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REFUGE NARRATIVE REPORT
 CAROLINA SANDHILLS NATIONAL WILDLIFE REFUGE
 September to December 1950

GENERAL

Weather Conditions:

Month	Precipitation	Maximum Temperature	Minimum Temperature
SEPTEMBER	2.46	99(14th)	40(26th)
OCTOBER	5.28	90(4th)	44(16th)
NOVEMBER	1.10	92(1st)	13(26th)
DECEMBER	3.06	74(3rd)	15(19th)
Total	11.90	Extremes----- 99(Sept.)-----	13(Dec.)
Normal	12.77		
Rainfall Deficiency	.87		

Temperatures during the first half of the period were generally mild. Early in November readings in the 30's were taken and on November 26 the temperature dropped to 13, the coldest day of the period. The next coldest day was on December 19 when a reading of 15 was recorded. During December readings remained in the 20's and low 30's and a good portion of the month the ground was frozen over. Rain, snow and sleet was experienced during November and December and the weather generally was cold and rough. During September, November and December rainfall was below normal with October above normal but not enough to bring the total for the period to normal.

WATER CONDITIONS:

Although rainfall was some below normal, the spring-fed streams on the refuge kept water levels in our lakes normal.

FIRES:

No fires occurred on the refuge during this period.

WILDLIFEMigratory Birds:POPULATION AND BEHAVIOR:WATERFOWL:

During September and October small flights of both blue and green-winged teal were noted using the lakes and ponds on the refuge for short rest periods. Mixed flights of Blacks, Mallards, Pintails and Gadwall used Martins Pond regularly until late in November when they all disappeared. Small flocks of wood ducks and occasionally blacks and mallards were observed in the beaver ponds and shallow streams.

On the afternoon of October 15th, 14 mature blue geese were seen on a small floating island near the center of Martins Pond. At daybreak the next morning these geese took to the air and were seen no more. Small flights of Canada Geese numbering from 7 to 20 used Martin's Pond for short periods and then moved on. Winter grain was up and corn in the ear scattered over the area, however, none stayed for more than a few days. They probably had a premonition of the weather to come - Martin's Pond has been frozen over solid during portions of the last two months of this period.

MOURNING DOVES:

Our fall population of doves is considerably below normal. From reports received this is true, with a few exceptions, over the whole state. All doves observed were in or near the sesame patches scattered over the area. The largest single flock noted consisted of approximately 250 birds on the old King farm and another of about 150 birds in a sesame patch on truck trail No. 8.

FOOD AND COVER:

Thirty-five acres of cowpeas harvested with a combine leaving about one half of the crop scattered on the ground coupled with large patches of unharvested sesame and our regular acreage in game food patches and strips has provided doves with food in abundance.

Food and cover for our small duck and goose population is adequate. The Martin's Pond browse area was cleared of stumps and enlarged. The steep grade between the top of the hill and the edge of the pond was disced thoroughly, leveled up and planted to fescue and ladino clover to form a permanent sod and prevent erosion. The area beyond this strip was planted to a mixture of rye, wheat and oats.

UPLAND GAME BIRDS:POPULATION AND BEHAVIOR:EASTERN QUAIL WHITE:

There is no doubt that the quail population on the refuge is static. Plans have been formulated for harvesting quail by a public hunt in January.

FOOD AND COVER:

Food is plentiful for quail. Sesame seemed to make the best growth and at the end of December was affording more quail food than any other plant in our food mixture. Cowpeas are good but quail rarely get a chance at them. Buckwheat was tried in the late summer planting and is worthy of inclusion in future food strip mixtures. It matures quickly and makes a fair yield in the better grade of sandy soil. Our early planted strips were damaged by dry weather but the late planted patches more than compensated for this. The lespedezas made good yields and the seeds are now available to the quail. Farming operations by cooperators and a good pine mast crop

further supplemented the diet of the quail. Quail cover is good - too good, I am afraid, to expect a very successful public hunt.

EASTERN WILD TURKEY:

During the summer the turkeys moved from Black Creek up Hemp Branch and turkey signs were seen frequently there for a time. Then they changed their scene of operations north to the vicinity of the bombing range and despite clearing operations there they remain in that vicinity. Reports have been received of two broods of turkeys seen during the early summer north of Rogers Branch. The farmer was of the opinion there were four or five in each brood. Acorns are non-existent this year, although, pine mast, farming operations and food strips supplied plenty of food for turkeys. Chufas included in the late planted food strips did better than expected and signs indicate that turkeys are digging them out and feeding on them.

BIG GAME ANIMALS:

POPULATION AND BEHAVIOR:

WHITE TAILED DEER:

Deer signs are common over most of the refuge. Even on the sand ridges far from food strips or farm land their tracks can be seen. Fawn tracks are much in evidence indicating considerable reproduction.

Two automobile accidents were caused by deer on Highway 85 near the old army barracks. On November 22 a 10-point buck weighing 175 pounds and a Pontiac collided. The deer was killed and the car damaged considerably. Early in December a report was received of a large buck jumping and landing across the hood of another automobile. This deer appeared not to be hurt as he continued on his way after disengaging himself from the automobile. The automobile was not damaged, although it is reported the driver was badly frightened.

FUR ANIMALS, PREDATORS, RODENTS AND OTHER MAMMALS:

Raccoons are abundant over all the refuge. Their tracks can be found along the sand ridges considerable distances from swamps and streams. Well worn paths are much in evidence from the swamps to the food patches containing chufas. Some patches have been completely consumed by raccoons. Plans have been made and approval received for opening part of the refuge for night hunting during January so as to reduce the population.

Fox and Bobcat signs are common over all the refuge. Their numbers are too great for successful turkey and quail management. On December 13 Mr. S. M. Canup, Mammal Control Supervisor arrived at the refuge for the purpose of initiating a trapping program. After a close inspection of the area Mr. Canup stated he had never seen fox sign as thick as it was in some sections of the refuge. From December 14th to the 20th 54 traps were set and from the 20th to January 1 only 24 were out. At times during this period the ground was frozen over the traps and the animals weight would not spring them. During the period December 14th to January 1st.--7 bobcats, 22 gray foxes, 6 red foxes, 2 house cats and 4 raccoons were taken; also 3 cottontail rabbits, 1 flicker and 5 hound dogs. It is surprising that no deer or turkey were caught. The dogs were not injured. They were brought in to headquarters and their owners notified.

Only a few grey squirrels have been seen on the refuge; fox squirrels are common and their population is about normal.

FISH:

All refuge lakes were closed to public fishing on October 31, 1950. Fishing was not so good during the latter part of the open season. Reports were received of only a very few being taken.

REFUGE MAINTENANCE AND DEVELOPMENTMAINTENANCE:

The headquarters water system was converted from gravity to a pressure system. This worked fine until early in December the well became inoperative. Upon pulling the casing we found the bottom working cylinder worn out and were unable to obtain a replacement locally. This cylinder had to be made at the factory. We were without water for about three weeks during which time the fire truck was used to haul and pump water into the old gravity tank.

Timber was harvested for sheathing for maintenance-mans quarters and quarters #2. Both these buildings were completely reroofed during this period. Timber was also cut for constructing a rat proof seed storage house.

