

ROUTING SLIP

BRANCH OF WILDLIFE REFUGES

DATE: 194

MR. SALYER _____

MR. KRUMMES _____

MR. DUMONT _____

MISS BAUM _____

SECTION OF HABITAT IMPROVEMENT:

MR. GRIFFITH _____

DR. BOURN _____

MISS COOK _____

SECTION OF OPERATIONS:

MR. BAIL _____

MR. REGAN _____

SECTION OF LAND MANAGEMENT:

MR. KENT _____

MR. ACKERKNECHT _____

SECTION OF STRUCTURES:

MR. TAYLOR _____

MR. JOHNSTON _____

STENOGRAPHERS:

NARRATIVE REPORT

REFUGE: _____

OKEFENOKEE

PERIOD: _____

MAY - AUGUST 1948

File

OKEFENOKEE NATIONAL WILDLIFE REFUGE

NARRATIVE REPORT

MAY - AUGUST
1948.

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OKEFENOKEE NATIONAL WILDLIFE REFUGE

NARRATIVE REPORT

MAY - AUGUST
1948.

I. GENERAL.

A. Weather Conditions.

	<u>Precipitation</u>	<u>Max. Temp.</u>	<u>Min. Temp.</u>
May	2.46	99	50
June	3.10	97	56
July	10.66	96	53
August	6.07	97	63
	<u>22.29</u> Extremes	<u>99</u>	<u>50</u>

Average precipitation occurred during this period compared to corresponding periods in previous years. Compared to the same period in 1947, there was 38 inches less rainfall. Little rainfall occurred in May and June. However, hardly a day passed during July and August without some precipitation occurring. Heavy downpours were experienced in July.

Extremes in temperatures were about the same compared to the period in 1947 but many more days of high temperatures occurred during the 1948 period. Humidity ran extremely high in July and August.

B. Water Conditions.

Water levels for the period followed very closely those for the same period in 1947. A high reading of 121.98 was recorded from the Camp Cornelia gauge on August 27th and much higher readings were expected during the early part of September.

C. Fires.

Although fire danger readings were very high during May and June, refuge personnel carried on efficient fire patrol and no fires occurred. However, refuge fire 49-1 occurred on August 17th as a result of careless smoking on the part of laborers employed by the timber operation permittee.

II. WILDLIFE.

A. Migratory Birds.

1. Populations and Behavior.

a. Pied-billed grebe. Podilymbus podiceps podiceps

In the narrative report for the corresponding quarter last year it was stated that the summer occurrence of this species in Okefenokee was unusual. Perhaps it is not unusual to observe a few individuals during the summer months as we have three records for this quarter. The first one is June 22 when 3 individuals were seen feeding on Buzzard's Roost Lake. July 1, Patrolman Eadie observed 2 on the Canal east of Coffee Bay. July 23, 1 individual was observed by Patrolman Hall feeding on a bar pit near Fargo, Georgia. These birds may represent early fall migrants as the species nests locally in Florida and Georgia.

b. Water turkey. Anhinga anhinga.

Water turkeys were present throughout the quarter and they appeared more numerous than in the corresponding quarter last year. May 11, 46 individuals were seen from Dinner Pond to the Swamp Park. June 17, 18 individuals were observed at the Dinner Pond rookery. Two days later the writer counted 16 over a rookery at the south end of Chesser's Island. July 1, 12 individuals were seen flying high in the air at Buck Lake Inlet. July 13, Patrolman Coleman and Hall counted 150 individuals at Dinner Pond and Sapling Prairie. Young birds probably made up a good percentage of this number. August 13, the writer observed 9 birds flying over Seagrove Lake. The flock probably included birds raised at the south end of Chesser's Island. The largest number of nests were found at Dinner Pond and Sapling Prairie numbering 20 nests. The Chesser Island rookery contained 10 nests of this species and 8 of the American egret. The average number of young was four per nest.

c. Ward's heron. Ardea herodias wardi.

This species had a successful nesting season judging from the success of approximately 50 nests that were under observation. Dinner Pond and Chesser Prairie had the greatest concentration of nests. A majority of the young had left the nests by the middle of May but there were some late nesters as evinced by three fully feathered young in a nest in a cypress tree 1/4 mile northwest of Seagrove Lake July 28. On August 13 the writer observed two fully feathered young on a nest of this year east of Cooter Lake. One of the birds flew off the nest but the other remained on the nest. The writer on four occasions has watched the egrets, ibis and little blue herons going into the roost at the south end of Chesser's Island and not once has any Ward's herons been observed using the rookery.

American egret. Casmerodius albus egretta.

In spite of rather high water levels during the greater part of the quarter egrets have been fairly common in the swamp. The largest number seen on any one day in May was 18 individuals at Dinner Pond and Sapling Prairie. On June 19, the writer went to the south end of Chesser Island to investigate a rookery that was reported by Joseph T. Chesser. This rookery of about 1/4 acre was centered around an alligator pond surrounded by small cypress and bay trees. The rookery was used by egrets, little blue herons, water turkeys and white ibis. Scattered around this water hole and located in cypress trees approximately 25 feet above the water were 8 nests of this species. A number of the nests contained fully feathered young which clambered out of the nests when the writer approached. The writer succeeded in catching two birds which were carried to Mr. Chesser who accompanied the writer to the rookery who held them while the writer went to the truck for bands. However, the writer got confused in the directions and had to call Mr. Chesser who released the birds. The writer estimated that 300 egrets were using the roost. The following day Patrolman Eadie and the writer went to the rookery and succeeded in catching and banding 11 young birds. After the banding was completed the writer climbed a tree and counted the birds as they came in. 308 egrets were counted. The birds that came in from the north seemed to follow the edges of Chesser's Island and did not fly directly over the island. Mr. Chesser said that these were the first and only egret nests that he had seen in the swamp and he has lived in the swamp 35 years. July 26, the writer estimated that 900 egrets were using the roost. They came in so fast that it was impossible to get an accurate count. July 1, the writer estimated 150 egrets on Buck Lake Prairie and 100 feeding in a shallow prairie at Big Bend. July 13, Patrolman Hall and Coleman counted 350 individuals on Sapling Prairie. August 16, the writer went to Grand Prairie and spent the night there for the purpose of ascertaining whether the egrets and blue herons that feed in the prairie leave the prairie for the Chesser Island rookery. The writer did not see any birds flying out of the prairie toward Chesser Island but many did fly towards Buzzard's Roost Lake where they roosted in the small trees and the old inlet. It was strange that few birds from the direction of Goose House Gap flew towards the Grand Prairie rookery.. Evidently there has been an influx of immature birds from southern nesting sites as only a small percentage were raised in the swamp. The population this quarter exceeds that for the corresponding quarter last year by many hundreds.

Louisiana heron. Hydranassa tricolor ruficollis

This heron which is rather common along the sea coast approximately 60 miles away is a rare bird in the swamp. The writer obtained his first record July 30 when one was seen perched on a fallen tree near Grand Prairie Gap. Later on in the day 4 individuals were seen perched on bushes in a small house at Buzzard's Roost Lake.

