Copy transmitted to CO

By Region 4 [illegible] 1 7/2
(Name) (Date)

Remarks:

# Pea Island National Wildlife Refuge
## Narrative Report
## Period May 1-August 31, 1943

### I. GENERAL

A. Weather Conditions. There being no weather station now located on the refuge we are dependent on Mrs. Rosa Drinkwater's Cooperative Observer's Meteorological record, Manteo, N. C. for weather data. There is a variation in the rainfall on the refuge and at Manteo. For this period I believe it has been much lighter on the refuge then it has been here.

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

| | Precip. | Max. temp. | Min. temp. |
|---|---|---|---|
| May 1943 | 2.50 in. | 90 degrees | 48 degrees |
| June " | 1.78 " | 97 " | 63 " |
| July " | 5.13 " | 97 " | 62 " |
| Aug. " | 1.04 " | 92 " | 60 " |
| Total | 10485 " | | |

Corresponding period 1942

| | | | |
|---|---|---|---|
| May 1942 | .79 " | 83 " | 53 " |
| June " | 2.15 " | 91 " | 65.6 " |
| July " | 4.60 " | 93 " | 65 " |
| Aug. " | 3.15 " | 98 " | 68 " |
| Total | 10.69 " | | |

B. As a result of the light rains water conditions in the fresh water impoundments have been very poor. Both ponds went dry during the early part of June, with the water levels dropping so low that the only water to be found in the ponds was in the barrow pits. In the No. 1 pond this became very stagnant and very little wildlife continued to use it. In the No. 2 pond the water was low but unlike the No. 1 pond the water did not become stagnant. I think this was due to the continuous borrow extending along the north, west and south sides of the pond which permitted the water to circulate freely as a result of currents caused by the winds. Both ponds were dry until almost the middle of August. At the end of this period each was covered with 1-3 inches of water and conditions were slightly improved.

### II. WILDLIFE

A. Migratory Birds. The wildlife has been comprised largely of shore birds, gulls, terns and herons together with a small number of waterfowl.

1. Population and Behavior. Wading birds show very little change in numbers as compared with last year. At the black-crowned night heron rookery there were approximately 40 nests. This compares favorably with other years.

Waterfowl. Most of the waterfowl had migrated from the refuge during the preceeding period. There were a small number of Canada geese, black duck, gadwall and blue-winged teal which continued to use the refuge through the summer. I think most of the geese had been affected with parasitism and were too weak to make the north migration with the other geese. At the end of the period most of them appeared to have recovered. The ducks which remained here were nesters. Due to the No. 2 impoundment being flooded I think black duck nests were increased 100 % as compared with last year. Gadwall and blue-winged teal remained about the same as in other years.

Marsh Birds. These birds have not been very abundant. This is no doubt a result of the scarcity of water in the fresh water ponds during the summer months.

Shorebirds. During the spring flight several species viz; red-backed and semipalmated sandpipers and ruddy turnstones were here in numbers comparing favorably with other years. Although a good many birds have been coming through during the late summer flight, no species have shown up in great numbers. Willet and curlew appear to be scarcer than in former years.

Gulls and Terns. Gulls and terns have occupied their customary nesting areas and have been here in about their usual numbers. Nesting royal terns have greatly decreased since 1941 at which time 1000 eggs were estimated. In 1942 no eggs were seen, this year 21 eggs were seen.

2. Food. Conditions in the fresh water impoundments are the same as last year. The ponds have been dry and the submerged aquatic plants could not grow. Instead the ponds are covered with purslane, Portulaca oleraca. The marshes along the ponds have produced a good growth of Scippus robustus and some Scirpus americanus. Through the tidal marshes there is a fair amount of Spartina alterniflora and Scirpus americanus. Ground beans, Strophostyles helvola and Strophostyles umbelata are also well established on most of the area. There is an abundant crop of these beans this year. In the open waters of the sound the shoals are well covered with widgeon grass, Rupia maratima and indications point favorably to a better growth of this plant than we have had in several years and that it will be the main food for the birds during the coming season. In the area of the refuge eelgrass, Zostera marina is almost nonexistant and conditions as to this plant do not seem to have improved since last season.