The doors to the Blacksmith shop and the service building were completely rebuilt and hung. These are yet to be painted.

The septic tank at quarters #2 was cleaned out, the disposal ^{field} ~~filled~~ extended and a pit dug at the end of the line and filled with cinders.

The carriage underpinning on the sawmill was replaced and routine maintenance and servicing performed on all trucks and tractors.

Early in December the spillway at Martin's Pond crumbled. This appeared to have been caused by seepage from the surrounding hill and leakage through the floor which undermined the spillway floor. The overflow has been diverted through the lower gate to prevent further damage until repairs can be made.

CULTIVATED CROPS:

The Martin's Pond goose browse area was enlarged and stumps pulled from the old clearing. Some of these stumps broke off at the top of the ground. In the area planted to fescue the broken stumps were dug out so that the area of permanent sod could be mowed to control weed growth.

Kobe, sericea and bicolor was harvested during the period. Kobe and sericea made good seed yields but bicolor was somewhat disappointing - stubble mowed, raked and hauled off of two fields - one is yet to be cleaned.

A fire lane was cut around the old army barracks and debris cleared around each building to secure them from fire.

Cooperative farming agreements were made on the bombing range and the original area cleared by the army, which had reverted to scrub oak, has been recleared. Approximately 300 acres will be cleared on the gunnery range and the best land kept under cultivation. The poorer land on both areas will be planted to pine but it is hoped that a considerable acreage on both areas can be kept under cultivation for the benefit of turkeys, deer and quail, especially now that turkeys are using in this vicinity.

PUBLIC RELATIONSRECREATIONAL USES:

The only recreational facilities on the refuge are the picnic areas at Lake Bee, used only infrequently, and fishing in refuge lakes. During the fishing season just closed 982 daily, 33 weekly and 82 season refuge permits were sold.

OFFICIAL REFUGE VISITORS:

Mr. Howard A. Miller, Regional Supervisor	October 19, 1950 November 29 & 30
Mr. Lawrence Givens, Soil Conservationist	October 19, 1950
Mr. Charles Cook, General Engineer	October 25, 1950
Mr. Lester E. Scherer, Administrative Officer	October 25, 1950
Mr. Carl V. Fermanich, Asst. Regional Supervisor	November 10, 1950
Mr. Robert E. Lines, Realty Officer	December 18 & 19 December 20, 1950
Mr. J. A. Martin, Horticulturist, Clemson College	October 20, 1950

Submitted: January 12, 1951

Approved: (sgd) Howard A. Miller
Regional Supervisor

Jan. 16, 1951

Horrie M. Womble
HORRIE M. WOMBLE
Refuge Manager.



Swinging new, metal covered Service building doors



Pump house completed outside. To be insulated and sealed inside.



Section of original food strip planted in April



Food patch recently cleared in a bottom. This patch and the food strip above were planted at the same time with same seed and fertilizer. The only difference is in the soil.



A late planted food strip.



Another late planted game food patch.



A field of bicolor on Park Road.



View of margin of Martin's Pond. Stumps removed and land ready to be planted to fescue and ladino clover.



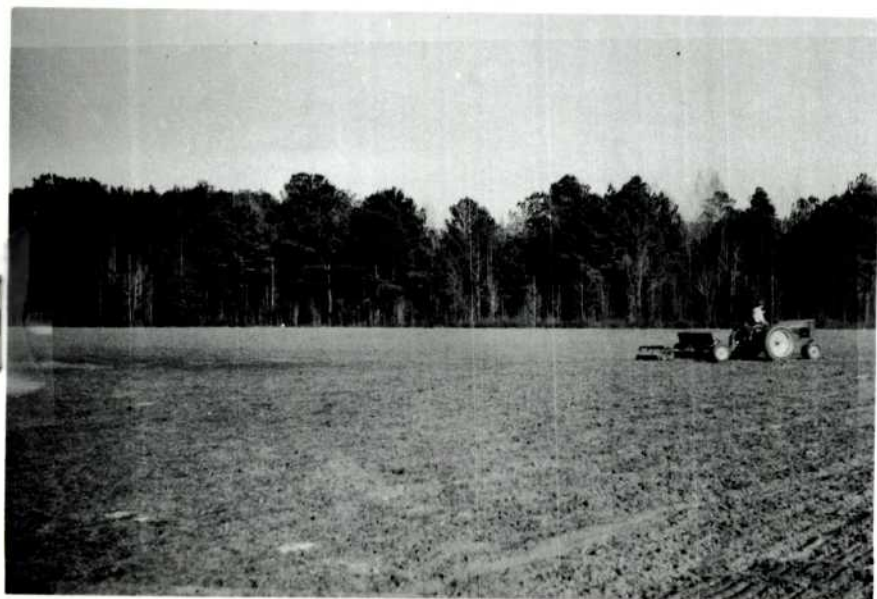
Seeding and fertilizing edge of Martin's Pond



Cooperator combining bicolor in field on Park Road.



Cooperator combining kobe lespedeza in knights bottoms.



Seeding fescue behind kobe harvest in knights bottoms.



The finished job.



Seeding fescue in field east of Black Creek.



View of Martin's Pond spillway showing damage.



Bobcats - these two were caught within 40 yards of each other on the same morning near TT 9 on Hemp Branch.



Grey foxes - a nights catch.



A Bobcat - this weighed 18 3/4 lbs.



Grey fox - the most numerous predator on the refuge.



Roy Rogers resetting a trap. The clump of broom sedge directly in front of Roy is to a fox what a Hydrant is to a city dog.



This red fox came to investigate and regretted it.

(1) Species	(2) First Migrants Seen		(3) Peak Concentration		(4) Last Migrants Seen		(5) Young Produced		(6) Total	
	Common Name	Number	Date	Number	Date	Number	Date	Broods Seen	Estimated Total	Estimated for Period
1. <u>Swans:</u> Whistling swan										
2. <u>Geese:</u> Canada goose	7	10/17	30	10/26						100
Cackling goose										
Brant										
White-fronted goose										
Snow goose										
Blue goose	14	10/14	14	10/14						14
3. <u>Ducks:</u> Mallard	10	10/26	40	11/4						60
Black Duck	15	10/26	30	11/4						50
Gadwall	25	10/16	70	11/6						70
Baldpate										
Pintail	4	10/16	15	11/4						25
Green-winged teal	4	10/14	35	11/6						35
Blue-winged teal										
Cinnamon teal										
Shoveller										
Wood duck	Resident		50	11/29						50
Redhead										
Ring-necked duck										
Canvas-back										
Scaup										
Golden-eye										
Buffle-head										
Ruddy duck										
4. <u>Coot:</u>										

SUMMARIES

Total Production:

Geese _____

Ducks _____

Coots _____

Total waterfowl usage during period 500

Peak waterfowl numbers 700

Areas used by concentrations Lakes and beaver pools on

Hemp Branch and its tributaries

Principal nesting areas this season _____

Reported by *Harrie M. Woble*
Harrie M. Woble

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 filled. 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... Carolina Sandhills Months of September to December 1945

(1) Species Common Name	(2) First Seen		(3) Peak Numbers		(4) Last Seen		(5) Production			(6) Total Estimated Number
	Number	Date	Number	Date	Number	Date	Number Colonies	Total # Nests	Total Young	
I. <u>Water and Marsh Birds:</u>										
Pied-billed Grebe	1	10/15	6	12/5						20
Great Blue Heron	12	Aug.	15	12/20						15
American Egret	30	Aug.	35	11/20						35
II. <u>Shorebirds, Gulls and Terns:</u>										

(over)

(1)	(2)	(3)	(4)	(5)	(6)
III. <u>Doves and Pigeons:</u> Mourning dove White-winged dove	RESIDENT	500	Sept.		1500
IV. <u>Predaceous Birds:</u> Golden eagle Duck hawk Horned owl Magpie Raven Crow	RESIDENT	800	Sept.		1500
Cooper's Hawk	"				25
Eastern Red-tailed Hawk	"				15
Marsh Hawk	1	9/6			10

Reported by *Harold M. Wooley*
Harold M. Wooley

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 Gruiformes)
 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.