*Chloris reported as common in
summers 1940 and 1941.*

f. Little blue heron. Florida caerulea caerulea.

In contrast with the corresponding quarter last year this species in our commonest water bird this quarter. This probably results from the past breeding season migration inland and northward as $3/4$ or more of the birds observed have been in the blue plumage of immature birds. The first birds appeared May 27 and from then on they gradually increased. June 17, the writer counted 50 from Billy's Lake to Big Water. June 19, the writer estimated 800 individuals using the rookery at the south end of Chesser's Island. The following night 780 were counted going into the rookery. June 26, the writer counted 1615 individuals going into the rookery. July 1, 300 individuals were seen feeding in Buck Lake Prairie. July 13, Patrolmen Coleman and Hall counted 450 in Sapling Prairie. July 14, the writer counted 700 individuals as they entered the rookery at the southern end of Chesser's Island. August 16, 150 individuals were estimated in the rookery at Buzzard's Roost Lake.

g. Eastern green heron. Butorides virescens virescens.

This species appears to have had a successful breeding season. The writer noticed little green herons flying back and forth along the canal south of Camp Cornelia so on July 2 a boat was used to explore the deeper portions of the canal east of the fill. Twelve nests were found in shrubs overhanging the water. They ranged from 2 feet to 6 feet above the water and all were in titi bushes with the exception of two which were in black gum and upland willow oak, the latter having blown across the canal. On July 7, the writer found four nests at Bluff Lake, three of which were in the same clump of cypress that was used last year. July 10, the writer found 3 nests in the deep portion of the canal southwest of the guest house. All told 22 nests were found that contained eggs or young. July 22 twelve more nests were found along the canal west of the Suwannee dam. One of the nests was in a honeysuckle Rhododendron viscosum and contained one bird which was caught and banded. None of the 36 nests found contained more than four eggs but five young were found in a nest July 10. Whether this nest contained 5 eggs or a young bird wandered over from an adjacent nest is not known. Three pairs of green herons nested in the big cypress clump at Seagrove Lake. The two or three pairs that nested at Buzzard's Roost Lake last year failed to do so this year. Highlights of day's listings were May 8 when 19 individuals were seen on Durden Prairie; July 11 when Patrolman Davis observed 14 individuals along the canal and July 23 when 20 individuals were seen along the run between the Suwannee Dam and Billy's Island. It seems that many of the birds left the swamp by August as none of our August lists contain more than 3 individuals.

h. American bittern. *Botaurus lentiginosus*.

Birds of Georgia, 1945, state that it is of casual occurrence in summer. Wright and Harper found a bird on June 17, 1912 along the Suwannee River in the Okefenokee Swamp. The writer is happy to report one observed at Monkey Lake, June 22. It arose from some pickerel weed and maiden cane as the boat approached. It also was seen by Warren Houck, Route 1, Elverson, Pennsylvania, a student at Cornell University.

i. Wood ibis. *Mycteria americana*.

The first wood ibis were observed March 14. There ~~there~~ is an elapse of two months before our next record of June 15 when one was seen flying over Jones Island. There are two other records of small flocks for June but on July 1, with the lowest water level for at least a year, there was an influx. 250 were seen feeding on shallow water in Buck Lake Prairie. When they arose the noise made by their wings sounded like the onrush of a tornado. On the same day 18 wood ibis were seen at Big Bend. July 9 the writer counted 100 individuals perched in cypress trees in the small prairie on the southwest side of the Canal between the first and second branch canals. July 13, Patrolmen Coleman and Hall observed 15 individuals on Sapling Prairie. July and August had excessive rainfall with rising water levels and this seems to have affected the ibis population adversely as there was only one record for the month. A single bird observed at Double Lakes August 6.

j. White ibis. *Guara alba*.

The first spring record was March 10 and the largest flock seen in March consisted of 50 individuals. The largest flock observed in April contained 20 individuals. May saw the size of the flock increase to 150 individuals. June and July was the period of greatest concentration. June 14 a flock of 85 birds was observed flying southward across Grand Prairie. On the same date 20 individuals were counted while they perched in cypress trees along the west side of Chesser's Prairie. June 17, the writer and Jim Jenkins saw a flock of 15 flying southwestward along Billy's Lake. The same day 40 were counted at Big Water. June 19, the writer estimated 150 using the roost at the south end of Chesser's Island. The following night 158 individuals were counted as they came into the roost. June 26, the writer tried to get an accurate count at the Chesser Island rookery but the birds came in so fast that it was almost impossible to do this. Usually the white ibis come in in V formations from single birds to flocks consisting of 100 or more birds. From the count the writer estimated that 600 white ibis were using the rookery. A few individuals, usually 1 to 4 individuals, were observed on trips made into the swamp in August. Evidently the high water level was decreased their numbers in the swamp.

k. Wood duck. Aix sponsa.

Day's listings for wood duck run from 5 to 50 for the quarter but there are two days when the listings exceeded the above numbers. On July 12, Patrolman Coleman and Hall observed 528 wood ducks on Sapling Prairie. August 16, the writer went to Grand Prairie and spent the night. At dusk, 330 wood ducks were counted as they flew towards a roost in the Tar Lake area. All of these ducks came from the direction of Goose House Gap and the south end of Grand Prairie. If the ducks came in from the other directions in the same ratio, it is possible that 1000 ducks are using this roost. The writer only observed one pair of adults with a brood June 17 but has seen many more ducklings unable to fly this quarter trying to escape by pattering across the water than in the corresponding quarter last year. From our current observations it is believed that the wood duck population will be up this winter.

l. Purple gallinule. Ionornis martinica.

The narrative report for the corresponding quarter last year gave a paragraph on the finding of gallinules' nests in Grand Prairie and the surmise that they might be those of the purple gallinule. On June 14, the writer discovered three gallinules' nests in Grand Prairie. One nest was in a small patch of aquatic vegetation and was supported by pickerel weed 16 inches above the water. A few pickerel leaves had been interwoven to form a canopy over the nest that contained 6 eggs and there was still 6 eggs June 22. Another nest was on the edge of a gator hole approximately 400 yards northeast of Monkey Lake and like the first nest the supporting vegetation was pickerel weed and it was 15 inches above the water. This nest contained 4 eggs and 2 black downy young one of which had probably been hatched the middle of the morning. The other one had not been out of the shell much over an hour or two as the down was still wet. The young were jet black. The tip of bills were black with a small white spot on the upper mandible. There were a few zig-zag wavy black lines around the middle of the bill. Base of bill reddish. The oldest bird climbed out of the nest while I was getting the boat in position to look into the nest. After I caught the oldest one the other started climbing toward the rim of the nest but didn't get out before I returned the other one to the nest. The nest was visited June 22 and it had been partially destroyed. There were pieces of egg shells in the nest so the other eggs may have hatched before it was partially destroyed. The third nest was in pickerel weed 18 feet from the water of Monkey Lake. It was one foot above the water and looked the canopy. The nest contained 5 eggs June 14 but one was pierced by a pencil while being marked. It was brought to the laboratory and the contents were blown out by Ralph Davis. The egg was then sent to Mr. John W. Aldrich of the Fish and Wildlife Service, Washington, who stated that it was a purple gallinule's egg, so one of the three nests was this species. The other two nests probably belonged to this species. Although the

owners of the nest were not seen. The writer observed a purple gallinule and heard two others May 10. One June 14, 7 individuals were seen or heard in Grand Prairie. The three seen had yellowish legs but no other field marks were discernible. Two birds were heard at Buzzard's Roost Lake July 30. Thus far Grand Prairie is the only place in the swamp where gallinules are found in summer. There are undoubtedly other places but the writer has not found them.

m. Coot. Fulica americana americana.

