

BOMBAY HOOK

Narrative Reports

January - December 1949

ROUTING SLIP

BRANCH OF WILDLIFE REFUGES

DATE: Jan. 23, 1950

MR. SALYER

MR. KROMMES

MR. DUMONT

MISS BAUM

SECTION OF HABITAT IMPROVEMENT:

~~MR. GRIFFITH~~

~~DR. BOURN~~

MR. KUBICHEK

SECTION OF OPERATIONS:

~~MR. BALL~~

~~MR. REGAN~~

~~DR. MORLEY~~

SECTION OF LAND MANAGEMENT:

~~MR. ACKERMEYER~~

SECTION OF STRUCTURES:

MR. TAYLOR

MR. JOHNSTON

STENOGRAPHERS:

NARRATIVE REPORT

REFUGE: BOMBAY HOOK

PERIOD: September - December, 1949

Bombay Hook National Wildlife Refuge
Quarterly Narrative Report
September, October, November, December
1949

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NARRATIVE REPORT
Bombay Hook National Wildlife Refuge
September, October, November, December
1949

1. General

A. Weather Conditions.

		Snowfall	Percipitation	Max.Temp.	Min. Temp.
September	--		4.45	88	41
October	--		4.46	86	31
November	--		2.56	74	22
December	--		1.87	67	16
Extremes				88	16

Precipitation and temperatures approached the normal during the period.

The above data were supplied by the Meteorological Station of the Delaware State Highway Department, located at Dover. A carbon copy of the report forwarded to the Weather Bureau of the Commerce Department is sent to the Refuge each month.

B. Water Conditions.

Water conditions on the tidal marsh were normal. The level of Raymond's Pool raised during the period to about three feet above sea level. From November 23rd until the end of the period the pool froze over during cold periods except where kept open by the ducks and geese.

At the beginning of the period the stop logs, which had been out during the summer, were placed in Finis Pools' water control structures and the level of the Pool soon rose to about four feet above mean sea level.

C. Fires.

No fires occurred during the period.

II. Wildlife

A. Migratory Birds

1. Population and behavior. The first fall duck migrants to reach the Refuge arrived on August 21st. Thirty shovelers and eight pintails arrived on that date. These were followed by a hundred green-wing teal and a few baldpates about a week later. During September the duck population of Raymond's Pool gradually built up until approximately

2500 ducks could be seen daily on the Pool. Gadwalls were much more numerous than last year and made up a larger percentage of the total ducks on the Pool.

Blue-wing teal were noticeably scarcer this Fall than last but all other species of puddle ducks were present in greater numbers than in 1948.

Gadwall, green-winged teal and black ducks showed the greatest increase.

There was a great increase in the number of Canada geese frequenting the Delaware marshes this year. Two hundred of the geese settled down for the Fall with our twenty decoy geese on Raymond's Pool. They foraged on our neighboring farmers' machine picked corn fields and in their wheat fields in the morning and evening, and also frequently fed on winter wheat in Refuge field 3 near Headquarters. During mid-day they rested on Raymond's Pool.

During the night of October 29 most of the ducks which had spent September and October on Raymond's Pool left for the South, and many of those that frequented the Refuge marshes left at the same time. This was unfortunate for Delaware duck hunters whose season began November 4th. However, in spite of the migration, the hunters enjoyed much better success this year than last. Their bag consisted chiefly of green-winged teal and black ducks, as it always does in this region. Many of the hunters were able to bag their four bird limit, as compared to the relatively few who achieved that goal in 1948. A few hunters managed to bag Canada geese from the Raymond's Pool flock while the birds were going to their feeding grounds on nearby farms.

About November 17th, just two days before the end of the first half of the duck season, there was a large influx of northern ducks including bald pates, shovelers, green-winged teal, black ducks and pintails.

Wood ducks were noticeably less numerous on the Refuge this Fall and most of those seen were on Raymond's Pool. Six were seen almost daily during October on Finis Pool.