UPLAND GAME BIRDS

Refuge Carolina Sandhills

Months of September to December, 1945

(1) Species	(2) Density		(3) Young Produced		(4) Sex Ratio	(5) Removals			(6) Total	(7) Remarks
	Cover types, total acreage of habitat	Acres per Bird	Number broods obs'v'd.	Estimated Total		Hunting	For Re- stocking	For Research		
Common Name					Percentage				Estimated number using Refuge	Pertinent information not specifically requested. List introductions here.
Eastern Bob White	45,000 (All cover types)	15				0	0	0	3000	
Eastern Wild Turkey	45,000 (All cover types)	2,250	0	0					20	

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.

3-1753
Form NR-3
(June 1945)

BIG GAME

Refuge Carolina Sandhills

Calendar Year 1950

(1) Species	(2) Density	(3) Young Produced	(4) Removals				(5) Losses			(6) Introductions	(7) Estimated Total Refuge Population		(8) Sex Ratio	
			Hunting	For Re- stocking	Sold	For Research	Predation	Disease	Winter Loss		Number	Source		At period of Greatest use
Common Name	Cover types, total Acreage of Habitat	Number												
White-tailed Deer	45,000 (All cover types)											175	175	

Remarks:

Reported by Herrie M. Wamble

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 each species 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.

Refuge Carolina SandhillsYear 1949

Botulism

Lead Poisoning or other Disease

Period of outbreak _____

Period of heaviest losses _____

Losses:

	Actual Count	Estimated
(a) Waterfowl	_____	_____
(b) Shorebirds	_____	_____
(c) Other	_____	_____

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

(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 _____

Remarks _____

Kind of disease _____

Species affected _____

Number Affected Species	Actual Count	Estimated
_____	_____	_____
_____	_____	_____
_____	_____	_____

Number Recovered _____

Number lost _____

Source of infection _____

Water conditions _____

Food conditions _____

Remarks No diseased birds or animals observed on the refuge.

Refuge Carolina SandhillsYear 194 ~~50~~

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	
Large Mouth Bass	Common	1120	1200			0		0
Small Mouth Bass	?	None				0		0
Bream (Bluegills, Sunfish & Shellcrackers)	Abundant	1120	3000			0		0
Jack (Eastern Pickerel)	Common	900	400			0		0
warmouth Bass	Common	300	1500			0		0
Catfish (Bullheads)	Common	100	500			0		0

REMARKS:

3-1757
Form NR-7
(April 1946)

PLANTINGS
(Marsh - Aquatic - Upland)

Refuge Carolina Sandhills Year 1945

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
German & brown top millet, L. Koba, L. bicolor, milo, cowpeas, buckwheat, chufas and beans	Field borders & food patches over refuge	25# per acre	125 acres	3500# seed	April to August	75%	Dry weather	
Rye grass, oats, wheat & rye	Patches	90# per acre	40	3600# seed	November	50%	Freeze	

TOTAL ACREAGE PLANTED:

Marsh and aquatic.....
Hedgerows, cover patches.....**25**
Food strips, food patches.....**140**
Forest plantings.....

CULTIVATED CROPS

Refuge Carolina Sandhills Year 1946

Permittee (If farmed by refuge personnel, so indicate)	Permit No.	Unit or Loca- tion	Crops Grown	Avg. Yield per Acre	Permittee's Share		Government's Share or Return				
					Acres	Bu. Har- vested	Harvested		Unharvested		Compensatory Services, or Cash Revenue
							Acres	Bu.	Acres	Bu.	
Joe Bell	C.Sand 8	Tract 738	Corn	6 Bu.	2½	13½	¾	4½			
J. Lacosta Brown	C.Sand 12	Tract 688	Cotton	150#	8	1200#					
			Watermelon	\$15.00	12	\$180.					
			Corn	6 Bu.	2½	13½	¾	4½			
			Gowpeas	1½ Bu.			5	7½			
G. S. Catce	C.Sand 11 & #15838	Tracts 45, 45a, 108, 312, 748	L. Bicolor	60#	15	900#	5	300#			
			L. Sericea	160#	27	4320#	9	1440#			
			Cotton	150#	60	9000#					
			Wheat	7 Bu.	21	147	7	49			
			L. Kobe	171#	21	3591#	7	1197#			
			Rye	4 Bu.	3¾	15	1½	5			
			Crotalaria	200#	8½	1650#	2¾	550#			
			Corn	6 Bu.	3¾	22½	1½	7½			
			Watermelon	\$15.00	7	\$105.00					
Alton Campbell	15839	Tracts 350 & 1013	Game Food	4 Bu.			3.8			15	
			Corn	6 Bu.			3	18			
			Watermelons	\$15.	20	\$300.					

Summary of Crops Grown:	Crop	Acreage	Permittee's Share		Government's Share				Total Revenue \$.....	
			Acres	Bushels	Harvested		Unharvested			
						Acres	Bu.	Acres	Bu.	
.....
.....
.....
.....
.....

CONTINUED

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 indicate the total cash revenue received by the Service.

CULTIVATED CROPS

Refuge Carolina Sandhills Year 1945

Permittee (If farmed by refuge personnel, so indicate)	Permit No.	Unit or Loca- tion	Crops Grown	Avg. Yield per Acre	Permittee's Share		Government's Share or Return				
					Acres	Bu. Har- vested	Harvested		Unharvested		Compensatory Services, or Cash Revenue
							Acres	Bu.	Acres	Bu.	
George Hinson	C.Sand.7	Tract 85	Crotalaria Corn	200# 6 bu.	18	3600	2 2	400# 12			
Ulicus G. Hoffman	C.Sand.6	Tract 457	Oats Cotton Cowpeas Corn	8 Bu. 150# 1 1/2 Bu. 6 Bu.	3-3/4 7 1/2 2 1/2 2-3/4	30 1125# 3-3/4 16 1/2	1 1/2 3 1/2 3/4	10 5 1/2 4 1/2			
R. E. Horton	C.Sand.9	Tract 314	Oats Cowpeas	8 Bu. 1 1/2 Bu.	1 1/2 9-3/4	12 15	1/2 3 1/2	4 4-3/4			
James King	C.Sand.1	Tracts 84, 77, 248, 286, 110, 80, 115	Corn Crotalaria watermelon Cotton	6 Bu. 400# \$15.00 150#	50 20	\$750. 3000#	7	42	30		Soil Improvement

Summary of Crops Grown:	Crop	Acreage	Permittee's Share		Government's Share				Total Revenue \$.....	
			Acres	Bushels	Harvested		Unharvested			
						Acres	Bu.	Acres	Bu.	
.....
.....
.....
.....
.....