Patrolman Davis observed 5 individuals in Grand Prairie May 5 and these probably represent late stragglers.

n. Spotted sandpiper. Actitis macularia.

These little sandpipers which are not seen in large numbers during the spring and fall migrations are among the earliest fall migrants. Our last spring record for the quarter was May 11. Our first fall record was between July 25-31 and was obtained by Joseph T. Chesser. He also obtained another record August 8.

o. Yellowlegs. Totanus melanoleucus. Totanus flavipes.

Other early fall migrants through the Okefenokee are the yellow-legs. Our first record is July 31 when the notes of one were heard as the bird flew over headquarters August 18. Another bird was heard to utter three notes as it flew over headquarters. None of the birds have actually been seen but it is believed that both the larger and lesser yellow-legs were represented.

p. Black tern. Chlidonias nigra surinamensis.

July 30, the writer got a glimpse of a tern as it flew by little Cooter Lake in Grand Prairie. It changed the course of flight when it saw the writer. August 16 just before dusk a tern was seen flying southward between Monkey Lake and Goose House Gap. The time these birds were under observation did not permit actual identification but from past observations it is believed that the two birds were black terns. It is possible that a single bird has taken up residence in Grand Prairie and it is this bird that the writer observed.

2. Food and Cover.

Aquatic and marsh plants have made the usual growth during the quarter. Watershield, Brasenia, the largest patch which occurs around Seagrove Lake, has increased in size until it almost covered an acre. The patches at Monkey and Buzzard's Roost Lake have spread but not as much as the Seagrove Lake patch. Duck grass, Rynchospora corniculata was beginning to bloom by July 30. This plant is usually found on batteries and appears to be most abundant on batteries that have arisen

from submergence this spring. The stomach of a black duck killed in Chesser's Prairie by a bobcat December 5, 1947 contained 85 seeds or 3% of this beakrush. The stomach of a mallard killed by a bob-cat at the same time contained 8 seeds or 1% of this beakrush. This beakrush is generally found along the edges of the prairies but a species that grows in water has been seen in Grand Prairie. Traces of Rhynchospora gracilenta and Rhynchospora fascicularis were found in two of the three duck stomachs that were examined. Red root, Gyrotheca tinctoria started blooming June 20 and most of the plants had completed this stage by August 1. The high water levels that prevailed during the greater part of the quarter have not affected the distribution and abundance of the plant. Spikerush, Eleocharis sp. is found throughout the prairies. Dense stands are found in the run at Dinner Pond platform. Water lily, Castalia odorata was blooming fairly well at the beginning of the quarter. The stomach of a black duck killed in a trap by a bob-cat contained 27 seeds or 1% of this species. The stomach of a mallard killed at the same time contained a trace. Waterlilies were blooming in greater abundance at the end of the quarter than at the beginning. The waterlily is practically replaced by spatterdock, Nymphaea macrophylla on the west side of the swamp. Spatterdock is found along the runs through Sapling Prairie almost to Cowhouse Island. There is a fair crop of saw palmetto, Serenoa repens berries and these no doubt will be eaten by bears and turkeys. There is a good crop of berries for black gum, Nyssa biflora. Cassine holly, Ilex cassine, gallberries, Ilex glabra and Ilex coracea, Elderberry, Sambucus canadensis, blackberry, Rubus, possum haw, Viburnum nudum, black bamboo, Smilax laurifolia, red bamboo, Smilax volteri. There is a heavy production of acorns by most of the oaks that occur in the Okefenokee. During the last three weeks of August, two coveys of bobwhites have been feeding on ripe berries of the elderberry at headquarters. One day in August 23 birds (coveys of 11 and 12) were seen around the elderberry. The birds flew up into the bush to eat the berries. The stomach of a black duck killed in a trap December 5, 1947 by a bob-cat contained 15 seeds or 3% of Smilax, probably laurifolia. The stomach of a mallard killed at the same time contained 40 seeds or 14% of Smilax, probably laurifolia.

B. Upland Game Birds.

Populations and Behavior.

a. Bob-white. Colinus virginianus virginianus.

At the beginning of the quarter bobwhites were heard and seen almost daily at Camp Cornelia, but they had paired off by this time. On June 16 a pair was observed crossing the road in The Pocket. It was not until June 28 that a brood of 15 young still in the downy stage was observed crossing the yard at headquarters. Ten of the little fellows were caught and placed in a bucket for a short time then released. The last of July two adults and five half-grown young were seen under and in the elderberry bush at headquarters. August 4 a covey of 14 birds including the parent birds was flushed from the palmettoes at the southeast corner of the breeding bird plot. The young could fly and they were probably

hatched on the south side of the canal. August 19 the writer saw a large covey of bob-whites of two sizes feeding around the elderberry bush at headquarters. After feeding for a short time the parents of one covey walked westward across the lot. This covey contained 11 birds. The parents and young of the other covey walked eastward into the briar patch. This covey contained 12 individuals. So there are three different coveys that ranged in the lot at headquarters during August. Joseph T. Chesser reports two coveys of from 8 to 10 young on Chesser's Island and two coveys of 8 and 12 birds along the road between Chesser's Island and headquarters. Patrolman Eadie observed a covey of 14 at the boat landing August 22. The young were in the downy stage and unable to fly. August 25, Joseph T. Chesser saw five fully grown bob-white along the fence on the north side of the compound. There were probably other young that he did not see. Thus there are seven known coveys with a total of 79 individuals within a mile radius of Camp Cornelia. From these observations it is apparent that the bob-white has had a successful breeding season and are as numerous as they were the corresponding quarter last year.

b. Eastern turkey. Meleagris gallapavo silvestris.

From the observations made during the quarter it is evident that the turkey population around Camp Cornelia is far below last year's population. This spring the writer heard a male gobbling on two mornings, probably the same bird. We do not have any reports of young turkeys. However, Union Bag and Paper Company employees have seen a few adult birds. August 24, Joseph T. Chesser saw tracks in the Chesser Island road approximately 1/2 mile southwest of Camp Cornelia, which were made by two individuals.

c. Eastern mourning dove. Zenaidura macroura carolinensis.