Shore birds were about as abundant as they were last year. Greater and lesser yellow legs, dowitchers and red-backed sand pipers were the most commonly seen.

On September 23 an avocet appeared on Raymond's Pool. The bird stayed on the Pool for several weeks and a number of bird watchers from neighboring states visited the Refuge to see it.

Five Wilson's snipe were seen on a reverting field in the Dutch Neck area of the Refuge during October.

2. Food and Cover. Food conditions in Raymond's Pool were fair but not as good as last year. Sago pond weed widgeon grass were absent from large areas of the Pool's bottom. This may have been partly due to the low water levels which prevailed last summer.

Duck weed was unusually abundant in Finis swamp this Fall.

not first
record
REG

B. Upland Game Birds.

1. Population and Behavior. There was an apparent slight increase in the pheasant population this year in both White Hall Neck and Dutch Neck.

Bobwhite quail were as abundant as last year and seemed more numerous in Dutch Neck than elsewhere.

Mourning Doves were more numerous than last year. Several hundred fed on wheat left unharvested in Field 1 and roosted at night in the osage-orange hedgerow in Field 3.

2. Food and Cover. Food and cover for upland birds was excellent. Many waste soybeans remained in fields in both parts of the Refuge. Corn and wheat was available in Fields 5, 3 and 1 and rye was left standing in part of Field 3 and 3a. Pheasants were observed feeding in the rye fields.

Four acres of buckwheat were left standing in the Field in the Dutch Neck area. A covey of twelve bobwhite fed there in October and November.

The Lespedeza bicolor stand in field 14 produced fairly well, but as yet no quail have been observed utilizing the seed.

C. Big Game

1. Population and Behavior. With the advent of small game season in Delaware many deer sought the protection of the Refuge. The population during the period was estimated at about one hundred.

2. Food and Cover. Food and cover for white-tailed deer, the only big game animal present on the Refuge, were adequate during the period. Deer frequently were seen feeding on corn left in Field 5 and on waste soybeans and green winter wheat in other fields.

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

Raccoons, otter, opossum, skunk, rabbit and woodchuck remain at the same population level as last period.

A muskrat house count made from the air on November 3rd and 4th showed the population to be about as high as last year. It was noticeable that houses were placed closer to areas of open water on the marsh this year, presumably because of the drought which occurred last summer and which dried up some of the salt marsh. The muskrat population was estimated at about five thousand.

Gray squirrels remain relatively scarce.

E. Predaceous Birds

Bald eagles were common on the Refuge through October and November. Rough-legged hawks appeared in late November. During the first week of December a snowy owl was seen near the Refuge.

Winter flocks of fish crows and common crows numbering thousands

fed on harvested soybean and corn fields on the Refuge and vicinity in November and December. As last year, one white crow was seen in the flock.

Two great horned owls, two barred owls and several barn owls are present.

III. Refuge Development and Maintenance

A. Physical Development

About forty-five acres of reverting land in Dutch Neck was disked several times during October. One of the fields worked up well enough so that a mixture of wheat, oats and rye could be sown in it. The others require additional disking and grubbing out some young trees and sapplings which are too large to be disked out.

Two boundary signs along the north edge of the Refuge on the salt marsh were replaced.

The boat "Striker", FWS 117, was painted in October.

A new fan was installed on International Pickup 117524.

Raymond's Pool Dike, Finis causeway and Finis road were repaired by filling in holes with gravel.

B. Plantings

1. Upland Herbaceous Plants. Many of the Lespedeza bicolor seedlings which were planted in May 1949 in Field 14 set seed this Fall.

2. Aquatics and Marsh Plants. Two hundred thirty-six pounds of wild rice seed, shipped to us from Rice Lake Refuge, Minnesota, were planted in the west end of Raymond's Pool and in several fresh water ponds in Dutch Neck on November 2nd. The bottom was prepared by raking, the seed was broadcast and the bottom was again raked.

3. Cultivated Crops. During the period corn was harvested from Fields 6 and 7 and 5. The Refuge received 250 bushels from Fields 6 and 7 and left its share from Field 5 in the field.