CONTINUED

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 indicate the total cash revenue received by the Service.

CULTIVATED CROPS

Refuge Carolina Sandhills Year ~~194~~ 1950.

Permittee (If farmed by refuge personnel, so indicate)	Permit No.	Unit or Loca- tion	Crops Grown	Avg. Yield per Acre	Permittee's Share		Government's Share or Return				Compensatory Services, or Cash Revenue	
					Acres	Bu. Har- vested	Harvested		Unharvested			
							Acres	Bu.	Acres	Bu.		
Ray F. Rogers	C.Sand.5	Tract 125	Corn	6 Bu.	7½	45	2½	15				
			Cotton	100#	13	1950#						
			Watermelons	\$15.	5	\$75.00						
			Garden Pro- duce	\$30.	4½	\$135.00						
			Compeas	1½ Bu.			3	4½				
			Game Food Patches	4 Bu.					3	12		
L. C. Sellers	4-89	Tracts 565, 92a, 18, 17a, & 36	Watermelons	\$15.	102	\$1530					Soil Improvement	
			Crotalaria	200#			10	2000#	90			
			Corn	6 Bu.	50	300	10	60				
			Game Food Patches	4 Bu.					2	8		
			Cotton	150#	50	7500#						
J. Watt Sellers	15840	Tracts 26 & 26a	Watermelons	\$15.	20	\$300.					Soil Improvement	
			Crotalaria						20			
			Game Food	4 Bu.					6	24		
			Corn	6 Bu.	25	150	4	24				

Summary of Crops Grown:	Crop	Acreage	Permittee's Share		Government's Share				Total Revenue \$.....
			Acres	Bushels	Harvested		Unharvested		
					Acres	Bu.	Acres	Bu.	
.....
.....
.....
.....
.....

CONTINUED

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Attached to:
Form NR-8

Refuge: Carolina Sandhills Year 1950

SUMMARY OF CROPS GROWN

CROP	ACREAGE	PERMITTEE'S ACRES	SHARE BUSHELS	HARVESTED ACRES	BUSHELS	GOVERNMENT'S SHARE	
						ACRES	BUSHELS
<u>Corn</u>	<u>193 1/4</u>	<u>149 3/4</u>	<u>898 1/2</u>	<u>43 3/4</u>	<u>262.5</u>	_____	_____
<u>Watermelons</u>	<u>266 1/2</u>	<u>266 1/2</u>	<u>\$2997.50</u>	_____	_____	_____	_____
<u>L. Bicolor</u>	<u>20</u>	<u>15</u>	<u>900 1/2</u>	<u>5</u>	<u>300 1/2</u>	_____	_____
<u>L. Sericea</u>	<u>26</u>	<u>27</u>	<u>4200 1/2</u>	<u>9</u>	<u>1440 1/2</u>	_____	_____
<u>Wheat</u>	<u>21</u>	<u>23 1/2</u>	<u>163</u>	<u>7 3/4</u>	<u>5 1/2</u>	_____	_____
<u>Cotton</u>	<u>160 1/2</u>	<u>160 1/2</u>	<u>2437 1/2</u>	_____	_____	_____	_____
<u>L. Kohe</u>	<u>28</u>	<u>21</u>	<u>3591 1/2</u>	<u>7</u>	<u>1197 1/2</u>	_____	_____
<u>Rye</u>	<u>5</u>	<u>2 3/4</u>	<u>15</u>	<u>1 1/2</u>	<u>5</u>	_____	_____
<u>Crotalaria</u>	<u>211</u>	<u>26 1/2</u>	<u>5250 1/2</u>	<u>24 3/4</u>	<u>1950 1/2</u>	<u>160</u>	_____
<u>Oats</u>	<u>13</u>	<u>9 3/4</u>	<u>78</u>	<u>3 1/2</u>	<u>26</u>	_____	_____
<u>Cowpeas</u>	<u>41 3/4</u>	<u>19 3/4</u>	<u>30</u>	<u>22</u>	<u>33 1/2</u>	_____	_____
<u>Garden Produce</u>	<u>6</u>	<u>6</u>	<u>\$180.00</u>	_____	_____	_____	_____
<u>Game Food</u>	<u>16 1/2</u>	_____	_____	_____	_____	<u>16 1/2</u>	<u>65</u>

Unharvested

REFUGE GRAIN REPORT

Refuge Carolina Sandhills

Months of September thru December 1950

(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.
Cowpeas	0	30 Bu.	30 Bu.	0	0	0	0	30 Bu.	15 Bu.		15 Bu.
L. Sericea	0	1440#	1440#	0	0	0	0	1440#			1440#
L. Bicolor	0	300#	300#	0	0	0	0	300#	50#		250#
Wheat	25	0	25	0	25	0	25	0			
Rye	40	0	40	0	15	0	15	25		25	
Corn	0	260	260	0	0	50	50	210		210	
L. Kebe	0	1200#	1200#	0	0	0	0	1200#	400#		800#
Grotalaria	0	Seed now being harvested - quantities indicated on Form NR-8 estimated									

(8) Indicate shipping or collection points Sandhills National Wildlife Refuge

(9) Grain is stored at Refuge Headquarters

(10) Remarks

NR-8a

REFUGEE 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.

COLLECTIONS AND RECEIPTS OF PLANTING STOCK
(Seeds, rootstocks, trees, shrubs)Refuge Carolina SandhillsYear ~~194~~ 1950.

Species	Collections				Receipts		Total Amounts on Hand	Amount Surplus
	Amount	Date or Period or Collection	Method	Unit Cost	Amount	Source		
<i>Lespedeza Bicolor</i>	300#	November	Combine	Cooperative Farmer			300#	250#
<i>Lespedeza Sericea</i>	1500#	November	Combine	Cooperative Farmer			1500#	1500#

HAYING AND GRAZING

Refuge Carolina Sandhills

Year ~~194~~ 1950

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
<p>NO HAYING OR GRAZING ON THIS REFUGE</p>									

Totals:

Acreage grazed _____

Animal use months _____

Total income Grazing _____

Acreage cut for hay _____

Tons of hay cut _____

Total income Haying _____

TIMBER REMOVAL

Refuge Carolina Sandhills Year ~~194~~ **1950**

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
<p>TIMBER RIGHTS UNDER LEASE TO STATE</p>								

Total acreage cut over..... Total income.....

No. of units removed B. F. Method of slash disposal.....
 Cords.....
 Ties.....