A few pairs have been observed around Camp Cornelia and one pair had a nest in a lob-lolly pine tree in the lot. The nest was out on a horizontal limb approximately 22 feet above the ground and the height prevented the writer from banding the young. A small flock is present on Chesser's Island. At the close of the quarter no definite migration had begun.

2. Food and Cover.

There has ~~not~~ been no noticeable change in the cover with the exception of the removed "boxed pine trees for logs and pulpwood. This timber operation has opened up the woodlands. The logging operations have had a beneficial effect on the partridge pea, Chamaecrista growing along the canal banks. It appears that dragging logs over the ground helps to scarify the seed which results in better germination. There is a good pine mast crop and the grey squirrels started eating the pine seed early in July. There is a good crop of bullace grapes, Muscadinia munsoniana, which were beginning to ripen July 20. The writer observed mocking birds,

brown thrasher and white-eyed towhees eating the grapes. Elderberries were eaten by the red-bellied and red-headed woodpeckers. As usual there is a good crop of wax myrtle, Myrica cerifera. There was a good huckleberry and blueberry crop. There were some tall blueberry bushes near the boat landing and Jones Island that were simply loaded with ripe luscious berries June 16. Turkey oak, live oak, upland willow oak, laurel oak, scrub oak, and dwarf oak are very productive of acorns this year.

C. Big Game Animals.

1. Populations and Behavior.

a. White-tailed deer.

During the quarter the writer has not seen a single deer. However, Patrolmen Coleman and Hall have reported several on the west side. Harry Chessser reported seeing the last of July a doe with a fawn on the Trail Ridge road approximately 3 miles north of Camp Cornelia a few tracks have been observed in the compound around headquarters.

b. Black bear.

With the emergence of the bears from the interior of the swamp and their appearance in the surrounding uplands come reports of bear depredations on hogs and cattle, but as is usually the case destruction of livestock was exaggerated. The irate stock owners organized hunting parties and went after the marauders. Traps were also used to combat bruin and Willie and Ralph Davis did succeed in trapping one in July. Mr. Renshaw and party killed a 380 pound bear that had been getting a pig each night for a week or more. This animal was killed approximately 2 miles from the swamp.

June 22, Patrolman Eadie, Warren Houck, John Wanamaker and the writer saw a bear standing up and looking at us as we approached a house in Grand Prairie. She finally retreated into the house and made a series of grunts. We soon found out why she acted this way for right in the top of bay trees covered by bamboo, Smilax laurifolia, were three cubs that would weigh 20-25 pounds apiece. Soon after we discovered the cubs, the mother rushed out of the house and went to a nearby house. Mr. Houck and the writer climbed up the bay trees and took three pictures of a cub. One little fellow did not like our presence so he scrambled down a tree and went to another house. The writer was close enough to pet one, but when we got down two of the cubs were still in the tree tops. The mother bear came out of the nearby house once while we were getting the pictures. July 22, Morris Ryder and the writer went to Billy's Island and spent the night. Less than 1/4 mile west of the old switch on Billy's and Floyd's Island tramroad, we startled a bear close to the boat run. Last December in the same vicinity, the writer heard a mother bear grunting to her cubs. Joseph T. Chessser, on several occasions, has observed bear tracks in the roads on Chessser Island and in the road to headquarters. August 6,

Joseph T. Chesser and the writer made a trip to Gannett Lake and bear sign was practically non-existent. July 7, Patrolman Eadie and the writer went to Durden Prairie. We saw regular bear trails along the boat run through the bay. No such trails were seen along the run last year.

2. Food and Cover.

As previously mentioned in this report there is a good acorn crop and the saw palmetto has a fair crop of berries which will later provide food for bears. On July 22, the writer saw several places along the west end of the canal where bears had been after bullace grapes, Muscadinia munsonina. There is a good crop of gum berries which will be eaten by bears this fall. With so many species having good seed crops bears in the swamp should find ample food.

D. Fur Animals.

1. Raccoon and opossum are everywhere plentiful in the swamp. August 24, Patrolman Eadie observed two raccoons crossing the road between headquarters and the CCC camp site. June 19, Patrolman Eadie and the writer saw two otters cross the road at the first "dreen" on the Chesser Island road. They had been feeding in pools along the road. No bobcats have been seen during the quarter but this does not mean that they are not present, on the refuge. The grey squirrels started making nests the last of June and young were heard in the nests by the last of July. The Cornelia squirrels started feeding on long-leaf pine cones July 1. The ground under a tree that had several cones is covered by pieces of the cones. A few rabbits have been seen at Camp Cornelia and they have eaten the leaves of watermelon, mushmelon, small mushmelons and ripening tomatoes,

E. Predaceous Birds.

Swallow-tailed kite. Elanoides forficatus forficatus.

We do not have as many observations of this species this quarter as we did for the corresponding quarter last year but our observations this quarter probably represent as many individuals as for the corresponding quarter last year. May 8, Patrolman Hall observed four individuals at the old CCC barracks on Jones Island. He stated that they appeared to be feeding on insects that were on wax myrtle bushes. July 24, Patrolman Hall observed a single bird flying over Billy's Lake.

2. Eastern red-tailed hawk. Buteo borealis borealis.

When only two records of a species is obtained in four months in an area the size of Okfenokee that species certainly cannot be called common. This is the case of the red-tailed hawk. One bird was seen in the pine woods at Camp Cornelia May 9. Another bird was seen June 17 perched in a cypress tree at Big Water. Thus far the writer does not have any evidence of breeding in the swamp unless the presence of birds in May and June indicates breeding.

3. Florida red-shouldered hawk. Buteo lineatus alleni.

There is nothing to report about this common hawk in the swamp except the discovery on May 10 of a nest containing four nearly grown young in a tall pine tree in a house on Chesser Prairie. Another thing of interest about this hawk is the tameness of some individuals which may be young birds. July 23 in response to a "squeak" one perched upon a limb within 20 feet of my jungle hammock on Billy's Island. The hammock was zipped and the writer got out of the hammock and dressed while the hawk looked on. It was not until the hammock was taken down that the hawk flew.

4. Osprey. Pandion haliaetus carolinensis.

The young in all the known nests in the swamp were out of the nests by the middle of June and throughout July from 1 to 5 individuals were on a day's list. Patrolman Coleman and Hall counted 5 birds in Sapling Prairie July 13. The writer did not observe the species during August. Evidently the birds or a majority of them are early migrants. A foreman of a group employed on Jones Island by the concession company is reported to have killed one with a fishing pole in July.

5. Southern screech owl. Otus asio asio.

From January 12 until July 26 this species was not recorded. This does not mean that the birds are absent. They are silent. Since July 26 there are three records, all based on the "screeching" of birds at Camp Cornelia.

