. It is worn out all over and something new breaks each time. We have never had the same trouble twice. We are in hopes that in a few more weeks we will have it in shape to do a little work. We are contemplating a repair job of approximately 500 dollars now.

The first break of approximately 1300 feet near the ocean and road will be completed in the next 8-10 working days. This includes sprigged with grass and complete.

The crown or top of sand fence along the ocean the entire length of pond # 1 has been planted with grass- Spartina petans, Ammophila and mixed with Sea Oats. Due to the unusual amount of rain survival has been excellent. A total of 111 man days was used in sprigging.

4. Cattail Cutting

Cattail has tried to take Pond # 1 this year and 30 man days labor has been used to cut them and it is estimated that 30 man days more is required to finish the cutting. Labor is not too plentiful and we had to stop the cattail cutting and go to the sprigging work behing the dragline on the finished part of the dike. It is planed to complete or finish the cutting in the early part of September.

B. Plantings

Approximately 1000 Diamond Back turtles were received from Dr. Prytherch, Beaufort, N. C., and were released in the creeks and pond #1 adjacent to the overnight cabin. They arrived in good condition and very few had died.

C. Collections

Nothing to report.

IV. PUBLIC RELATIONS

A. Refuge Visitors

Officials visiting this station during the period includes Mr. Silver, Mr. Dittman, Mr. Arthur F. and Howard A. Miller of the Regional Office and Dr. Bourn of the Central Office. Mr. Baldwin accompanied Dr. Bourn.

B. Violations

Nothing to report.

Date Submitted _____

Submitted by,

Charles M. Parker
Refuge Manager

Approved, _____

3-1750
Form NR-1
(Nov. 1945)

WATERFOWL

Refuge Pea Island Months of May 1 to August 31, 1946

(1) Species	(2) First Seen		(3) Peak Concentration		(4) Last Seen		(5) Young Produced		(6) Total
Common Name	Number	Date	Number	Date	Number	Date	Broods Seen	Estimated Total	Estimated for Period
I. Swans:									
Whistling swan	None								
II. Geese:									
Canada goose			500	5-1	13	8-10			500
Cackling goose	None								
Brant	None								
White-fronted goose	None								
Snow goose	None								
Blue goose	None								
III. Ducks:									
Mallard	None								
Black duck			200	5-1			20	400	500
Gadwall			50	5-1			3	5 0	150
Baldpate	None								
Pintail	None								
Green-winged teal	None								
Blue-winged teal			200	5-1	200	6-15	None		200
Cinnamon teal	None								
Wood duck	Resident								
Red head	None								
Ring-necked duck	None								
Canvas-back	None								
Scaup	None								
Golden-eye	None								
Buffle-head	None								
Ruddy duck	None								
IV. Coot			50	5-1	2	6-12			100

(over)

SUMMARIES

Total Production:

Geese None

Ducks 450

Coots None

Total waterfowl usage during period 1500

Peak waterfowl numbers 1000

Areas used by concentrations Fres water ponds and surrounding Marsh area.

Principal nesting areas this season Marsh near the sound.

Reported by Charles M. Parker

INSTRUCTIONS

(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) First Seen: The first refuge record for the species during the season concerned in the reporting period, and the number seen. This column does not apply to resident species.

(3) Peak Concentration: 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 in the reporting period.

(5) Young Produced: 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.

(6) Total: Estimated total number of the species using the refuge during the period. This figure may or may not be more than that used for peak concentrations, depending upon the nature of the migrational movement.

Note: Only columns applicable to the reporting period should be used. It is desirable that the Summaries receive careful attention since these data are necessarily based on an analysis of the rest of the form.