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REFUGE NARRATIVE REPORT
 CAROLINA SANDHILLS NATIONAL WILDLIFE REFUGE
 MAY TO AUGUST

GENERAL

WEATHER CONDITIONS:

Month	Precipitation	Maximum Temperature	Minimum Temperature
May	2.11	95	49
June	3.76	103	52
July	9.00	97	62
August	<u>2.41</u>	99	57
Total	17.28		
Normal	<u>20.65</u>	Extremes 103 (June)	49 (May)
Deficiency	2.97		

Rainfall during the period was considerably below normal for the months of May and June, a critical period for our early planted annual food strips. Between the middle and last of June it appeared that these food strips would be a total loss, however, late in June and regularly in July we had an abundance of rain and production suffered no more than 25%.

Quail had a very successful nesting season as evidenced by the numerous large broods observed.

The major refuge activity during this period was building repairs and good progress was made.

The days were hot but the nights were cool and pleasant.

WATER CONDITIONS:

Lake elevations remained fairly constant during the period, fluctuating only one tenth of a foot during the constant rains in July.

FIRES:

Three fires occurred in May burning a total of 6 acres and three in June burning 91 acres; one occurred in August burning approximately two acres. All of these fires were in the State Forest - none on the refuge.

Migratory Birds:Populations and Behavior:WATERFOWL:

Several pairs of wood ducks were observed, however, no young were noted during the period. Nesting sites are practically inaccessible but there is no reason to believe that their family endeavours were less successful than the quail.

MOURNING DOVES:

Doves have been noted in good numbers over the entire refuge and especially in the vicinity of the larger cultivated fields. They used the shattered and unharvested sections of the rye fields extensively. Flocking appeared to start late in July and from 500 to 1000 were observed in the rye fields until the middle of August when their numbers began diminishing and during the latter part of the period no large flocks were seen.

FOOD AND COVER:

There appears to be no lack of either for both ducks and doves.

UPLAND GAME BIRDS:Populations and Behavior:EASTERN BOB WHITE:

During May and June the weather was dry and the nesting season was evidently very successful. Of the many broods observed only one had less than fifteen and this was a brood of eight observed early in July which were fully feathered and able to fly short distances.

Some areas on the refuge have an abundance of food and cover is ideal yet no Bob white are in evidence. These areas are some distance from water but I have heard that Bob white can subsist on the morning-dew does anybody know just what the water requirement of the Bob white is?

EASTERN WILD TURKEY:

No turkey signs could be found in the center of the refuge until the latter part of the period. During June and July one of our cooperative farmers near Black Creek reported extensive use of his fields by turkey and that they were decimating his early planted peas. Another farmer reported seeing a turkey hen with a brood of 6 to 8 using his small fish pond on a prong of Alligator branch, however, upon investigating, no turkey signs could be located in this vicinity.

On August 7 a hen was seen on a food strip near the intersection of Truck Trail 9 and Park Road. A few days later a hen and a gobbler were seen on two different occasions further along Park Road near Highway 85.

FOOD AND COVER:

Early in July additional food strips and patches were planted in the more strategic locations to compensate for the loss of the earlier planted patches due to dry weather. Buckwheat and chufas were added to the regular food strip mixture both of which appeared promising at the end of the period. By the end of August some mature seed of buckwheat could be found with plenty of fruit showing between the bloom and mature stage. Large tubers could be found on the chufas also and even the planted late the plants are making good growth and as they are one of the preferred turkey foods we propose to plant a great deal more in the future.

Oats, wheat and rye were also added to the mixture planted in July. The wheat sprouted immediately and came up but the rye and oats will lie dormant until cool weather and will furnish all the green browse needed by turkey during the winter. Bicolor and sericia seem not to be affected by the drought, both have made good growth and are in full bloom now. Over most of the area cover appears to be adequate for turkeys. Some areas are too dense for Bob white. The judicious use of fire will improve it for Bob white without impairing it for turkey.

BIG GAME ANIMALS:

Populations and Behavior:

WHITE-TAILED DEER:

Deer signs have been seen over a large part of the refuge and especially in the Hemp Branch section. In the early planted food strips the deer ate most of the cow peas and in the late planted strips they browsed on the foliage of sesame and buckwheat as well as cow peas.

Tiny fawn tracks have been noted indicating that our deer herd is on the increase.

FUR ANIMALS, PREDATORS, RODENTS, OTHER MAMMALS:

Raccoons: Signs are common along the branches and streams of the refuge. A considerable amount of Coon activity was noted in the late planted food strips containing chufas. Shortly after the chufas came up they started scratching under them for the tuber but they did no serious damage. The Coons fondness for chufas will help get the turkeys started feeding on them, and once they get started they are well able to dig them out for themselves.

Otter: Some Otter sign are in evidence mostly along Hemp Branch and in Black Creek.

Bob Cat: Signs are fairly common and this predator seems to be on the increase.

Fox: Signs are noted only infrequently.

Beaver: Beaver are very much in evidence. A weekly visit to the smaller lakes and ponds is a must to clear out the plugged spillways. You'd think they'd become discouraged when once a week they have to start from scratch again. Possibly they figure we will tire first. At any rate they have demonstrated an unflagging spirit and a devotion to duty that is anything but commendable from our viewpoint.

FISH:

Indications are that fish had a good spawning season. Although the weather was dry and hot in May and June lake elevations remained fairly constant with the water clear and the fish were pretty well able to take care of themselves.

REFUGE MAINTENANCE AND DEVELOPMENT

MAINTENANCE:

Our main activity during this period was repairs to refuge buildings. Asbestos shingles were placed on the end of the service building, completing this operation. Shingles were also placed on the smoke house and wood shed at Quarters No. 1 and white trim, two coats, put on all buildings covered with asbestos shingles. The Pump House for the water system was completely rebuilt to house the pressure tank. The tower for the old gravity tank is rotten and unsafe, necessitating the change to a pressure system. All installations are in place but materials were not on hand at the end of the period to switch to the automatic pressure system.

The sliding doors to the service building are rotten and warped and new

lighter doors to be covered with light sheet metal are now being constructed and should be in place sometime in September. Rotten window sash and casing in the Service Building was replaced and green trim and caulking is yet to be done.

All outside overhead wiring in the work area was replaced with underground cable.

The refuge fire truck was dismantled and a new flatbed and tank installed; this job is complete except for painting.

The clutch, steering and governor on the Minneapolis-Moline farm tractor was completely overhauled. This tractor is in fair shape considering the fact that it is thirteen years old. New rear tires were installed during the period and the front tires will have to be replaced in the near future. The blade for the mower for this tractor was also rebuilt. Routine maintenance and servicing was performed on all other equipment.

Approximately five thousand feet of timber was harvested and sawed into bridge timbers and sign lumber.

CULTIVATED CROPS:

Game food patch plantings were made in May. Except for some dry weather damage they will yield good seed crops. Another series of patches was planted in July when it appeared that some of the earlier planted ones would be a total loss.

The food patch situation is being improved to a great extent by abandoning the sites originally cleared too high up the ridges in the extremely poor sand and new sites are being cleared in the bottoms and close in along the streams where the land is more fertile. We should have a bulldozer for the next couple of years to expedite this program.

Cooperative farmers crops are fair generally. Heavy rains during July increased weevil infestation in cotton in spite of poisoning and yields are

disappointing.

Plantings of bicolor and seresia look good. Bicolor is in full bloom now and a good seed crop is expected.

PUBLIC FISHING:

Good catches of bream and bass were reported during May, however, during the hot, dry weather of June the water was too clear and catches dropped off considerably.