6. Great horned owl. Bubo virginianus virginianus.

We have two records of this species for the quarter. Joseph T. Chesser observed a single bird along the Chesser Island road June 22 and July 15. The writer spent the night on Billy's Island but did not hear a single bird hooting.

7. Florida barred owl. Strix varia alleni.

Days' lists throughout the quarter contained from 1 to 4 birds and seldom is a trip into the swamp made without one or more birds being listed.

8. Fish crow. Corvus ossifragus.

The number of fish crows that occur in the swamp in summer varies very little from summer to summer. The largest number seen in a single day was a flock of 14 at Camp Cornelia July 16. July 9, two individuals were seen at the cornbox on Chase Prairie. July 30 two birds were seen in the piney house at Buzzard's Roost Lake. August 7 a flock of 11 flew over Camp Cornelia. None have been seen since August 19.

G. Alligators.

June 14 the writer went to Monkey Lake in Grand Prairie. While there 19 alligators were counted in that small lake. Falling water levels may have caused the saurians to seek deeper water such as afforded by this lake. July 23, the writer caught a small alligator measuring 17 inches in length in the run 1 mile west of the Suwannee Dam. This little fellow was about a year old. It was released in the swamp after it had been photographed. August 7 an alligator measuring 10 feet and 4 inches was caught at the boat landing in a wooden bear trap that had been baited with dog fish. Mr. David Da Lie, Manager of the Okefenokee Swamp Park was notified and he brought assistants and came down to get the animal. Da Lie finally succeeded in tying the animal which was loaded in the station wagon and taken to the Swamp Park as an attraction to their wildlife exhibit. The 'gator was removed from the canal at the boat landing because it had been stalking some pigs and was deemed dangerous to fishermen and visitors at the boat landing. August 6, Joseph T. Chesser found a small alligator's nest about 1/4 mile northwest of Goose House Gap. Unfortunately, it did not contain any alligator eggs but it did contain at least 50 cooter eggs.

III. REFUGE DEVELOPMENT AND MAINTENANCE.

A. Physical Maintenance.

As in past periods it was necessary for refuge personnel to spend a great deal of time in maintaining the Cornelia entrance road and Chesser Island roads. At the close of the period no road repair equipment had been furnished this station and it was very difficult for personnel to keep the roads open to travel, using small hand tools. Fence repair and maintenance consumed a good part of all personnel's time. High winds blew down numerous old turpentine pine trees across the refuge fences and created extra fence repair.

The boat dock at the Cornelia landing was repaired by replacing rotted timbers and beams with dead pine trees cut near the Cornelia headquarters. Some planking was also replaced.

Preventive maintenance and safety inspections were incorporated in the automotive repair and maintenance program at this station. Personnel were installed to follow closely the established policy on preventive maintenance.

Some rotted poles were replaced in the telephone line from Camp Cornelia to Folkston. New insulators and some ground wires were added. This line of communication has been somewhat improved.

Boats and outboard motors received periodic cleanings and adjustments. Greater operating success is being enjoyed with the larger motors than with those of lesser horsepower formerly used.

Patrolmen continued cleaning out the boat run from the end of Suwannee Canal to Billy's Lake. When this run is cleared it will be possible for patrolmen to cross the swamp in very little time by using a light boat and small motor. This run is not to be opened to travel by other than refuge personnel.

Some boundary lines on the north end were cut out and remarked. It is planned during the coming period to begin a complete remarking and posting of all existing lines.

B. Physical Developments.

Contract I-6-fw-11066, for operation of the guide concession at the western entrance to the refuge was granted by the Service on May 20th to Okefenokee Recreation, Inc. of Homerville, Georgia.

Contract I-6-fw-11081, for operation of the guide concession at the northern entrance to the refuge was granted the Okefenokee Association, Inc. of Waycross, Georgia on June 1st by the Service.

After considerable planning, Contract I-6-fw-11134 was awarded by the Service on July 28th to the Okefenokee Sportsman's Club, Inc. of Folkston, Georgia for operation of the guide concession at the Camp Cornelia entrance.

Execution of the foregoing contracts consumed a great deal of the Acting Manager's time as well as time of other refuge personnel. Supervision of contract conditions is now requiring and will continue to require a considerable amount of refuge personnel's time until construction is completed and boat runs are cleaned and opened.

IV. ECONOMIC USE OF REFUGE.

D. Timber Removal.

Considering the abnormal rains during the latter part of the period, the timber operation under Special Use Permit 46-466 progressed about as well as could be expected. When the woods became too wet and soggy to permit hauling the permittee was required to clean up slash and butts. One attempt was made to move the operation to Loyd's Island but the entrance road became impassable to even tractors and 4-wheel drive trucks.

V. FIELD INVESTIGATION OR APPLIED RESEARCH.

A. Progress Report on Bird Banding.

1. Tabulation of bird banding during quarter and to date:

Species	Prev. Banded	May	June	July	Aug.	Qtr.	F.Y.	To date
Water turkey	6	19	6	0	0	25	31	31
Ward's heron	23	1	0	0	0	1	24	24
American egret	0	0	11	0	0	11	11	11
Green heron	9	0	0	50	0	50	50	59
Chuck-will's-widow	0	2	2	0	0	4	4	4
Florida nighthawk	3	0	2	0	0	2	4	5
Red-headed wood- pecker	2	0	3	0	0	3	5	5
Hairy woodpecker	0	0	0	1	0	1	1	1
Kingfish	0	0	0	3	0	3	3	3
Crested flycatcher	1	6	0	0	0	6	7	7
Carolina wren	10	6	6	0	0	12	19	22
Mockingbird	18	15	8	0	0	23	23	41
Bluebird	38	15	0	9	0	24	42	62
Red-wing	14	12	0	0	0	12	12	26
Florida grackle	6	4	0	0	0	4	4	10
Others	1010						869	1010
Totals	1140	80	38	63	0	181	1053	1321

B. Breeding Bird Census Report.

Due to timber cutting operations on the longleaf pine and palmetto flatwoods census area lying north of the road between headquarters and the boat landing, a new one was selected this year for the breeding bird census. The new census area lies south of the canal and is about as uniform a habitat of this type as can be selected on this region. Temporary details to Cape Romain Refuge prevented the biologist from spending more hours on the project. The census revealed 43 pairs of birds per 100 acres of this habitat type.

LONGLEAF PINE AND PLAMETTO FLATWOODS. A typical flatwoods, the dominant species being longleaf pine (*Pinus palustris*); secondary dominants, slash pine (*Pinus caribaea*), upland willow oak (*Quercus cinerea*), turkey oak (*Quercus catesbaci*). A distinctive understory is present throughout the area and includes in the order of abundance the following species: saw palmetto (*Serenoa serrulata*), gallberry (*Ilex glabra*), dwarf live oak (*Quercus minima*), dwarf wax-myrtle (*Certhamnus pumilus*), huckleberry, (*Cyanococcus myrainites*), staggerbush, (*Xoliana fruticosa* and *X. ferruginea*), scrub oak (*Quercus myrtifolia*), large gallberry (*Ilex coriacea*), fetterbush (*Desmothamnus lucidus*), sweet pepperbush (*Clethra alnifolia*), gopher apple (*Chrysobalanus oblongifolia*), Rubus blackberry (*Rubus sp.*), calico bush (*Kalmia hirsuta*), chinquapin (*Castanea pumila*).