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

MIGRATORY BIRDS
(other than waterfowl)

Refuge Pea Island Months of May 1 to August 31 1946

(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:					Observed occaaaionally					
Cormorant			100	5-1	throughout period					100
Heron, Great Blue	Resident									25
Egret, American	10	5-4	500	8-10						500
Egret, Snowy	Throughout	period	400	8-10				None		400
Heron, Black Night Crown	Resident							25	100	200
Heron., Louisiana	4	5-20	100	8-10				None		100
II. Shorebirds, Gulls and Terns:										
Sandpiper, Least			100	5-1						2000
Sandpiper, Red-backed			3000	5-1						5000
Sandpiper Semi-palmated			5000	5-25						5000
Dowitcher			1000	5-10						2000
Plover, Semi-palmated		5-10	4000	8-10						4000
Yellow-Legs, Greater			2000	8-10						4000
" " , Lesser			500	8-10						2000
Gull, Laughing			1500	6-10						2500
Gull, Herring			200	5-10						200
Tern, Common			500	6-10						1000
Tern, Least			300	6-10						1000
Tern, Royal			100	6-10						200
Tern, Caspian			50	6-10						100

(over)

(1)	(2)	(3)	(4)	(5)	(6)
III. Doves and Pigeons:					
Mourning dove	Observed occassionally (No records)				
White-winged dove					
IV. Predaceous Birds:					
Golden eagle					
Duck hawk					
Horned owl					
Magpie					
Raven					
Crow					
Osprey	Observed throughout period				75
Eagle, Bald	"	"	"		12

Reported by Charles M. Parker

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.

3-1570
NR-8a

REFUGE GRAIN REPORT

Refuge **Pea Island** Months of **May 1** thru **Aug. 31** 194**6**.

(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 USE		
				TRANS-FERRED	SEEDED	FED	TOTAL		SEED	FEED	SURP.
Wheat	**3 Bu.**				**None**		**None**	**3 Bu.**		**X**	

(8) Indicate shipping or collection points **Manteo, N. C.**

(9) Grain is stored at **Overnight cabin, Pea Island**

(10) Remarks

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 lbs., Corn (ear)--70 lbs., Wheat--60 lbs., Barley--50 lbs., Rye--55 lbs., Oats--30 lbs., Soy Beans--60 lbs., Millet--50 lbs., Cowpeas--60 lbs., and Mixed--50 lbs. In computing volume of granaries, multiply the cubic contents (cu. ft.) by 0.8 bushels.

(1) List each type of grain separately: Corn, wheat, proso millet, etc. 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 breakdown by varieties of grain listed in Column 6.

(8) Nearest railroad station for shipping and receiving.

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

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

PEA ISLAND NATIONAL WILDLIFE REFUGE

NARRATIVE REPORT

JANUARY 1 TO APRIL 30, 1946

C O N T E N T S

PEA ISLAND NATIONAL WILDLIFE REFUGE

NARRATIVE REPORT

JANUARY 1 TO APRIL 30, 1946

I. GENERAL

A. Weather conditions

The weather data for this report is taken from the cooperative Meteorological records of Mrs. Roas Drinkwater, Manteo North Carolina. This being the nearest weather station and approximately twenty miles north of the Refuge, the readings do not represent the rainfall accurately on the Refuge.

Following are some tables for comparison with corresponding period for last year.

	Precipitation	Max. Temp.	Min. Temp.
January 1946	3.52 in.	73 degrees	27 degrees
February "	5.66 "	75 "	30 "
March "	.61 "	81 "	37 "
April "	1.96 "	87 "	41 "
Total	11.75 "		
January 1945	1.40 "	59 "	23 "
February "	6.56 "	78 "	19 "
March "	.40 "	88 "	33 "
April "	.24 "	88 "	45 "
Total	8.60 "		

B. Water Conditions

Due to the abundant but well scattered rainfall the water level this period was kept at an excellent height in fresh water pond # 1. The entire area is estimated to have been covered to an average depth of 8-10 inches. The gauge reading remainedat an average reading of 4.50-60 through most of the period. Dr. Cottam inspected the pond during his visit in March relative to water level and vegetation. He stated that the water level was perfect and recommended that we never allow the water level to increase during feeding seasons.