Martin's Pond, Lake Bee, Lake Twelve, Lake Sixteen, Lake Seventeen and Twin Lakes have been open to the public for fishing since April 1.

REFUGE VISITORS:

Mr. Howard A. Miller, Regional Refuge Supervisor, May 10, July 25, July 26, 1950

Mr. James W. McPhail, Superintendent Fish Cultural Station, June 6, 1950.
Orangeburg, S. C.

Mr. J. M. Geddings, Communications Engineer, S. C. Comm. of Forestry, May 2, 1950.
Columbia, S. C.

Mr. J. A. Martin, Horticulture Dept., Clemson College, May 3, 1950.

Dr. E. E. Brown, Professor of Biology, Davidson College, June 16, 1950.

ITEMS OF INTEREST:

During the past fiscal year sales of timber products by the S. C. State Forestry Commission from all of the Sandhills area amounted to \$7710.27. It is our opinion that more than half of this amount came from the refuge.

PHOTOGRAPHS:

We regret that only a few photographs are available for this report. Five are attached.

Submitted: September 11, 1950

Horrie H. Womble
Horrie H. Womble,
Refuge Manager.

Approved: _____

(1) Species Common Name	(2) First Migrants Seen		(3) Peak Concentration		(4) Last Migrants Seen		(5) Young Produced		(6) Total
	Number	Date	Number	Date	Number	Date	Broods Seen	Estimated Total	Estimated for Period
1. <u>Swans:</u> Whistling swan									
2. <u>Geese:</u> Canada goose Cackling goose Brant _____ White-fronted goose Snow goose Blue goose									
3. <u>Ducks:</u> Mallard Black Duck Gadwall Baldpate Pintail Green-winged teal Blue-winged teal Cinnamon teal Shoveller Wood duck Redhead Ring-necked duck Canvas-back Scaup Golden-eye Buffle-head Ruddy duck									
							0	75	250
4. <u>Coot:</u> 3-1750 (June 1949)									

RESIDENT

SUMMARIES

Total Production:

Geese _____

Ducks _____

Coots _____

Total waterfowl usage during period 250

Peak waterfowl numbers 250

Areas used by concentrations _____

Principal nesting areas this season Hemp Branch, Rogers Branch, Skipper Creek and Black Creek.

Reported by Horrie M. Womble

HORRIE M. WOMBLE

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 the 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 Carolina Sandhills Refuge Months of May to August 1945

(1) Species	(2) First Seen		(3) Peak Numbers		(4) Last Seen		(5) Production			(6) Total
	Number	Date	Number	Date	Number	Date	Number Colonies	Total # Nests	Total Young	Estimated Number
I. <u>Water and Marsh Birds:</u>										
Pied-billed Grebe										8
Great Blue Heron			12	Aug.						25
American Egret			30	Aug.						50
II. <u>Shorebirds, Gulls and Terns:</u>										

(over)

(1)	(2)	(3)	(4)	(5)	(6)
III. <u>Doves and Pigeons</u> : Mourning dove White-winged dove	RESIDENT	3500			3500
IV. <u>Predaceous Birds</u> : Golden eagle Duck hawk Horned owl Magpie Raven Crow	RESIDENT	1500			1500

Reported by.....

Horrie M. Womble
 HORRIE M. WOMBLE

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 Gruiformes)
 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 Carolina Sandhills Refuge Months of May to August, 194 50

(1) Species	(2) Density		(3) Young Produced		(4) Sex Ratio	(5) Removals			(6) Total	(7) Remarks
	Cover types, total acreage of habitat	Acres per Bird	Number broods obs'v'd.	Estimated Total		Hunting	For Re- stocking	For Research		
Eastern Bob White	45,000 All cover types	15	8	1500					3000	Pertinent information not specifically requested. List introductions here.
Mourning Dove	45,000 All cover types	11.25	15	1500					4000	

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.

REFUGE GRAIN REPORT

Refuge Carolina Sandhills Refuge

Months of May thru August 1950

(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
Cowpeas	25	0	25	0	25	0	25	0		
L. Sericea	400 Lbs.	0	400 Lbs.	0	400 Lbs.	0	400 Lbs.	0		
L. Bicolor	50	0	50	0	50	0	50	0 ✓		
Wheat	0	50	50	25	0	0	25	25 ✓	25	
Rye	0	75	75	35	0	0	35	40 ✓	40	

(8) Indicate shipping or collection points McBee, South Carolina

(9) Grain is stored at Refuge Headquarters

(10) Remarks 25 Bu. of wheat transferred to Santee Refuge; 35 Bu. of Rye transferred to Mattamuskeet Refuge AUTH: Mr. Miller's Memorandum dated August 2, 1950.

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.



Combining wheat in Knights Bottoms by cooperative Farmer using self-propelled combine.



Pickup hay baler in operation removing wheat straw from land seeded to lespedeza.



Side delivery rake in operation removing weeds from serocia field after mowing.



Pump House being constructed by refuge personnel.



View of Pump House from other end.

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REFUGE NARRATIVE REPORT
 CAROLINA SANDHILLS NATIONAL WILDLIFE REFUGE
 JANUARY TO APRIL 1950

GENERAL

WEATHER CONDITIONS:

<u>Month</u>	<u>Precipitation</u>	<u>Maximum Temperature</u>	<u>Average Maximum</u>	<u>Minimum Temperature</u>	<u>Average Minimum</u>	<u>Mean</u>
January	1.71	87(10th)	68.26	25(8th)	43.05	55.56
February	1.36	80(1st)	62.17	22(27th)	37.02	49.59
March	3.10	84(27th)	62.18	23(3rd)	40.09	51.15
April	<u>1.58</u>	91(25th)	72.22	26(7th&14th)	46.13	59.15
Total	7.75					
Normal	14.05		Extremes 91(April)		22(February)	
Deficiency	6.30					

January temperatures were the highest ever recorded in the State. The rainfall was about 50% of normal.

February temperatures were also the highest ever recorded for the State and the rainfall only about 50% of normal.

March temperatures and precipitation were about normal.

April opened normal but 2 heavy freezes on the 7th and 14th was disastrous for local orchardist and farmers. These 2 freezes killed 90% of the peach crop in the State and about 75% of the Sandhills crop. The rainfall for April was 60% below normal and created the highest fire hazard we have ever had at Sandhills.

To summarize the weather for the period: too much heat and not enough water.

WATER CONDITIONS:

No floods were recorded for the period. In spite of the dry weather our spring fed refuge streams held water levels about normal.

FIRES:

5 uncontrolled fires burned a total of 2426 acres of refuge lands this period. One fire caused by a careless smoker burned 40 acres. One set by Army Engineers to control burn a part of the old Bombing Range got out of control and burned 257 acres. One carelessly set by an ex-inmate of the insane asylum burned 2129 acres. This fire started near our western boundary at 3:15 and crossed State Highway 85 at 5:30. Variable tornadic winds forbade direct attack on the head, approach nearer than 500 feet was unsafe, on several occasions crown fires threw live fire 2/10 mile. After 24 hours of continuous fighting the fire was under control, a trace of rain fell then and 2 hours later the fire was out. The entire period was hazardous fire weather.