Soybeans were harvested from Fields 4, 15, 10 and 8 during the period. Much waste grain was left in the fields and was fed upon by pheasants, quail, deer and raccoons.

Winter wheat drilled on Field 3 in October as a winter cover and green manure crop was grazed nearly every day in late November and December by about two hundred Canada geese. This was somewhat surprising since no fertilizer was applied to the field and the wheat did not produce as well as other wheat field in this vicinity.

Ten acres of rye left unharvested in part of Field 3 and 3a were utilized by pheasants during the period but not by waterfowl.

Two and one-half acres of buckwheat left unharvested in Dutch Neck were utilized by a covey of quail. On one occasion a group of black ducks were flushed from the edge of the buckwheat.

Four acres of buckwheat, unharvested in September, yielded twenty-five bushels of seed which will be used next Spring for planting.

C. Collection.

None.

D. Receipts of Seed or Nursery Stock.

Two hundred thirty-six pounds of wild rice were received from Rice Lake Refuge on November 1st. Shipped in metal drums in which ice had been placed, the rice stood shipment without apparent injury.

IV. Economic Use

A. Grazing.

None.

B. Haying.

None.

C. Fur Harvest.

Trapping Permits T-4309, T-4310, T-4308 and T-4307 were issued primarily for harvesting muskrat, though they also included taking of mink, otter, raccoon, opossum and skunk.

Trapping began December 1st.

D. Timber removal.

None.

E. Other Uses.

None.

V. Public Relations

A. Recreational Uses.

Recreational use of the Refuge was confined to visits of amateur ornithologists on birding trips.

B. Refuge Visitors.

One hundred and ninety people visited the Refuge during the Quarter, including the following groups: The Maryland Ornithological Club, The Washington Audubon Society, The Junior Zoological Society of Philadelphia,

A Wildlife Management class from Penn State College, a Wildlife Management class from Delaware University, a Fourth Grade class from Wilmington and the Dover Boy Scout Troup.

C. Refuge Participation.

The Refuge Manager and the Refuge Maintenance Man were guests of the Delaware Federation of Sportsmens Clubs at their annual convention in Rehoboth in September.

Submitted by:

Henry S. Bush
acting Refuge manager

Ward D. Tanner,
Refuge Manager

January 3, 1950

APPROVED:

Arthur J. Moore

Regional Refuge Supervisor

1-9-50

Date

Regional Director

Date

3-1750

Form NR-1

(Nov. 1945)

WATERFOWL

Refuge Bombay Hook Months of Sept. to Dec. 31 1949

(1) Species Common Name	(2) First Seen Number Date		(3) Peak Concentration Number Date		(4) Last Seen Number Date		(5) Young Produced Broods Seen Estimated Total		(6) Total Estimated for Period
	Number	Date	Number	Date	Number	Date	Broods Seen	Estimated Total	Estimated for Period
I. <u>Swans:</u>									
Whistling swan	300	10/26	300	10/26	1	11/30			300
II. <u>Geese:</u>									
Canada goose	16	10/1	300	11/28					500
Cackling goose									
Brant									
White-fronted goose									
Snow goose	1	10/28	3	11/2					3
Blue goose	3	10/28	3	10/28	3	11/2			3
III. <u>Ducks:</u>									
Mallard	breeding		400	12/3					450
Black duck	breeding		5000	11/28					20000
Gadwall	breeding		1000	11/3					4000
Baldpate	15	8/28	1500	11/2					3500
Pintail	8	8/19	2000	11/1					3500
Green-winged teal	150	8/27	4000	10/28					15000
Blue-winged teal	breeding		800	9/15					1800
Cinnamon teal									
Wood duck	breeding		25	9/3	6	10/28			35
Red head									
Ring-necked duck									
Canvas-back									
Scaup	1	10/26	6	11/4					8
Golden-eye									
Buffle-head									
Ruddy duck	here all summer		30	10/15					150
Shoveler	30	8/19	600	11/20					
Hooded Merganser	1	10/26	50	12/4					250
American Merganser	2	10/28	25	12/4					300
IV. <u>Coot:</u>	breeding		500	10/15					1000

(over)

SUMMARIES

Total Production:

Geese.....