## III. REFUGE MAINTENANCE AND DEVELOPMENT

Maintenance of the area and equipment has been taken care of entirely by the refuge personnel. In addition to the maintenance of the two trucks and motor boat the remainder of the time has been spent principally on control of pest plants, viz; cutting cattails and sandspurs. Cattails have been cut on approximately 40 acres in the No. 2 impoundment. This work has been greatly hindered by the swarms of mosquitoes and flies with which the refuge has been infested.

## IV. VISITORS

Officials visiting the refuge during this period were Messrs: A. C. Elmer, R. O. Gustafson, Richard Griffith and Arthur Miller. Other people visiting the refuge were: Ref. John Grey, Editor of the "Chat", Harry T. Davis, Director of the N. C. State Museum, Commander Ernest Davis and James Sydnor.

September 10, 1943

Sam A. Wacker
Refuge Mgr.

Form NR-1

# MIGRATORY BIRDS

Refuge Pea Island Months of May 1 to August 31, 1943

1612

| (1) Species | (2) First Observed | | (3) Became Common | (4) Peak Concentration | | (5) Last Observed | | (6) Young Produced | | | (7) Total |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Common Name | Number | Date | Date | Number | Date | Number | Date | No. Broods Obsvd. | Avg. Size | Esti-mated Total | Number Using Refuge |
| Loon, Common | | common through May and seen occasionally during June | | | | | | | | | |
| Grebe, Pied-billed | 2 | 8/13/43 | | | | | | | | | |
| Cormorant | | noted occasionally through entire period | | | | | | | | | |
| Heron, Great Blue | | | | resident | | | | | | | |
| Egret, American | | | | 50 | 8/12/43 | | | | | | |
| Egret, Snowy | | | 5/21/43 | 60 | 8/12/43 | | | | | | |
| Heron, Louisiana | | | 6/5/43 | 15/ | 8/12/43 | | | | | | |
| Heron, Green | | | | 10 | 8/12/43 | | | | | | |
| Heron, Black-crowned | | resident | | | | | | | | 80 | |
| Heron, Yellow-crowned | 1 | 8/12/43 | | | | | | | | | |
| Bittern, Least | 1 | 5/21/43 | 6/21/43 | | | | | | | | |
| Geese, Canada | | | | 35 on refuge entire period | | | | | | | |
| Duck, Black | | | | | | | | 25 | 7 | 180 | |
| Gadwall | | | | | | | | 8 | 11 | 60 | |
| Pintail | 4 | 8/24/43 | | | | | | | | | |
| Teal, Blue-winged | | | | | | | | 4 | 8 | 20 | |
| Merganser, Redbreasted | | seen occasionally through entire period | | | | | | | | | |
| Hawk, Marsh | 1 | 7/24/43 | | | | | | | | | |
| Osprey | | common through entire period | | | | | | | | | |
| Gallinile, Florida | 1 | 5/4/43 | | remained scarce | | | | | | | |
| Coot | | | | | | 50 | 5/4/43 | | | | |
| Plover, piping | 1 | 8/5/43 | | scarce | | | | | | | |
| Plover, Semipalmated | 1 | 8/5/43 | | | 8/13/43 | | | | | | |

REMARKS: (Pertinent information not specifically requested)

# INSTRUCTIONS

Form NR-1 - MIGRATORY BIRDS (Include species in families Gaviidae through Strigidae; also doves and woodcocks)*

In case a resident form occurs, such as mottled duck on the Gulf Coast, use only the columns that apply.

(1) SPECIES: Use correct common names as found in the A.O.U. Check List, 1931 Edition, and list in A.O.U. order. General terms are to be avoided, such as "scaup", "teal", etc.; use "green-winged teal" or "lesser scaup".

(2) FIRST OBSERVED: The first refuge record for the species during spring migration, fall migration, wintering, or summering, and the number observed. In the case of resident species this column may be disregarded.

(3) BECAME COMMON: The date the species became common on the refuge.

(4) PEAK CONCENTRATION: The greatest number of the species present on any one date or limited interval of time.

(5) LAST OBSERVED: The last refuge record for the species during the spring or fall migration, wintering, or summering, and the numbers observed exclusive of obvious cripples or non-migrants.

(6) YOUNG PRODUCED: Estimated number of young produced based upon 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 are to be omitted.

(7) 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 manner in which birds come through; i.e., in waves or all at once. On refuges representing the terminus of the flight lane, the figures would probably be the same in many cases.