WILDLIFEMigratory Birds:Populations and Behavior:WATERFOWL:

Wood Duck population was normal for the period. Very few Mallards and Blacks were observed and a sprinkling of Baldpates, Pintails and Ring-Necked Ducks used the beaver pools and lakes on the refuge. There was no noticeable spring migration flights of any species of ducks. Canada Geese used the Martin's Pond area until the first week in March but no geese have been observed since.

MOURNING DOVES:

Doves were common over most of the refuge the entire period and observations indicate that the refuge population is increasing. Nesting began in March.

FOOD AND COVER:

Both feed and cover for doves and ducks have been adequate. Corn was spread periodically on the Martin's Pond area for Canada Geese. Ducks were observed feeding with the geese on several occasions.

UPLAND GAME BIRDS:Population and Behavior:EASTERN BOB WHITE:

No change in population over last year was apparent. The State Game Department's effort to live trap quail for stocking purposes came to naught. Coveys spotted for trapping would not stay put. This could have been caused by the scarcity of natural feed, all natural feed was abnormally scarce this winter. As a result of the freak winter a quail nest was found on February 3 with 3 eggs in it, on February 20 it contained 19 eggs.

EASTERN WILD TURKEY:

The following is a summary of turkey stocking for this period: January 15, 3 toms released; February 3, 6 hens released; February 9, 2 toms released; February 19, 7 hens released and 4 toms were released. This totals 9 toms and 13 hens released this period. The same period last year 8 hens and 4 toms were released in the same general area. This brings our total number of birds to 21 hens and 13 toms released on the refuge, all stock came from Bulls Island. The turkeys are using an area approximately 4 miles long and about 1 mile wide. This area is from Highway 85 to Black Creek down the Hemp Branch watershed. No nesting has been observed but solitary hens are frequent along TF-9 and Park Road. On April 16 Patrolman Gardner and I observed 2 toms and 3 hens feeding in a

Lespedeza field between Park Road and Hemp Branch.

FOOD AND COVER:

Natural food for both quail and turkeys has been unusually scarce. Our feed patch plantings of cowpeas, mile, brown top and German millets made good yields but deer took all of the peas on maturity and mourning doves got most of the millets. Browse patches of abuzzi rye planted last period were extensively used by turkeys this period. In many instances turkeys kept the rye browsed level with the ground, examination of droppings collected indicated that the birds fed almost exclusively on green matter. Scratch feed was spread periodically on the Hemp Branch area to hold the birds in this area. At the end of the period most of the birds were still in this general area.

BIG GAME ANIMALS:

Population and Behavior:

WHITE-TAILED DEER:

Deer have become common over most of the refuge. If the screw worm got any Sandhill deer last summer it was a small percentage. On April 8 Maintenance-Man Rogers saw 3 fawns at the intersection of TT-9 and Park Road. These fawns were in one group and spotted, from his description of size and color they were less than a month old.

FOOD AND COVER:

Both feed and cover are adequate.

FUR ANIMALS, PREDATORS, RODENTS, OTHER MAMMALS:

Beaver activity indicates that our Sandhill population is still composed of 100% Eager Beavers. We have set up a regular Beaver Patrol to keep the water control structures open on all of the small lakes. Patrolman Gardner read an article in some magazine (Field & Stream no doubt) that said a sure cure for this was to drive 2 stakes at the water entrance and nail a cross bar to these about 2 or 3 feet above the water, to the cross bar attach a piece of burlap soaked in crank case oil. This Beaver Boggy does not work at Sandhills, it only aids the devils in tying in their obstruction. But in spite of this nuisance they sure have created some ideal duck and fish habitat. Raccoon signs are common over the entire refuge but no alarming uptrend has been observed. Bob Cat and Fox signs do not indicate any increase over last year.

FISH:

Although this period had the least rainfall of any like period to date our streams and lakes carried their normal amounts of water. This was due to hundreds of small beaver dikes and sandhill springs. The abnormal weather of the period, hot winter and freezing spring, delayed fish spawning. Large mouth bass did some spawning in April but not on a scale comparable with last April. No brook spawning had been observed at the end of the period.

REFUGE MAINTENANCE AND DEVELOPMENTMAINTENANCE:

The following is a summary of refuge maintenance for this period: 20,000 ft. of timber was harvested and sawed for bridge timber and lumber for buildings; 15 small wood culverts were replaced; 25 miles

of truck trail was machined; the Blacksmith shop and oil house was covered with asbestos siding; the main Service building was covered with siding except for 1 end, underground cable must be laid before this can be finished; routine maintenance was performed on all trucks, tractors, sawmill, farm and fireline equipment.

CULTIVATED CROPS:

All plantings have been delayed by the unusual weather. Serious damage to the local peach crop, which is a major crop in the Sandhills, was done by the 2 freezes that occurred on the 7th and 14th of April. Small grain crops are disappointing, too warm and dry. Annual Lespedeza that had germinated were killed by the April freezes. Our bicoler and sericea patches were killed back by the frost but they have put out new growth, no damage is anticipated. Our food patch planting program has been delayed by the heavy building repair program now in progress.

PUBLIC RELATIONS

PUBLIC FISHING:


Seven of our artificial lakes were opened to public fishing on April 1. The catches were not as good as last year due to the inclement weather. Large fish is still the order of the day at Sandhills though, the largest bass to date is 14 lbs. 5 ozs. which is some bass in any lake. The Sandhills fishing is becoming better advertised, which does not suit all of the local boys, but the refuge has gotten some favorable publicity from it. Our lakes will remain open through October with no break in the Season this year. So May should produce some record bass and bream catches.

PHOTOGRAPES: Due to the division of the manager's time between Santee and Sandhills very few photographs were secured for this period. However 5 prints are attached.

OFFICIAL REFUGE VISITORS:

- Mr. Lawrence S. Givens, Regional Soil Conservationist, Jan. 10 - 11 & 12th
March 27 & 28th
- Mr. Paul W. Sturm, Refuge Manager, Cape Romain, January 19th
- Mr. Richard W. Dittman, Regional Engineer, February 7
- Mr. Howard A. Miller, Regional Refuge Supervisor, February 10
- Mr. William T. Davis, Reg. Supervisor Law Enforcement, February 10
- Mr. Walter A. Gresh, Assistant Regional Director, February 10
- Mr. J. A. Martin, Horticulture Dept. Clemson College, March 3

Submitted: May 7, 1950


Ernest F. Holland

Approved: _____

(1) Species	(2) First Migrants Seen		(3) Peak Concentration		(4) Last Migrants Seen		(5) Young Produced		(6) Total
	Number	Date	Number	Date	Number	Date	Broods Seen	Estimated Total	Estimated for Period
1. <u>Swans:</u> Whistling swan									
2. <u>Geese:</u> Canada goose Cackling goose Brant _____ White-fronted goose Snow goose Blue goose			130	1/5	17	3/9			250
3. <u>Ducks:</u> Mallard Black Duck Gadwall Baldpate Pintail Green-winged teal Blue-winged teal Cinnamon teal Shoveller Wood duck Redhead Ring-necked duck Canvas-back Scaup Golden-eye Buffle-head Ruddy duck			75 35	2/20 2/20	11 5	4/9 4/9			50 25
			15	2/20	15	2/20			15
		Resident	200	2/20					300
4. <u>Coot:</u> 3-1750 (June 1949)									

SUMMARIES

Total Production:

Geese _____

Ducks _____

Coots _____

Total waterfowl usage during period 630

Peak waterfowl numbers 630

Areas used by concentrations Artificial lakes and

beaver ponds.