HIGHLIGHTS OF THE YEARS ACTIVITIES

Due to the feeding areas on which the birds concentrate for feeding and resting being so easily accessible to the public, while traveling through the Refuge at all hours, constant observation and patrol was performed during the winter season. This was quite a job for a personnel of one but most of his time was spent on the area. Travel was performed at the most unexpected hours and days in an effort to keep the public guessing as to where he would be next. A great deal of night patrol was performed trying to locate the tales of being told about firelighting. None found yet.

All equipment has been periodically inspected and maintenance repairs have been put on all during the year. Due to lack of personnel much of this work has had to be done in commercial shops.

Refuge signs have been replaced from time to time and have been kept up through the Refuge.

Controlled Burning operations was carried on on approximately 200 acres, scattered over the period October-March. This produced much of the green food and was used heavily by the birds. Observations this year indicate that the burning in the early spring months produces more green food than the late fall burning. Of course climatic conditions was mostly responsible. The weather was too severe for the fall burned areas to come back green while the February-March burned areas were out green in 10 days. These same areas to date are farther along in reproduction than the fall burned areas.

Dike repairs began in January with the arrival of the Dragline from White River. All efforts have been turned to this work and considerable progress has been made to date considering that the machine is old and only a 1/2 yd. capacity. We hope to complete the work in 18 months but considering the capacity of the machine it is doubtful.

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B. Water Conditions

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Although Pool # 2 is still being flooded periodically with salt water and is controlled by the tides from the Sound it supports a surprising population of Waterfowl.

II. WILDLIFE

A. Migratory Birds

1. Populations And Behavior

Waterfowl which are chiefly winter visitors show a considerable decrease over previous years but only a very slight decrease for the corresponding period last year. There was an abundant supply of food but the birds never did arrive. The Canada Goose population remained approximately the same as last year, 5000-6000. Reports indicated there was heavier concentrations inland than here along the coast. We still have approximately 600-800 at the close of the period. The Snow Goose population of approximately 5000 shows an increase of 50 % to the corresponding period of last year. This report just can be included in this narrative as the birds all left January 7, approximately ten days-two weeks earlier than usual and much too early to be included in the January inventory. Ducks have shown very little change in numbers as compared to last year. Red-breasted Mergansers remain quite plentiful with an estimated number of 25,000 using the Refuge and approximately 10,000 on the area at the close of the period. There seems to have been a good spring flight of both Green and Blue Wing Teal. Most of the Shovelers left in April but some 50-75 were observed at the close of the period.

Water birds which never concentrate here in large numbers have been here in their usual numbers. Whistling Swan remained in the fresh water pond through most of the period. They showed an increase of 100 % as compared to last year and 25 remaine in the pond until the first week in April.

Marsh birds are rarely seen or heard and no figures are available for comparison. Coots however show a slight decrease as compared to last year.

Shorebirds have been noted throughout the period. At the close of the period the spring migration, which started in March, is well under way and several species have become common. There has been a good flight of Greater yellow-legs, Red backed sandpipers and Least sandpipers. The salt marshes where the vegetation has been removed by the Snow Geese has made an excellent feeding area for this species. Sanderling still prefer the seashore to the flats through the Marshes.

Gulls and Terns have been here in their usual numbers. Most of the winter population including Great black-back gull, Herring and Ring-billed have left at the close of the period. A small number of immature birds remain. Quite a number of the Least and Common tern have arrived for the nesting season. No nests have been observed. A record was made for the Refuge and North Carolina when on March 23 Dr. Cottam, Regional Director Pearce, of Boston, Mr. C. E. Addy Parker River Refuge, and myself captured a Glaucus Gull. Dr. Cottam is publishing the record in the Magazine The Auk.

Hawks and Eagles have been very abundant as usual. All of this group, except Osprey, are winter visitors and do not show any change in numbers.

2. Food And Cover

Water conditions have been very favorable and there was a good supply of food in pond # 1. Sago pondweed, Muskgrass and Wild millet was found in sufficient quatities as to produce much of the food. Too there was a good growth of other submerged acquatic plants. Dr. Cottam also stated after inspecting the pond that he was very much impressed with the favorable food conditions found. Through the marshes Spartina alterniflora, Scirpus americanus and Scirpus robustus produced much of the food. Areas burned in the controlled burning program have produced much green food. Areas burned early in the Spring have been found to be used much more by the birds than the areas burned last fall. Widgeon grass was available on the Sound at low tides and this was evidenced by the constant concentration of geese on the shoals. On the whole there seems to have been an abundant supply of food for the birds at all times.