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

Form NR-1

# MIGRATORY BIRDS

Refuge Pea Island Months of May 1 to August 31, 1943

1612

| (1) Species | (2) First Observed | | (3) Became Common | (4) Peak Concentration | | (5) Last Observed | | (6) Young Produced | | | (7) Total |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Common Name | Number | Date | Date | Number | Date | Number | Date | No. Broods Obsvd. | Avg. Size | Esti-mated Total | Number Using Refuge |
| Plover, Wilson | | | | scarce, remained through entire period | | | | | | | |
| Plover, Black-bellied | | | | | 5/13/43 | entire period | | | | | |
| Turnstone, Ruddy | 1 | 5/4/43 | 5/23/43 | | | | | | | | |
| Curlew, Hudsonian | | | | scarce | | | | | | | |
| Sandpiper, Spotted | | | | remained through entire period | | | | | | | |
| Willet | | | | scarce | | | | | | | |
| Yellow-legs, Greater | | | | fairly common entire period | | | | | | | |
| Yellow-legs, Lesser | | | | scarce | | | | | | | |
| Knot | | | | scarce | | | | | | | |
| Sandpiper, Pectoral | 1 | 8/5/43 | | scarce | | | | | | | |
| Sandpiper, Least | | | | | 5/21/43 | fairly abundant | | | | | |
| Sandpiper, Red-backed | | | | abundant through May | | | | | | | |
| Dowitcher | | | | scarce | | | | | | | |
| Sandpiper, Semipalmated | | | | abundant | | | | | | | |
| Sandpiper, Western | | | 8/12/43 | | | | | | | | |
| Godwit, Marbled | 8 | 8/12/43 | | 19 | 8/13/43 | | | | | | |
| Sanderling | | | | | 8/12/43 | fairly abundant | | | | | |
| Avocet | 1 | 8/18/43 | | | | | | | | | |
| Gull, Herring | | | | scarce through this period | | | | | | | |
| Gull, Laughing | | | | | | | | | | 1000 | |
| Tern, Gull-billed | 1 | 5/4/43 | | | | | | | | 40 | |
| Tern, Common | | | | | | | | | | 60 | |

REMARKS: (Pertinent information not specifically requested)

# INSTRUCTIONS

Form NR-1 - MIGRATORY BIRDS (Include species in families Gaviidae through Strigidae; also doves and woodcocks)*

In case a resident form occurs, such as mottled duck on the Gulf Coast, use only the columns that apply.

(1) SPECIES: Use correct common names as found in the A.O.U. Check List, 1931 Edition, and list in A.O.U. order. General terms are to be avoided, such as "scaup", "teal", etc.; use "green-winged teal" or "lesser scaup".

(2) FIRST OBSERVED: The first refuge record for the species during spring migration, fall migration, wintering, or summering, and the number observed. In the case of resident species this column may be disregarded.

(3) BECAME COMMON: The date the species became common on the refuge.

(4) PEAK CONCENTRATION: The greatest number of the species present on any one date or limited interval of time.

(5) LAST OBSERVED: The last refuge record for the species during the spring or fall migration, wintering, or summering, and the numbers observed exclusive of obvious cripples or non-migrants.

(6) YOUNG PRODUCED: Estimated number of young produced based upon 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 are to be omitted.

(7) 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 manner in which birds come through; i.e., in waves or all at once. On refuges representing the terminus of the flight lane, the figures would probably be the same in many cases.

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

Form NR-1

# MIGRATORY BIRDS

Refuge Pea Island Months of May 1 to August 31, 1943

1612

| (1) Species | (2) First Observed | | (3) Became Common | (4) Peak Concentration | | (5) Last Observed | | (6) Young Produced | | | (7) Total |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Common Name | Number | Date | Date | Number | Date | Number | Date | No. Broods Obsvd. | Avg. Size | Esti-mated Total | Number Using Refuge |
| Tern, Least<br>Tern, Royal<br>Tern, Black<br>Skimmer, Black | 3 | 6/1/43 | 6/20/43<br>6/25/43 | abundant | | | | | | 400<br>15<br><br>200 | |

REMARKS: (Pertinent information not specifically requested)

## INSTRUCTIONS

Form NR-1 - MIGRATORY BIRDS (Include species in families Gaviidae through Strigidae; also doves and woodcocks)*

In case a resident form occurs, such as mottled duck on the Gulf Coast, use only the columns that apply.