Principal nesting areas this season _____

Reported by Ernest F. Holland

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 Carolina Sandhills

Months of January

to April

XIX 1950

(1) Species Common Name	(2) First Seen		(3) Peak Numbers		(4) Last Seen		(5) Production			(6) Total Estimated Number
	Number	Date	Number	Date	Number	Date	Number Colonies	Total # Nests	Total Young	
I. <u>Water and Marsh Birds:</u>										
Pied-billed Grebe			16	2/20	2	4/29				25
Great Blue Heron			4	1/21	1	4/29				6
American Egret	4	4/29								
II. <u>Shorebirds, Gulls and Terns:</u>										
Spotted Sandpiper			15	4/29	15	4/29				25
Solitary Sandpiper			12	4/29	12	4/29				25

(over)

(1)	(2)	(3)	(4)	(5)	(5)	(6)
III. <u>Doves and Pigeons</u> : Mourning dove White-winged dove	Resident	3500	4/29			3500
IV. <u>Predaceous Birds</u> : Golden eagle Duck hawk Horned owl Magpie Raven Crow Cooper's Hawk Eastern Red tailed Hawk Osprey	Resident = = =					1000 25 12 4

Reported by... **Ernest F. Holland**

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 Gruiformes)
 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 Carolina Sandhills

Months of January to April, 1940

(1) Species	(2) Density		(3) Young Produced		(4) Sex Ratio	(5) Removals			(6) Total	(7) Remarks
	Cover types, total acreage of habitat	Acres per Bird	Number broods obs'v'd.	Estimated Total		Hunting	For Re- stocking	For Research		
Eastern Bob White	45,000 all cover types	15							3000	Pertinent information not specifically requested. List introductions here.
Mourning Dove	45,000 all cover types	12.85							3500	
Eastern Wild Turkey	20,000 all cover types				180% hens				30	

INSTRUCTIONS

Form NR-2 - UPLAND GAME BIRDS.*

- (1) SPECIES: Use correct common name.
- (2) DENSITY: Applies particularly to those species considered in removal programs (public hunts, etc.). Detailed data may be omitted for species occurring in limited numbers. Density to be expressed in acres per animal by cover types. This information is to be prefaced by a statement from the refuge manager as to the number of acres in each cover type found on the refuge; once submitted, this information need not be repeated except as significant changes occur in the area of cover types. Cover types should be detailed enough to furnish the desired information but not so much as to obscure the general picture. Examples: spruce swamp, upland hardwoods, reverting agriculture land, bottomland hardwoods, short grass prairie, etc. Standard type symbols listed in Wildlife Management Series No. 7 should be used where possible. Figures submitted should be based on actual observations and counts on representative sample areas. Survey method used and size of sample area or areas should be indicated under Remarks.
- (3) YOUNG PRODUCED: Estimated number of young produced, based upon observations and actual counts in representative breeding habitat.
- (4) SEX RATIO: This column applies primarily to wild turkey, pheasants, etc. Include data on other species if available.
- (5) REMOVALS: Indicate total number in each category removed during the report period.
- (6) TOTAL: Estimated total number using the refuge during the report period. This may include resident birds plus those migrating into the refuge during certain seasons.
- (7) REMARKS: Indicate method used to determine population and area covered in survey. Also include other pertinent information not specifically requested.

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

3-1754
Form NR-4
(June 1945)

SMALL MAMMALS

Refuge Carolina Sandhills

Year ending April 30, 1950

(1) Species Common Name	(2) Density		(3) Removals					(4) Disposition of Furs					(5) Total Popula- tion	
	Cover Types & Total Acreage of Habitat	Acres Per Animal	Hunting	Fur Harvest	Predator Control *	For Re- stocking	For Re- search	Share Trapping			Total Refuge Furs Shipped	Furs Donated		Furs Destroyed
								Permit Number	Trappers Share	Refuge share				
Raccoon	19,460	40												500
Beaver	6,474	32												200
Mink	6,474	86												75
Otter	6,474	324												20
Mask Rat	6,474	185												35
Opposum	46,000	155												300
Skunk	40,000	100												400
Gray Squirrel	12,963	10												1300
Fox Squirrel	40,000	35												1150

* List removals by Predator Animal Hunter

REMARKS:

Reported by Ernest F. Holland, Refuge Manager

INSTRUCTIONS

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

- (1) SPECIES: Use correct common name. Example: Striped skunk, spotted skunk, short-tailed weasel, gray squirrel, fox squirrel, white-tailed jackrabbit, etc. (Accepted common names in current use are found in the "Field Book of North American Mammals" by H. E. Anthony and the "Manual of the Vertebrate Animals of the Northeastern United States" by David Starr Jordan.)
- (2) DENSITY: Applies particularly to those species considered in removal programs. Detailed data may be omitted for species occurring in limited numbers. Density to be expressed in acres per animal by cover types. This information is to be prefaced by a statement from the refuge manager as to the number of acres in each cover type found on the refuge; once submitted, this information need not be repeated except as significant changes occur in the area of cover types. Cover types should be detailed enough to furnish the desired information but not so much as to obscure the general picture. Examples: spruce swamp, upland hardwoods, reverting agriculture land, bottom land hardwoods, short grass prairie, etc. Standard type symbols listed in Wildlife Management Series No. 7 should be used where possible. Figures submitted should be based on actual observations and counts on representative sample areas. Survey method used and size of sample area or areas should be indicated under Remarks.
- (3) REMOVALS: Indicate the total number under each category removed since April 30 of the previous year, including any taken on the refuge by Service Predatory Animal Hunter. Also show any removals not falling under headings 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, including furs taken by Service personnel. Total number of pelts of each species destroyed because of unprimeness or damaged condition, and furs donated to institutions or other agencies should be shown in the column provided.
- (5) TOTAL POPULATION: Estimated total population of each species reported on as of April 30.
- REMARKS: Indicate inventory method(s) used, size of sample area(s), introductions, and any other pertinent information not specifically requested.

REFUGE GRAIN REPORT

Refuge Carolina Sandhills

Months of January thru April 194 50

(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.
Corn	50	0	50			50	50	0			
Cow Peas	25	0	25					25	25		
L. Sericea	400	0	400					400	400		
L. bicolor	350	0	350	200	100		300	50	50		

(8) Indicate shipping or collection points.....

(9) Grain is stored at..... Refuge Headquarters.....

(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.



Here is one that weighed $9\frac{1}{2}$ caught on Opening Day, Junior went along for the ride.



Not a very good picture but an excellent fish. This bass weighed $11\frac{1}{2}$, caught in Martin's Pond April 3.

(9)



Preparing doors and windows of service building for covering entire building with asbestos-cement siding.



Wild Turkey Hen leaving food patch near Truck Trail 9.