Total waterfowl usage during period.....50,000

Ducks.....

Peak waterfowl numbers.....14,000

Coots.....

Areas used by concentrations.....Raymonds Pool, Duck Creek,

Bear Swamp marsh near Boat Gut, Hawkey Branch and

marsh ponds near Georges Island.

Principal nesting areas this season.....

Reported by

Henry S. Brush
acting Refuge manager

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 Bombay HookMonths of Sept. to Dec. 31, 1949

(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. <u>Water and Marsh Birds:</u>										
Pied-billed Grebe			200	9/15						200
Great Blue Heron			85	9/4						85
American Egret			500	10/5						500
Snowy Egret			25	9/1	1	9/6				25
Little blue heron			400	9/1	20	10/5				400
Black Crowned Night heron			200	9/1						300
American Bittern			8	9/29						10
Clapper Rail			1000	9/1						1000
Florida Gallinule			200	9/1	1	10/30				200
II. <u>Shorebirds, Gulls and Terns:</u>										
Killdeer			30	9/23						35
Wilson Snipe			5	10/15						5
Greater Yellowlegs			700	10/25						1200
Lesser Yellowlegs			500	10/15						1000
Lowitcher			200	9/13						300
Herring Gull			600	10/10						1000

(over)

(1)	(2)	(3)		(4)		(5)		(6)
III. <u>Doves and Pigeons</u> :								
Mourning dove	breeding	250	10/29					350
White-winged dove								
IV. <u>Predaceous Birds</u> :								
Golden eagle								
Duck hawk		2	10/26					4
Horned owl		2	12/1					4
Magpie								
Raven								
Crow		15000	11/30					20000
Bald Eagle		6	12/2					20
Rough legged hawk		8	12/1					8
				Reported by <u>Henry S. Bush</u> <i>acting Refuge manager</i>				

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 Bombay HookMonths of Sept.

to

Dec. 31, 1949

(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'd.	Estimated Total	Percentage	Hunting	For Re- stocking	For Research	Estimated number using Refuge	Pertinent information not specifically requested. List introductions here.
Ring-neck Pheasant	Upland & Marsh edge, 400 acres	31			60% male	0	0	0	13	
Bob-white quail	Upland & Marsh edge, 400 acres	5	2	12	50% male	0	0	0	80	

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

Bombay HookCalendar Year 1949

(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	As of Dec. 31	
Common Name	Cover types, total Acreage of Habitat	Number												
White-tail deer	500 acres upland fields and timber and marsh edge	15										100	100	60% female

Remarks:

Reported by Henry S. Bush acting Refuge wgt.

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.

3-1755
Form NR-5
(April 1946)

DISEASE

Refuge Hamlet Hook Year 1949

Botulism

Lead Poisoning or other Disease

Period of outbreak.....			Kind of disease <u>Undetermined; caecum impacted and ruptured, liver spotted.</u>		
Period of heaviest losses.....			Species affected <u>Muskrat</u>		
Losses:	Actual Count	Estimated	Number Affected	Actual Count	Estimated
(a) Waterfowl	.....	.....	Species	<u>1</u>	.....
(b) Shorebirds	.....	.....	.....	.....	.....
(c) Other	.....	.....	.....	.....	.....
Number Hospitalized	No. Recovered	% Recovered	Number Recovered.....		
(a) Waterfowl	.....	.....	Number lost.....	<u>1</u>	
(b) Shorebirds	.....	.....	Source of infection.....	<u>?</u>	
(c) Other	.....	.....	Water conditions.....	<u>Good</u>	
Areas affected (location and approximate acreage).....					
Water conditions (average depth of water in sickness areas, reflooding of exposed flats, etc.).....			Food conditions.....		
			<u>Fair</u>		
Conditions of vegetation and invertebrate life.....			Remarks.....		
Remarks.....			<u>One female black muskrat found floating dead on stream in marsh between Green Creek and Mahon river Nov. 16. The animal was very thin. The body was sent to a State pathologist in Newark, Del. Results not known as yet.</u>		

(April 1946)

FISH

Refuge.....~~Bombay~~ Hook.....Year 1949.....