(1) SPECIES: Use correct common names as found in the A.O.U. Check List, 1931 Edition, and list in A.O.U. order. General terms are to be avoided, such as "scaup", "teal", etc.; use "green-winged teal" or "lesser scaup".

(2) FIRST OBSERVED: The first refuge record for the species during spring migration, fall migration, wintering, or summering, and the number observed. In the case of resident species this column may be disregarded.

(3) BECAME COMMON: The date the species became common on the refuge.

(4) PEAK CONCENTRATION: The greatest number of the species present on any one date or limited interval of time.

(5) LAST OBSERVED: The last refuge record for the species during the spring or fall migration, wintering, or summering, and the numbers observed exclusive of obvious cripples or non-migrants.

(6) YOUNG PRODUCED: Estimated number of young produced based upon 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 are to be omitted.

(7) 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 manner in which birds come through; i.e., in waves or all at once. On refuges representing the terminus of the flight lane, the figures would probably be the same in many cases.

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

# RECORD OF GAUGE READINGS

Refuge: Pea Island

Heights Relative to Sea Level:

Gauge Location north end of the No.1 impoundment

0.0 on Gauge mean low water

Month May Year 1943

Observer Sam A. Walker

| | Gauge Reading | Precipitation Inches | TEMP Max. | TEMP Min. |
|---|---|---|---|---|
| 1 | 4.08 | | 62 | 58 |
| 2 | | | 71 | 48 |
| 3 | 3.68 | | 88 | 59 |
| 4 | | | 77 | 54 |
| 5 | | | 76 | 53 |
| 6 | | | 80 | 60 |
| 7 | | | 84 | 60 |
| 8 | | | 90 | 67 |
| 9 | | | 82 | 52 |
| 10 | | | 84 | 58 |
| 11 | 3.64 | .64 | 81 | 76 |
| 12 | | | 77 | 65 |
| 13 | | | 74 | 63 |
| 14 | | | 68 | 56 |
| 15 | | | 64 | 54 |
| 16 | | | 82 | 58 |
| 17 | | | 85 | 67 |
| 18 | | | 84 | 65 |
| 19 | 3.62 | | 71 | 70 |
| 20 | | | 90 | 68 |
| 21 | | 1.24 | 85 | 67 |
| 22 | | | 74 | 61 |
| 23 | | | 65 | 56 |
| 24 | | | 69 | 59 |
| 25 | 3.60 | | 81 | 64 |
| 26 | | .62 | 82 | 68 |
| 27 | | | 76 | 70 |
| 28 | | | 74 | 62 |
| 29 | | | 78 | 60 |
| 30 | | | 90 | 67 |
| 31 | 3.58 | | 90 | 71 |
| Totals | Max.Dev. .60 | Total 2.60 | Max. 90 | Min. 48 |

# RECORD OF GAUGE READINGS

Refuge: Pea Island

Heights Relative to Sea Level:

Gauge Location ;north end of No. 1 impoundment

0.0 on Gauge mean low water

Month ; June Year 1943

Observer Sam A. walker

| | Gauge Reading | Precipitation Inches | Temp. Max. | Temp. Min. |
|---|---|---|---|---|
| 1 | 3.58 | | 93 | 70 |
| 2 | | | 97 | 73 |
| 3 | | | 95 | 72 |
| 4 | | | 96 | 75 |
| 5 | 3.38 | | 95 | 76 |
| 6 | | | 92 | 72 |
| 7 | | | 91 | 70 |
| 8 | | .53 | 76 | 66 |
| 9 | | .46 | 79 | 65 |
| 10 | | | 76 | 64 |
| 11 | | | 81 | 65 |
| 12 | | | 84 | 65 |
| 13 | | | 85 | 67 |
| 14 | | | 85 | 70 |
| 15 | | | 85 | 66 |
| 16 | | | 88 | 71 |
| 17 | | | 96 | 73 |
| 18 | | | 92 | 74 |
| 19 | | | 88 | 75 |
| 20 | | | 92 | 74 |
| 21 | | | 94 | 72 |
| 22 | | | 93 | 72 |
| 23 | | | 92 | 74 |
| 24 | | | 94 | 73 |
| 25 | | | 93 | 73 |
| 26 | | | 92 | 71 |
| 27 | | | 93 | 72 |
| 28 | | | 92 | 70 |
| 29 | | .12 | 84 | 70 |
| 30 | | .62 | 75 | 68 |
| 31 | | | | |
| Totals | Max.Dev. .20 | Total 1.78 | Max. 97 | Min. 65 |