Certain portions of the area have dense stands of wiregrass (*Aristida*) and other native grasses. The forest is a mixed age stand, the older trees averaging 16 inches in diameter (DBH) and 90 feet in height. All the older trees have been worked "gum" and are in a decadent stage. The second-growth trees average about 7 inches in diameter (DBH). The area was burned by an uncontrolled fire during February 1946 and many of the "boxed" trees were cut for pulpwood during the summer of 1947. Botanical nomenclature above follows "Guide to Georgia Trees", by Wilbur E. Duncan, and "Manual of the Southeastern Flora", by J. K. Small, 1933 ed.) Size: 47 acres (surveyed, 14x34 chains). Location: South side of Suwannee Canal and between Trail Ridge road and the swamp, Okefenokee National Wildlife Refuge, Charlton County, Georgia. Tract bounded on all sides by similar forest. Topography: Level, north boundary approximately $4\frac{1}{2}$ chains from the abandoned Suwannee Canal. Dreen or branch on the south side of area drains into the swamp. Elevation: 120-140 feet. Surveys: Selection and mapping completed December, 1947. Coverage: April 28, 30; May 8, 9, 25, 26, 27, 28. Hours varied from 5:00 A.M. to 7:30 P.M., totaled $12\frac{1}{2}$. Weather: Temperatures moderately above normal. Precipitation averaged above one-half inch above normal. Winter open. The birds were censused by the Williams spot-mapping method, and observations were made by traversing the area along staked lines 2 chains apart. Sensus: Pine-woods sparrow, 4 (2Y), pine warbler, 2 (1Y); brown-headed nuthatch, (2)(1Y), white-eyed towhee (2-1P), red-cockaded woodpecker, 1 ($\frac{1}{2}$ P); yellow-throat, 1 ($\frac{1}{2}$ P); brown thrasher, 1 ($\frac{1}{2}$ P); Carolina wren, 1 ($\frac{1}{2}$ P); red-headed woodpecker, 1 ($\frac{1}{2}$ P). Birds with territories on or partially on area, 9 species; density, 15 pairs per 100 acres. The following species nested off the area but visited it for food: Carolina wren, 6 (3P); white-eyed towhee, 4 (2P); yellow-throat, 4 (2P); red-headed woodpecker, 4 (2P); crested flycatcher, 4 (2P); red-bellied woodpecker, 2 (1P); flicker, 2 (1P); hairy woodpecker, 2 (1P). Total, 8 species: density, 28 pairs per 100 acres. Grand total of all birds nesting on or regularly feeding on area 13 species, density 43 pairs per 100 acres. Visitors (average number of individuals per 100 acres); Florida grackle, 2; Florida nighthawk, 1; bob-white, 1; fish crow, 1; Florida blue jay, 1; bluebird, 1; chimney swift, -; mourning dove-; mockingbird -; chuck-wills-widow-; kingbird-4

C. Utilization of nesting boxes by song birds.

The writer had 14 nesting boxes scattered from the old CCC camp site to the boat landing at the beginning of the nesting season. One box at the old CCC camp site was stolen after a pair of bluebirds had nearly completed a nest. This is the second box stolen from this site since January 1947. Twelve of the remaining thirteen boxes were occupied and seven of the twelve boxes had two nests during the nesting season. Bluebirds used 10 of the nesting boxes for a total of 16 nests from which went 61 young bluebirds. A pair of crested flycatchers used one box, laying six eggs of which five hatched and the young left the box. A pair of red-headed woodpeckers used one of the boxes, the same one that was used by this species last year. Three eggs were laid, two of which hatched and the young left the nest.

A brown-headed nuthatch is believed to have used one of the boxes as it contained a nest of pine seeds, the characteristic nesting material used by this species. The appearance of the nest indicated that it had contained young. By banding the owners of a nest it was easy to determine whether the pair stayed mated for the nesting season and whether they raised two or more broods during the season. The writer does not have evidence that bluebirds raise three broods at Okefenokee but some pairs raise two broods, usually in the same nesting box. Bluebirds are definitely more common at Camp Cornelia than they were when the writer was transferred to Okefenokee.

VI. PUBLIC RELATIONS.

A. Recreational Uses.

It is evident that the national advertising being sponsored by the Okefenokee Association, Inc. of Waycross and the Okefenokee Sportsman's Club, Inc. of Folkston, regarding the Okefenokee Swamp, is responsible

for the ever increasing numbers of fishermen, sportsmen, sightseers and scientists visiting the refuge during the period compared to 5,000 for the corresponding period in 1947 and it is believed 10,000 persons would have visited if the high water levels had not affected the good fishing during July and August.

B. Visitors.

Mrs. E. G. Kilpatrick, Miss Elizabeth Griffis and Miss Allie Gafford of Atlanta Regional Office arrived on the evening of May 28th. On May 29th, refuge personnel accompanied them on a visit to the west side of the refuge. On May 30th they visited the north end of the refuge.

Mr. Howard A. Miller arrived on the afternoon of June 6, 1948 and conferred with Manager Edwards on refuge policies. On June 7th, he was accompanied by refuge personnel from Cowhouse Island to Dinner Pond, Big Water and on out through Jones Island. On June 8th he was accompanied by refuge personnel from Camp Cornelia boat landing to Floyd's Island for inspection of cabin and boardwalk. In the evening he conferred with the Okefenokee Sportsman's Club, of Folkston, Georgia relative operation of concession on east side of refuge. Mr. Miller left for the Regional Office on the morning of June 9th.

Mr. Walker T. Harrod, U. S. Game Management Agent, attended Federal Court in the Post Office Building in Waycross on June 14th and 15th. He also conferred with Manager Edwards in the refuge office in Waycross re refuge violations.

Mr. Wm. S. Towns, of the Regional Office visited the refuge office and attended Federal court in Waycross relative land cases on June 14th.

Assistant U. S. Attorney Russell visited refuge office on June 14th and inspected east side of refuge on June 15th, escorted by refuge personnel.

U. S. Attorney J. Saxton Daniels visited refuge office on June 16th for conference on refuge violations and settling of fishing cases in State court.

Manager Childs of Sabine Refuge and Manager Parker of Lacassine Refuge on visit in Waycross office on July 8th.

Mrs. G. Osborne of Regional Office and party arrived July 10, 1948 for visit to refuge. Spent July 11th inspecting east side of refuge in company with Manager Edwards.

Mr. Richard Dittman of Regional Office in refuge office on July 15th for discussion with members of Okefenokee Recreation, Inc. of plot plans.

Mr. Eugene Cypert, Biologist, from Paris Tennessee, in Waycross office for conference on July 21st.