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	
None of importance on the Refuge								

REMARKS:

3-1757

Form NR-7

(April 1946)

PLANTINGS
(Marsh - Aquatic - Upland)

Refuge.....Bombay Hook Refuge.....Year 1949...

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
<i>Zizania aquatica</i>	Raymond's Pool and fresh water ponds in Dutch Neck	?	one acre	236 lbs. of seed	11/2/49	?		
Mixed small grains- wheat, oats, and rye	Field D in Dutch Neck	?	8 acres	26 bu. seed	Last two weeks of Oct. 1949	Fair	old seed- high percentage not viable.	

TOTAL ACREAGE PLANTED:

Marsh and aquatic.....one acre.....
Hedgerows, cover patches.....
Food strips, food patches.....8 acres.....
Forest plantings.....

CULTIVATED CROPS

Refuge Bombay Hook 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				Compensatory Services, or Cash Revenue
					Acres	Bu. Har- vested	Harvested		Unharvested		
							Acres	Bu.	Acres	Bu.	
Edward Evans	14611	Field 8	soybeans		8						\$30.00
		11	barley		19						
		12	wheat		.5						
		15	soybeans		15						
Edward Evans	14610	Field 6	corn }	36	1000		250				Drilled and harvested buckwheat on 6 1/2 acres for the Gov't.
		7	corn }								
		East half									
Arthur Carrow, Jr.	14370	Field 1	wheat		23				8		Plowed,
		2	wheat		8				0		disked and
		3	wheat		15				5		planted
		4	soybeans		14			0	0		wheat for
		5	corn		11				4		the Refuge
		5a	wheat	20		64		16			on 20 acres of Field 3.
											Plowed, disked and planted

Summary of Crops Grown:

Crop	Acreage	Permittee's Share		Government's Share		Total Revenue
		Acres	Bushels	Harvested Acres	Unharvested Acres	
Corn	50		1000			
Wheat	78	46	64	16	18	
Barley	19	19				
Buckwheat	6 1/2	0	0		4	25
						\$ 30.00

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, brome grass, 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.

REFUGE GRAIN REPORT

Refuge Bonhay Hook

Months of Sept. thru Dec. 31, 1942.

(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	440	250 (ear)	690 (ear)	0	0	90 (ear)	90 (ear)	600 (ear)	0	250	350
Wheat	63	0	63	0	8	30	38	25	25	0	0
Rye	48	0	48	0	8	40	48	0	0	0	0
Oats	50	0	50	0	10	40	50	0	0	0	0
Soybeans	82	0	82	20	0	32	52	30	30	0	0
Buckwheat	0	25	25	0	0	0	0	25	25	0	0

(8) Indicate shipping or collection points Clayton, Delaware -- Pennsylvania Railroad

(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.

3-1759
Form NR-9

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

Refuge.....~~Bombay Hook~~ Refuge..... Year 194⁹.....

Species	Collections				Receipts		Total Amounts on Hand	Amount Surplus
	Amount	Date or Period or Collection	Method	Unit Cost	Amount	Source		
<i>Zizania aquatica</i>					236 lbs.	Rice Lake Refuge Minnesota	0	0

HAYING AND GRAZING

Refuge.....Bombay Hook.....Year 194⁹.....

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
N ONE									

Totals:

Acreage grazed.....	Animal use months.....	Total income Grazing.....
Acreage cut for hay.....	Tons of hay cut.....	Total income Haying.....

TIMBER REMOVAL

Refuge Bombay Hook Year 1949

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
NONE								

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

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

Cords.....

Ties.....