# RECORD OF GAUGE READINGS

Refuge: Pea Island

Heights Relative to Sea Level:

Gauge Location: north end of No. 1 impoundment

0.0 on Gauge mean low water

Month: July Year 1945

Observer: Sam A. Walker

| | Gauge Reading | Precipitation Inches | TEMP. Max. | Min. |
|---|---|---|---|---|
| 1 | | | 71 | 62 |
| 2 | | | 79 | 65 |
| 3 | | | 81 | 67 |
| 4 | | | 84 | 66 |
| 5 | | | 90 | 71 |
| 6 | | .81 | 84 | 66 |
| 7 | | .36 | 83 | 72 |
| 8 | | .42 | 84 | 68 |
| 9 | | .16 | 87 | 67 |
| 10 | | .14 | 86 | 70 |
| 11 | | .10 | 89 | 70 |
| 12 | | | 88 | 73 |
| 13 | | .22 | 91 | 74 |
| 14 | | | 92 | 75 |
| 15 | | | 90 | 73 |
| 16 | | .52 | 87 | 42 |
| 17 | | | 94 | 75 |
| 18 | | .38 | 92 | 77 |
| 19 | | | 89 | 75 |
| 20 | | | 87 | 73 |
| 21 | | | 92 | 78 |
| 22 | | | 93 | 71 |
| 23 | | | 84 | 70 |
| 24 | | | 85 | 68 |
| 25 | | .08 | 90 | 70 |
| 26 | | | 87 | 74 |
| 27 | | 1.22 | 86 | 71 |
| 28 | | | 87 | 74 |
| 29 | | .28 | 92 | 70 |
| 30 | | .34 | 90 | 66 |
| 31 | | | 97 | 70 |
| | Max.Dew. | Total | Max. | Min. |
| Totals | | 5.15 | 97 | 62 |

# RECORD OF GAUGE READINGS

Refuge: Pea Island

Heights Relative to Sea Levels:

Gauge Location: north end of No.1 impoundment

0.0 on Gauge mean low water

Month: August 1943

Observer: Sam A. Walker

| | | Gauge Reading | | Precipitation Inches | TEMP Max. | TEMP Min. |
|---|---|---|---|---|---|---|
| 1 | | | | | 90 | 70 |
| 2 | | | | | 91 | 72 |
| 3 | | | | | 89 | 70 |
| 4 | | | | | 92 | 71 |
| 5 | | | | | 88 | 76 |
| 6 | | | | .48 | 82 | 74 |
| 7 | | | | | 87 | 67 |
| 8 | | | | | 90 | 70 |
| 9 | | | | | 91 | 72 |
| 10 | | 3.42 | | | 88 | 71 |
| 11 | | | | | 84 | 70 |
| 12 | | | | | 87 | 92 |
| 13 | | | | | 91 | 75 |
| 14 | | | | | 94 | 76 |
| 15 | | | | | 82 | 74 |
| 16 | | | | | 91 | 76 |
| 17 | | | | | 92 | 76 |
| 18 | | | | | 77 | 69 |
| 19 | | 3.48 | | | 7892 | 67 |
| 20 | | | | | 79 | 66 |
| 21 | | | | | 85 | 70 |
| 22 | | | | | 81 | 67 |
| 23 | | | | | 82 | 60 |
| 24 | | | | | 85 | 68 |
| 25 | | | | | 84 | 69 |
| 26 | | | | | 91 | 74 |
| 27 | | | | | 86 | 70 |
| 28 | | 3.48 | | .12 | 7-5 | 64 |
| 29 | | | | .44 | 76 | 66 |
| 30 | | | | | 85 | 69 |
| 31 | | | | | 87 | 65 |
| | | Max. Dev. | | Total | Max. | Min. |
| Totals | | .06 | | 1.04 | 92 | 60 |