3. Botulism

There has been very little disease on the area to date. Less than ten birds have been found affected with parasitism during the period. This is very much in contrast to the everlasting tales of the general public as to the number that die each spring but they admit they have not seen any this year.

4. Fur Animals

Muskrats continue to appear to be increasing. It is not uncommon to see them during the day and the houses can be seen all over the area. They have dug under the road inside the dike causing some damage and it is thought that possibly we will have to trap some of them in the near future.

Otter also seem to be increasing. Several slides can be seen crossing over the dikes and several animals have been seen. One is a nightly visitor around the dragline.

III. REFUGE DEVELOPMENT MAINTENANCE

A. Physical Development

1. Trucks

The Ford pickup, I-17276 is in very poor condition and just enough repairs are put on it to keep it running for the use of the dragline crew on the island. It is evident that we will have to replace it sometime in the near future.

The Chevrolet pickup, I-17153 is in good mechanical condition and has a neat appearance. Some maintenance repairs were done this period-motor tuneup, bearings taken up and new oil pump installed.

Truck I-17291, 1 1/2 ton stake ford, transferred from Reelfoot Refuge in January is in fair mechanical condition. Brakes and front end was repaired this period and it is planned to build a new flat and paint it as soon as funds are available.

2. Boats

Boat FWS-186, Red Head II, is in good condition and a new exhaust manifold was installed during the period. The motor runs as good as new. Faulty water circulation caused by improper water fittings was found and corrected. It is on the dry dock at the close of the period for the hull to be dried, cleaned and copper painted.

3. Buildings

The overnight cabin is kept in a clean, orderly condition and a new water tank was installed during the period.

4. Dike Repair

The dragline started work on the dike in the last few days of January. Although the machine is only a 1/2 yd. machine and we have had considerable trouble with it, the material for the first break near the ocean has been handled twice and the third and last cast will be started soon. It is doubtful if with the present machine we will complete the work in 18 months.

B. Plantings

Nothing to report.

C. Collections

Nothing to report.

IV. PUBLIC RELATIONS

A. Refuge Visitors

Officials visiting this station during the period included Dr. Cottam of the Chicago Office, Regional Director Pearce of Boston, and Mr. C. E. Addy of the Parker River Refuge. Patrolman Fickle and Myers of the Reelfoot Refuge were also here for two days while making delivery of load of Steel Mats.

B. Violations

No one apprehended this period. Violations are mighty few and far between on this area. Probably a few shots are taken at the birds from the automobiles passing through the Refuge but we will be lucky if we ever apprehend anyone for it. All in all the public have shown respect for the area this season.

Submitted by,

Charles M. Parker

Charles M. Parker,
Refuge Manager

Date Submitted,

5-7-44

Approved,

Arthur [illegible]

3-1750
Form NR-1
(Nov. 1945)

WATERFOWL

Refuge Pea Island Months of January 1 to April 30 1946

(1) Species	(2) First Seen		(3) Peak Concentration		(4) Last Seen		(5) Young Produced		(6) Total
Common Name	Number	Date	Number	Date	Number	Date	Broods Seen	Estimated Total	Estimated for Period
I. Swans:									
Whistling swan			~~125~~ 75	1/1	25	4/3			75
II. Geese:									
Canada goose			6000	1/1	600	4/30			6000
Cackling goose									
Brant									
White-fronted goose									
Snow goose			5000	1/1	1	3/23			5000
Blue goose									
III. Ducks:									
Mallard					4	3/16			4
Black duck			2500	1/30					2500
Gadwall			400	4/1					400
Baldpate			200	1/30	50	3/23			200
Pintail			500	1/30	75	3/23			500
Green-winged teal			800	4/22					800
Blue-winged teal			200	4/22					200
Cinnamon teal									
Wood duck									
Red head									
Ring-necked duck			Very Rare		2	4/22			
Canvas-back			2500	1/30					2500
Scaup			2000	1/30	20	2/-			2000
Golden-eye									
Buffle-head			1200	1/30					1200
Ruddy duck			50	2/8	2	4/22			50
Shoveler			500	3/23					500
Merganser, Red-Breasted			25000	1/31	10000	4/30			25,000
IV. Coot			700	1/30					200

(over)

SUMMARIES

Total Production:

Geese.....