Mr. Verne E. Roweley, radio technician, National Park Service, arrived for conference on FM radio equipment August 13, 1948.

Mr. W. P. Baldwin, Biologist, in Waycross Office for visit on August 23, 1948.

Mr. S. V. Landers, Firestone Representative, was in Waycross office on August 26th for conference on use of Firestone spark plugs in outboard motors and automotive equipment.

Mr. R. F. Thorne of Cornell University and Dr. W. C. Meuncher of Emory University, in Waycross office for permit to collect botanical specimens on refuge for scientific studies on August 31, 1948.

C. Refuge Participation.

The Acting Refuge Manager continued to meet with numerous civic organizations in Waycross, Homerville and Folkston in an effort to educate people living adjacent to the refuge in the aims and purposes of the Fish and Wildlife Service. Some success was enjoyed in pointing out that the bears, which have been preying on the livestock of farmers each summer, do not come out of the refuge interior but come from privately owned rough woods bordering the refuge boundaries. Presentation of this thought to landowners and farmers resulted in some highly successful control burns in the woods surrounding the swamp. As was expected by the writer, in those areas where the roughs were burned, the bear moved deeper into the swamp and its islands and depredations on stock greatly declined.

D. Hunting.

No open season for hunting during the period. Observations of patrolmen and others indicate a bumper crop of quail and squirrels and an increase in deer and turkey on areas adjacent to the refuge.

E. Fishing.

All types of fishing were excellent during May and June. Perch fishing was only fair in the early part of July and then unsettled weather and high water levels made good catches difficult. Trolling for bass and jack produced some good catches toward the close of the period. In all fishing was much better on the east side than on the west side of the refuge. This is attributed to the high water levels on the west side in Billy's Lake caused by the drainage from east to west.

F. Violations. - Case Disposition - Refuge Cases.

Willie Darling Crews, Herbert M. Crews and Charlie L. Crews apprehended June 4, 1947 fishing in the waters of the refuge without State license, by Patrolman Wm. W. Davis, Jr. and Manager Wm. R. Edwards. Received fines of \$10.00 each and 6 months probation, on June 26, 1948, in in Charlton County Court.

C. H. Waters, J. W. Reid, L. F. Royal, Mrs. R. F. McKenney and Mrs. Helen Wolfe apprehended June 8, 1947 fishing in the waters of the refuge without State license, by Patrolmen Hall and Coleman. Each received fine of \$10.00 and six months probation, on June 29, 1948 in Charlton County Court.

Leon Crawford apprehended April 20, 1948 fishing in the waters of the refuge without State license by Manager Wm. R. Edwards. Received fine of \$10.00 and 6 months probation on June 26, 1948, in Charlton County Court.

Robert S. Young apprehended June 21, 1948 fishing in the waters of the refuge without State license by Patrolman Grady N. Jernigan. Received fine of \$10.00 on June 25, 1948, in Charlton County Court.

Euel C. Smith apprehended June 21, 1948 fishing in the waters of the refuge without State license by Manager Edwards. Received fine of \$10.00 on June 25, 1948, in Ware County Court.

Cleo Anderson, H. D. Fuss and W. H. McCarthy apprehended June 18, 1948 possessing and taking over the limit of game fish from the waters of the refuge by Patrolman John D. Eadie. Received fines of \$25.00 each on August 28, 1948, in Charlton County Court.

Earl G. Sims, Mrs. E. G. Sims and Jerry A. Sims apprehended July 4, 1948 fishing in the waters of the refuge without valid non-resident fishing license, having purchased resident licenses and given fictitious addresses, by Patrolman Grady N. Jernigan and Manager Wm. R. Edwards. Received fines of \$25.00 each on July 17, 1948, in Charlton County Court.

Mrs. Ouida Laforrest Lucas apprehended July 7, 1948 fishing in the waters of the refuge without license by Patrolmen Eadie and Jernigan. Fined \$10.00 on August 14, 1948, in Charlton County Court.

Golden Manley Thacker apprehended July 10, 1948 fishing in the waters of the refuge without State license by Patrolmen Eadie and Jernigan. Received fine of \$25.00 on August 28, 1948, in Charlton County Court.

George Thomas Hutchinson and James E. Mosley apprehended July 17, 1948 fishing without State License on the waters of the Okefenokee Refuge, by Patrolman Grady N. Jernigan. Fined \$10.00 each on August 14, 1948, in Charlton County Court.

James Marshall Gibbs apprehended July 24, 1948 killing an osprey with a pole on the refuge by Patrolman Jewett V. Hall. Received fine of \$25.00 on August 28, 1948, in Charlton County Court.

Joseph P. Crawford apprehended August 14, 1948 fishing in the waters of the refuge without State license, by Patrolman Grady N. Jernigan. Received fine of \$10.00 on August 14, 1948, in Ware County Court.

Violations. - Cases Pending - Refuge Cases.

Chester B. Davis of Jackson, Mississippi, was arrested by Patrolman Jernigan, July 7, 1948 fishing in the waters of the refuge without a State license. Davis was arraigned before the U. S. Commissioner in Waycross on July 7 and placed under bond of \$100.00. The case is being prepared for prosecution in Federal court.

James E. Plunkett, Ivey B. Barnes, John Emmett Holland, Emmett Rudolph Royal and Fitz. L. Royal, all residents of Georgia, were apprehended by Patrolmen Hall and Coleman on July 8, 1948 trespassing on a restricted area of the refuge without permit. The cases are being prepared for prosecution in Federal Court.

The following cases are to be settled in Ware County Court during the month of October, 1948:

Mr. and Mrs. Clifford Crosby were apprehended by Patrolman Eadie on June 10, 1948 for having over the limit of fish in their possession.

M. M. Lang was apprehended June 10, 1948 by Patrolman Eadie for taking over the limit of game fish from the waters of the refuge.

James M. Allman and James F. Roddenberry were apprehended by Patrolman Eadie on June 10, 1948 for fishing in the waters of the refuge without State license.

Samuel M. Altman was apprehended by Patrolman Eadie on June 12, 1948 for fishing in the waters of the refuge without State license.

James Daniel Allen was apprehended by Patrolmen Jernigan and Eadie on July 3, 1948 for fishing in the waters of the refuge without State license.

Upshaw F. Gibson was apprehended July 17, 1948 by Patrolman Jernigan for fishing in the waters of the refuge without license.

Violations: - Cooperative Cases.

The following cases were made by refuge personnel in cooperation with State of Georgia Conservation Officials in Clinch County on areas

adjacent to the refuge.

H. C. Pittman and Bud Pittman were apprehended deer hunting at night with gun and light by Patrolman Hall and Coleman on August 3, 1947. Received fines of \$50.00 each and 6 months probation in Clinch County Court, on August 4, 1947.

Buddy Griffis was apprehended deer hunting at night with gun and light by Patrolman Hall and Coleman on August 3, 1947. Received fine of \$100.00 and 12 months probation in Clinch County Court, on August 4, 1947.