Ducks.....

Coots.....

Total waterfowl usage during period ~~42,000~~ 47,629

Peak waterfowl numbers ~~42,000~~ 47,620

Areas used by concentrations Marsh area & Shoals in open water

.....

Principal nesting areas this season.....

.....

Reported by Charles M. Parker

INSTRUCTIONS

(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) First Seen: The first refuge record for the species during the season concerned in the reporting period, and the number seen. This column does not apply to resident species.

(3) Peak Concentration: 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 in the reporting period.

(5) Young Produced: 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.

(6) Total: Estimated total number of the species using the refuge during the period. This figure may or may not be more than that used for peak concentrations, depending upon the nature of the migrational movement.

Note: Only columns applicable to the reporting period should be used. It is desirable that the Summaries receive careful attention since these data are necessarily based on an analysis of the rest of the form.

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

MIGRATORY BIRDS
(other than waterfowl)

Refuge Pea Island Months of January 1 to April 30 1946

(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:										
Cormorant										400
Heron, Great Blue										15
American Egret	5	3/29								25
Snowy Egret	4	4/22	Remains Scarce							4
Heron, Blk. Crowned N.					1	3/29				
II. Shorebirds, Gulls and Terns:										
Sandpiper, Least	2000	4/22	2000	4/22						2000
Sandpiper, Red-Backed			4000	4/22						4000
Willet	1	4/22	Scarce							
Yellow-legs, Greater	10	3/20	800	4/22						1500
Gull, Great Black Back					5	3/23				75
Gull, Herring			4000	1/10						6000
Gull, Ring-billed			300	1/10						500
Gull, laughing			1000	1/10						1500
Tern, common	50	4/22								100
Tern, least	100	4/22								800
Tern, royal	2	4/22								100
Tern, caspian	4	4/22	No estimates							

(over)

(1)	(2)		(3)		(4)		(5)			(6)
III. Doves and Pigeons:										
Mourning dove										10
White-winged dove										
IV. Predaceous Birds:										
Golden eagle										
Duck hawk					1	4/22				
Horned owl										
Magpie										
Raven										
Crow										
Osprey	2	3/22	10	4/22						1
Eagle, Bald					2	4/22				8

Reported by Charles H. Parker

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-4

SMALL MAMMALS

Refuge Pea Island Refuge April 30, 1946

(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	
Muskrat	Marsh			No removals				None				Est.	———	———	100
Otter				No removals								"			10-12

REMARKS:

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 specially requested.

3-1570
NR-8a

REFUGE GRAIN REPORT

Refuge Pea Island Months of January thru April 1946.

(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 USE		
				TRANS-FERRED	SEEDED	FED	TOTAL		SEED	FEED	SURP.
Wheat	0	14 Bu.	14			11	11	3 Bu.		X	

(8) Indicate shipping or collection points Manteo, N. C.

(9) Grain is stored at Overnight cabin, Pea Island

(10) Remarks

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 lbs., Corn (ear)--70 lbs., Wheat--60 lbs., Barley--50 lbs., Rye--55 lbs., Oats--30 lbs., Soy Beans--60 lbs., Millet--50 lbs., Cowpeas--60 lbs., and Mixed--50 lbs. In computing volume of granaries, multiply the cubic contents (cu. ft.) by 0.8 bushels.

(1) List each type of grain separately: Corn, wheat, proso millet, etc. 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 breakdown by varieties of grain listed in Column 6.

(8) Nearest railroad station for shipping and receiving.

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

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