Clyde Barton was apprehended August 3, 1947 by Patrolmen Hall and Coleman for possession of venison meat out of season. Received fine of \$100.00 and 6 months probation in Clinch County Court, on August 4, 1947.

Garnet Hare was apprehended August 13, 1947 by Patrolmen Hall and Coleman hunting deer at night with gun and light. Received fine of \$300.00 in Clinch County Court, on August 16, 1947.

Ernest Higginbottom, James L. Markham and Bryant Skimmer were apprehended August 13, 1947 by Patrolmen Hall and Coleman deer hunting at night with gun and light. Received fines of \$250.00 each in Clinch County Court, on August 16, 1947.

Tommie Alford was apprehended August 16, 1947 by Patrolmen Hall and Coleman deer hunting at night with gun and light. Received fine of \$250.00 in Clinch County Court, on August 16, 1947.

H. C. Parks was arrested by Patrolmen Hall and Coleman on June 12, 1948 for fishing in the Suwannee River without a State license. An appearance bond of \$25.00 was forfeited.

C. H. Pendley, Cecil Pendley, T. V. Jenkins, W. E. Bishop, Davis Carter and Emory Carter were apprehended on June 12, 1948 for taking over the limit of fish from the Suwannee River by Patrolmen Hall and Coleman. Appearance bonds of \$25.00 each were forfeited.

Enforcement

Patrolmen continued to receive training during the period by the Acting Refuge Manager in handling of firearms, making apprehensions and arrests and presenting cases in County Courts for disposition.

Strict patrol was emphasized for alligator hunters during the period but no violations were found.

VII. OTHER ITEMS OF INTEREST.

Patrolman Eadie from Reelfoot National Wildlife Refuge reported for duty May 31st at Cornelia headquarters.

Appointment of Wm. W. Davis, Jr. was terminated on June 2, 1948 by the Regional Office upon recommendation by Refuge Manager Wm. R. Edwards.

Patrolman McCray L. Coleman was placed on assignment with Patrolman Dean of Savannah Refuge transferring Boat 176 to Everglades National Wildlife Refuge and other property from Everglades Refuge to St. Marks Refuge, and to Savannah Refuge, the early part of May.

Grady N. Jernigan was appointed as a Laborer-Patrolman July 1, 1948 at Camp Cornelia Headquarters.

A large bull alligator, ten feet, six inches in length and weighing approximately 375 pounds was trapped in Suwannee Canal in box-type bear trap on August 7, 1948 by Patrolmen Eadie and Jernigan. It was turned over to Okefenokee Swamp Park for display pond. The 'gator had become belligerent and began to attack persons at Cornelia boat landing. Several attempts had been made to scare him away from the boat landing but to no avail.

Bears began coming out of the swamp and surrounding rough up-lands about the first of August to prey on cattle and other livestock. Trapping began. Patrolmen are assisting stockowners in killing marauding bears.

Respectfully submitted,

Wm R. Edwards

Wm. R. Edwards
Acting Refuge Manager

By: *Margaret B. Barrett*
Margaret B. Barrett
Refuge Clerk (Clk.-Typist)

September 15, 1948.

Date: 9/16/48

Approved: *Wm K Shurber*
Acting Reg. Refuge Supv.

WATERFOWL

Refuge Okefenokee Months of May to August 1948

(1) Species Common Name	(2) First Seen		(3) Peak Concentration		(4) Last Seen		(5) Young Produced		(6) Total
	Number	Date	Number	Date	Number	Date	Broods Seen	Estimated Total	Estimated for Period
I. <u>Swans:</u> Whistling swan									
II. <u>Geese:</u> Canada goose Cackling goose Brant White-fronted goose Snow goose Blue goose									
III. <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									
IV. <u>Coot:</u>									
	present	8,000*	8/30		Present			5,000*	5,000*

*Estimated.

(over)

SUMMARIES

Total Production:

Geese 0

Ducks 6,000

Coots 0

Total waterfowl usage during period 6,000

Peak waterfowl numbers 6,000

Areas used by concentrations No concentration areas

Principal nesting areas this season _____

Throughout season.

Reported by R. J. Fleetwood

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 Crofton Months of May to August 1948

(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	3	6/22	—	—	still present		0	0	0	10*
Water turkey	present		150	7/13	still present		2	30	90	220*
Ward's heron	present		35	5/10	still present		1	50	150	800*
American egret	present		900	6/30	still present		1	8	32	3000*
Louisiana heron	5	7/30	—	—	still present		0	0	0	25*
Little blue heron	present		1615	6/26	still present		0	0	0	3500*
green heron	present		20	7/23	still present		3	36	550	850*
yellow-crowned nightheron	present		17	5/5	still present		0	10	35*	65*
American bittern	1	6/22	—	—	1	6/22	0	0	0	1
Least bittern	3	5/10	700*	7/20	still present		0	100*	500*	700 *
Wood ibis	present		250	7/2	still present		0	0	0	400*
White ibis	present		800	6/26	still present		0	0	0	900*
Florida crane	present		20	5/10	still present		0	30*	80*	120*
Callimule	present		7	6/14	still present		1	3-12	80*	110*
II. <u>Shorebirds, Gulls and Terns:</u>										
		* Estimated Week of								
Spotted sandpiper	1	7/25 to 7/31	None		still present		0	0	0	5*
Yellow-legs	1	7/31	None		still present		0	0	0	5*
Black tern	1	7/30	None				0	0	0	1
III. <u>Doves and pigeons.</u>										
Mourning dove	present		325*	8/30	still present		0	0	0	325*
IV. <u>Predaceous birds</u>										
Horned owl	present		30*	8/30	still present		0	0	0	30*
Barred owl	present		450*	8/30	still present		0	0	0	450*
Fish crow	present		60*	7/10	still present		0	0	0	60*
Osprey	present		28*	7/13	still present		0	0	0	28*
Red-shouldered hawk	present		600*	8/23	still present		0	0	0	600*

(over)

3-1752
Form NR-2
(April 1946)

Okefenokee

UPLAND GAME BIRDS

May

August

8.

1613

Refuge _____ Months of _____ to _____, 194_____

(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.
Bob-white	50,000 acres pine woods, fields, islands	20 12 1500	53% males 47% females	N O N E	2500*	Within an area 1 mile square around Camp Cornelia there are 9 coveys with 79 indi- viduals or 1 bird for every 7-3/11 acres.
Turkey	pine woods, fields, islands	143 0 200		N O N E	350*	

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

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 Okefenokee

Months of May thru August 1948.

(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.
Shelled corn and mixed grain.	5	None	5		N	O	N	5	X	5	

(8) Indicate shipping or collection points Folkston, Georgia

(9) Grain is stored at Camp Cornelia headquarters, Folkston, Georgia.

(10) Remarks used for baiting duck banding traps by Biologist.

NR-8a (3) 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.